



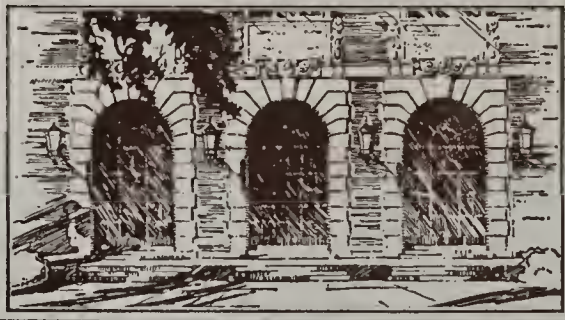
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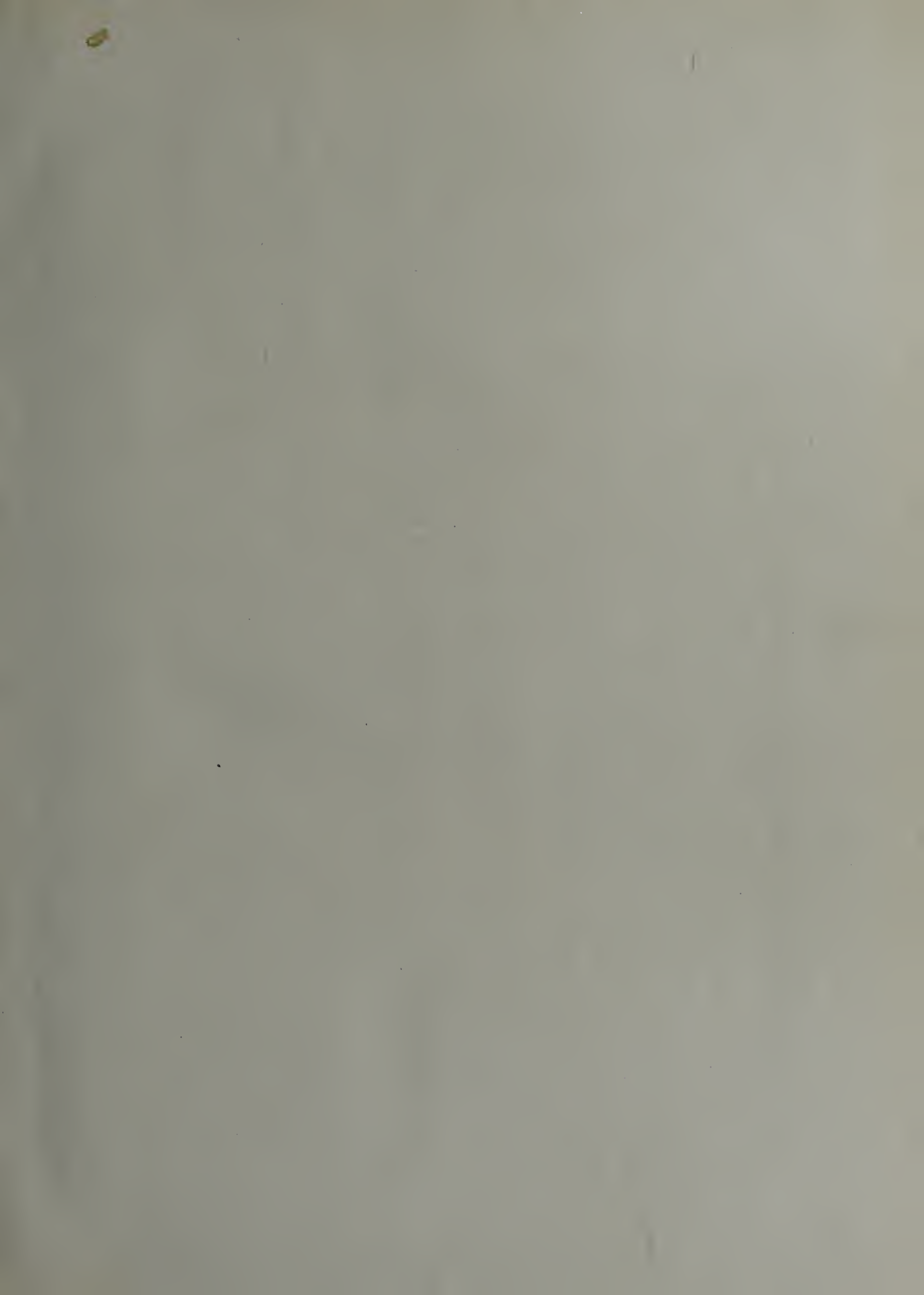
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## PREVENTIVE MEDICINE AND THE GENERAL PRACTITIONER

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2-4-24 E.B.  
Six years ago, at the first banquet of the American Association of Industrial Physicians and Surgeons, held in Detroit, I commented on the fact that the industrial physicians, in devoting the major part of their time and attention to keeping employees well, were pointing the way to the general practitioner. I then ventured the prediction that, in the not distant future, the "family physician" would become, in large part, the "family health adviser," and would find his largest usefulness and derive a large part of his income in the field of preventive medicine.

The time seems opportune for more extended discussion of this prediction. Recently at the conferences on medical education, which are held each winter in Chicago, there have been numerous expressions of opinion that, notwithstanding the remarkable and gratifying advance in medical education in this country in the last quarter century, decided, if not radical, changes are necessary if our medical schools are to graduate students who are trained to render the best service that modern medicine makes possible.

Recent discussions in many medical societies, as well as papers and editorials in medical journals, voice a pronounced dissatisfaction with existing methods of medical practice. At a conference held in Washington last March, on the call of Surgeon-General Cumming, of the U. S. Public Health Service, to discuss the future of public health in this country, perhaps the most important and illuminating revelation was the deduction from several hundred questionnaires returned by medical students that public health (preventive medicine) is not "being sold" to the young men and women who are interested in medicine. The large majority of them reply that the matter has never been brought to their attention, and the idea of public health service as a career has never been considered by them.

To the family physician, and especially to the young men and women who are just entering on the practice of medicine, the possibility of impending changes in the methods of medical practice and medical education is of vital interest. There is a widespread feeling of unrest in the medical profession—a feeling much accentuated by the late war. Many physicians formerly engaged in general practice in small towns and rural communities, on being discharged from the medical service of the army and navy, were unwilling to return to the arduous work and meager returns of rural prac-

tice; and complaint comes from many such communities that they are without medical service of any kind. Some would find the solution of this problem in the graduation of more physicians, with a lowering of the requirements of premedical and medical education, in spite of the fact that we still have in the United States one physician for about every 700 of the population—a ratio nearly twice that of any other country in the world; despite, too, the further fact that there is no way of forcing the more poorly trained physicians into rural practice—a fortunate circumstance, because no other group of practitioners have such imperative need of that self-reliance and resourcefulness which comes in large part from adequate preparation.

The passing of the "family physician" is predicted and deplored. Some would seek to restore him by eliminating much or all of the instruction in the specialties, restricting the medical curriculum along clinical lines to medicine, surgery and obstetrics. Others advocate a curriculum which would deliberately encourage preparation for exclusive devotion to a specialty, and provide service for the community by the plan of group practice.

There is much complaint of the disproportion between the fees commanded by the specialist and the modest fees of the general practitioner. This is the excuse sometimes offered for the vicious—indeed, criminal—practice of "fee-splitting"; that is, a commission paid the family physician by the specialist, usually a surgeon, without the knowledge of patient or family, for a case brought to him for operation. The family physician feels keenly the injustice to himself and the frequent harm to the patient which result from the growing custom of patients' guessing at the diagnosis of their own symptoms and resorting direct to the specialist of one sort or another, a plan which often results in unnecessary operation and leaves the patient no better, and frequently worse, than before. The widespread activity of pseudomedical cults, osteopathy, chiropractic, naprapathy, Eddyism and the like, is a constant source of aggravation to the honest, adequately trained physician, and the demand that there shall be one uniform standard of preparation for the practice of the healing art is logical and necessary for the public welfare. Parenthetically, it may be remarked that the necessary legislation to secure this end can come only through the education of the public, in whose interest and by whose elected representatives it must be enacted.

It is obvious, then, that important changes are coming in methods of medical education, and it is quite as certain, for reasons presently to be set forth, that in this evolution preventive medicine will come to play a much larger rôle than in the past.



Preventive medicine is that science and art which seeks to prevent the occurrence of disease in the individual and to limit its spread in the community. It comprises (1) personal hygiene and (2) community hygiene and sanitation. Personal hygiene is that body of knowledge and practice by which each individual protects himself from disease, which might come to him by invasion from without or by disturbance of normal physiologic processes within his own body.

Modern community hygiene or public health has perhaps been nowhere better defined than by Professor Winslow of Yale University: "Public health is the science and art of preventing disease, prolonging life and promoting physical health and efficiency through the organized community efforts for the sanitation of environment, the control of community infections, the education of individuals in principles of personal hygiene, the organization of medical and nursing service for the early diagnosis and preventive treatment of disease, and the development of social machinery which will insure to every individual in the community a standard of living adequate for the maintenance of health."

The general practitioner is intimately concerned with both of these phases of preventive medicine. In the matter of personal hygiene—much the more important of the two—if people are to be educated as to what makes for health and efficiency, and trained in proper habits of living and working, it is the physician—the family physician—to whom the community must look, primarily, for advice and instruction. The public health officials of any community, whose duty it is to set up safeguards of pure water and food supply, and to give attention to sewage disposal, sanitary housing, the institution of quarantine when necessary, the registration of vital statistics, and all other measures by which the community as a whole seeks to protect its members against disease—these officials are practically helpless without the cordial, intelligent, constant cooperation and support of the physicians of the community.

Preventive medicine, therefore, must come to have a larger place in medical education and practice for several reasons:

1. In this field, the physician can render the largest service to his patients.
2. It affords a source of income of which the family physician is in need.
3. Unless physicians render that service in the prevention and control of disease which modern medical science has made possible, other agencies will undertake this task.
4. Public health work—community hygiene—cannot flourish without the constant, intelligent support of the medical profession as a whole. Let us consider the items of this argument more in detail.

#### POSSIBILITIES OF SERVICE IN PREVENTIVE MEDICINE

The family physician can render the greatest service to his clientele by the preventing rather than by the curing of disease.

To one who is familiar with the stupendous progress in our knowledge of disease in the last sixty years, dating from the epoch-making discoveries of Pasteur, a progress which exceeds that of all the previous centuries, little argument is needed to make it clear that the practical benefits of this advance lie almost wholly in the field of preventive medicine.

The hopes aroused by the discovery of the inoculation against hydrophobia, of antitoxin for diphtheria and of arsphenamin for syphilis that similar specific cures for other diseases would be found have not been realized. If we add to those already mentioned the serums for cerebrospinal meningitis and for tetanus or lockjaw, the cure of hookworm disease by thymol or other agents, and perhaps the use of emetin in cholera and of the acids of chaulmoogra oil for leprosy, we shall have included about all of the contributions to our therapeutic resources that have stood the test of experience. Even among these the prophylactic use of toxin-antitoxin against diphtheria and of antitetanic serum against lockjaw are far more effective as life-saving measures than their use after the disease has actually appeared. The indiscriminate use of vaccines of all sorts, and especially of shotgun combinations such as the so-called phylacogens, proved a delusion from which the profession seems happily to be recovering.

There has been an apparent, but only an apparent, loss to therapeutics through the demonstration by modern pharmacology of the inertness and uselessness of many of the drugs on which so much reliance was placed by the empiric practice of earlier times. The claims of most of these pharmaceuticals have been completely exploded by modern scientific investigation. The wise physician no longer believes that he is really benefiting his patient when he simply doles out to him a few pills or powders or a bottle of liquid medicine, or writes a prescription for them. A few, a very few, drugs have stood the test of accurate pharmacologic study and play a useful rôle in the physician's armamentarium; but the larger part of the resources of modern medicine in the treatment of the sick lies outside of the pharmacopeia. The wise physician has learned to beware the claims of the proprietary medicine manufacturer and of his detail man. The argument that experiment on animals cannot be used in drawing conclusions as to the action of drugs on human beings is, in large part, fallacious, and the so-called clinical proof, the testimony of bedside experience, must be interpreted with extreme care. Careless, inadequate observation of this sort has misled the medical profession more than any other kind of evidence.

Let us now set off against these rather meager gains in the field of therapeutics the tremendous achievements of preventive medicine: Yellow fever, one of the most dreaded and fatal scourges of mankind, all but abolished from the civilized world, even in its endemic focus in Ecuador; typhus, or ship fever, the dreaded tabardillo of the tropics, robbed of its terrors and made entirely controllable by the discovery of its mode of transmission, through the louse. During the World War, after thousands had succumbed to this disease in the Balkans and in Russia, the epidemic was promptly and completely arrested by the delousing of soldiers and civilians by relatively simple means.

Typhoid fever, the paratyphoids and the dysenteries, up to twenty years ago the most prevalent and fatal of army diseases, have been conquered through our knowledge of the modes of transmission, by provision of pure water and food, the detection and segregation of typhoid carriers, and inoculation against these diseases. Malaria, also by reason of the discovery of its mode of transmission by the anopheles mosquito, has been brought under control,



and vast areas of the most fertile and productive portion of the earth, hitherto all but uninhabitable by the Caucasian race, may now be occupied and cultivated by men of any race.

Cholera, once a frequent visitor to our own nation as well as to others, sweeping in vast pandemics from its endemic focus in India, has not visited the United States for a generation, and with constant watchfulness may be prevented from ever again becoming a scourge. The plague, likewise, has been all but exterminated, and may be completely abolished from the civilized world by the diligent application of our present knowledge.

These marvelous possibilities of modern sanitation and hygiene are not matters of mere theorizing but have been demonstrated on an enormous scale both in civil life and in wartime. One need but call to mind the wonderful accomplishments of the late General Gorgas and his staff in converting the Panama Canal Zone, once the most deadly pest-hole on the globe, into a region which presents an annual morbidity and mortality rate which compares favorably with that of the healthiest cities anywhere.

Contrast the awful experience of our own armies during the Spanish-American War and of the British in the Boer War—less than a quarter century ago—with that of the Japanese in the Russian war, and of all nations in that most terrific of all wars, the World War.

Through the civilized world, the experience of nations, states, cities and rural communities is equally gratifying as shown by statistics of illness and death. More than twelve years have been added to the average human life. The diseases of infancy and early childhood have been conquered to such a degree that in every well-conducted city the deaths in this early period of life are less than half what they were twenty or twenty-five years ago, in proportion to the population.

Of the achievements of modern surgery, it is unnecessary to speak to intelligent physicians or laymen—all made possible by the discovery of the microbic causes of wound infection and by aseptic technic, which is almost exclusively a preventive measure.

Progress has of necessity been slower in the growth of our knowledge of diseases of internal origin resulting from disturbed metabolism, excessive strain, mental and physical, defective heredity and bad habits of eating, living and working. Nevertheless, we already have accumulated knowledge which, if it could be transmitted to every individual so clearly and impressively as to induce him to cultivate and adhere strictly to correct habits of living, would result in an enormous reduction of human illness and an increase of human efficiency. To this great stock of knowledge, medical investigators are daily adding new increments.

With knowledge of all these facts, can one doubt for a moment that in medicine, more than in any other field, an ounce of prevention is worth many pounds of cure? Can one escape from the conviction that far and away the largest possibilities of service by the physician lie in the domain of prevention?

#### A SOURCE OF INCOME

One hesitates to use a commercial expression for fear that it may lead the reader away from the great truth that medicine is a profession of service, and the moment one abandons that point of view and substitutes money-getting as his chief goal, he sacrifices the great glory and satisfaction of a medical career. If,

however, one were to use a frequent expression of the business world, one might say that preventive medicine is the "best goods" which the physician has to sell, and he is a poor merchant indeed who devotes his time to the display and sale of his poorer, less valuable goods, to the neglect of those which his customers—his patients—must soon discover are altogether the best goods for them to buy. And his patients are willing to pay for such goods, and the physician, to use another commercial phrase, "needs the money."

There is no doubt that the average income of the general practitioner, especially in the smaller cities and rural communities, has relatively declined in the last quarter century, and especially in the last decade. This decline is due to a number of conditions, some of which it is not easy to analyze. The very accomplishments of preventive medicine to which reference has been made have materially lessened the frequency and duration of many diseases. Typhoid fever, the infantile diarrheas, diphtheria and malaria were formerly sources of very considerable annual revenue to the average practitioner, yet he cannot but rejoice in the fact that these diseases have been so greatly lessened; and to the glory of the right-minded physician be it said that he has done all that he could do to bring about this result. The rapid development of hospitals and hospital practice, and the automobile and good roads have materially enhanced the capacity for service of the individual physician. He can give better and more efficient care today to two or three patients than he could give to one in earlier days, with the same expenditure of time and energy. While this factor has increased the income of some physicians, it has certainly diminished the average income.

The growth of specialism has doubtless affected the income of the family physician in some localities, but not to the extent that is often imagined. Specialism, of the right sort, does not take from the general practitioner work which he formerly did, but renders a service which was not possible before, and, properly used and controlled, greatly increases the service that medicine can render the sick.

The family physician of today is quite as competent as were those of previous generations to perform the minor surgical procedures, such as to remove foreign bodies from the conjunctiva or wax from the ear, to lance felons or boils, to reduce strangulated hernia or dislocations of joints, to dress the usual fractures, and to meet other surgical emergencies.

I doubt, too, that the medical cults, widespread as they are, materially encroach on the legitimate revenue of the really capable physician. Sooner or later, most of the foolish people who resort to these fads are compelled to seek the aid of scientific medicine, and they are very likely to need more attention and for a longer period than if they had not trifled with quackery of various sorts. The exploitation of the public by these cults is exasperating to the physician, but the real harm they do is not to him but to the public.

In the practice of preventive medicine, the practitioner has a legitimate source of income for service which he has heretofore, for the most part, given away in offhand suggestion and advice.

#### PREVENTIVE WORK OF OTHER AGENCIES

If the medical profession, and especially its largest, most important contingent, the family physician, does not assume leadership in this movement to prevent disease, other agencies will undertake the task. Indeed,



they are already doing this very thing. The social service worker, the public health nurse, the great benevolent foundations, have entered the field and are meeting the demand of the public for the institution of measures by which they may secure the benefits of modern sanitary science. Medical men are prone to underestimate the degree to which the public is already informed as to the developments of modern medicine and its possibilities in the prevention of disease. Perhaps the best evidence of this is the large amount of space devoted to health topics in the current literature of our time. Many of the leading newspapers print a health column every day edited by more or less—frequently, less—competent physicians. The periodical magazines circulating in the aggregate millions of copies seldom print an issue without one or more articles dealing with some achievement of medical science.

Now the significance of this fact is that the publishers of these newspapers and magazines are meeting a universal demand. They are not inspired by altruistic motives, and are not seeking to force on their readers information that they think they need but do not seek. They are printing material that will sell their product. Can one assume for a moment that a public so informed will fail to demand the institution of those measures of personal and community hygiene that will bring to them the beneficent fruits of modern medicine? No, the medical profession must make its choice. It may fight the irresistible movement of the people to secure these benefits, by community hospitals, health insurance, provision for the protection of maternity, the correction of remediable defects in schoolchildren, or the many other forms this movement may take; in which case, the profession will certainly be brushed aside or crushed as by a steam roller. Or the medical profession may recognize this trend and assume that leadership which it is its right and duty to assume. As leaders, it can direct these movements in such a way as to secure the largest possible benefits to the people as a whole and to conserve its own rights and emoluments. In any movement seeking the conservation of the health of the community, the highly trained, scientific medical man is the one indispensable factor. Any movement which seeks to secure his service at a wage which is not commensurate with the highly specialized training, skill and ability which the long, arduous and expensive modern medical education has secured for him, or which attempts to secure this service under conditions, by contract, or otherwise, that are obnoxious to any highly trained expert, must fail to secure the results that are sought. In the long run, that method of administering medical science, either preventive or curative, which best insures an adequate compensation and acceptable conditions of work to the physician is certain to insure the best returns to the community.

#### IMPORTANCE OF INTELLIGENT COOPERATION

The fourth argument—that public health cannot flourish without the intelligent, cordial cooperation of every physician in the community—is so obviously true that it needs no elaboration. Moreover, when medical students are fully informed as to the great advantages and the enormous possibilities of preventive medicine, there will be no dearth of men seeking service in the field of public health, because this phase of hygiene and sanitation is certain to make a strong and effective appeal to a large group, provided the conditions of public health work—reasonable wage, security of tenure of

office and freedom from cheap and corrupt political interference—are insured.

How is the family physician to practice preventive medicine, to combine this with the present type of practice and to secure for such work a fair monetary compensation? This query can best be answered by pointing out what is already being done; for much more has been accomplished in this direction than is realized except by those who have surveyed the situation with some care.

The dentists were first in the field, and for some years it has been the custom of the good practitioners of dentistry to insist that the children especially, of their clientele, should be brought to them at regular intervals, three or four months, usually, in order that they may be trained in the proper care of the teeth, and the earliest signs of decay detected and arrested.

The infant welfare movement, inaugurated first among the poor by Budin of Paris in the so-called *nourissons*, has been the means of saving thousands of infant lives and of insuring sounder, stronger adults. This infant welfare movement has extended rapidly throughout the civilized world, at first as a charitable work; but within the last three or four years it has been translated into private practice. Many of the men engaged in pediatric work now secure a very considerable portion of their incomes from fees paid by mothers for advice in the care of their healthy, normal infants. The frequency with which such visits to the physician are made, at which the weighing and measuring of the child constitutes an impressive demonstration, varies, of course, with the zeal of the mother, the condition of the child and the judgment of the physician.

Similarly, it is rapidly becoming the custom in private practice for the prospective mother to seek examination and advice from the earliest stages of pregnancy, at intervals of from two to four weeks. In communities where this custom has for some time prevailed, as in New Zealand, the fatal accidents of labor, both to mother and infant, have been cut in half.

Reference was made in the beginning of this paper to the industrial physicians and surgeons. They, too, are pioneers in this field of prevention; for, in the best organized industrial establishments, the efforts of the medical department are almost exclusively devoted to keeping the employees well. Some of the great insurance companies have awakened to the life-saving possibilities of preventive medicine, and now offer their policyholders thorough examination at stated intervals for a small fee, or gratuitously. This, too, is not a philanthropic proposition, but one designed to reduce the number of death claims and conserve the funds of the policyholders.

A great national institution, the Life Extension Institute, organized by laymen, provides for its members a periodic physical examination, with medical advice to those found in need of it. This institute has made one serious mistake in setting a fee for its medical examiners that is utterly inadequate. There is a mistaken notion in the minds of most laymen and of many physicians that the physical examination of a healthy person demands less time and skill than that of one who is sick. The fact is quite to the contrary. A frank expression of disease, such as pneumonia, decompensation in cardiovascular affections, an acute infection—indeed, of almost any illness—should be recognized by the veriest tyro in medicine, although a thorough, complete examination must



always be made to insure the absence or detect the presence of obscure complication. To assure an apparently healthy individual that he is sound in all respects and free from any tendency to disease, able to withstand the stress and strain of the business in which he is engaged and of all the activities which make up his daily routine, requires an exhaustive, thorough examination that demands a high degree of skill and much time.

Many men, especially of large affairs, give evidence of their interest in this matter by subscribing to bureaus of urinalysis, paying a fee of from \$10 to \$25 a year for a quarterly report on the analysis of a specimen of urine sent to the laboratory. This is a practice that should be discouraged, because the examination of the urine alone is of little value. Many serious diseases which come on insidiously give no evidence of their presence in the urine. The person who is securing such reports at intervals from a clinical laboratory is lulled into a sense of security as to his health, and is extremely likely not to resort to his physician for a thorough, complete physical examination. Such an examination once a year is a far greater safeguard than an examination of urine every week.

A few wiser men, especially in the cities, make it a practice to seek such a thorough, comprehensive physical examination every few months or weeks.

To bring about the more general practice of preventive medicine, it is only necessary to extend the custom, now followed by a few, to all the people in any community. The action taken by the House of Delegates of the American Medical Association at the St. Louis session is evidence of the fact that the medical profession is aware that such examinations are important, and that they should be encouraged and facilitated. The resolution, passed by the House, as presented by the Council on Health and Public Instruction, reads:

WHEREAS, The need and value of periodic medical examination of persons supposedly in health are increasingly appreciated by the public, it is recommended by the Council on Health and Public Instruction that the House of Delegates authorize the Council to prepare suitable forms for such examinations and to publish them in *THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*; and that the county medical societies be encouraged to make public declaration that their members are prepared and ready to conduct such examinations, it being understood that the indigent only shall be examined free of charge and that all others are expected to pay for such examinations.

To render adequate and satisfactory service to his patients in the matter of prevention of ill health, the family physician should visit their homes at such intervals as will enable him to know the conditions of their living and working, and to advise when changes in such conditions are essential for the welfare of the family or any of its members. He should know intimately the schools that the children are attending and should advise with their teachers, when necessary, as to their school life in relation to their physical well-being.

Is the medical profession, as now constituted, prepared to meet this demand, which, to some degree, it must create? Is the average family physician so educated as to the facts and possibilities of preventive medicine that he can render as effective service in this line as he is supposed to render in curative medicine? It must be acknowledged that he is not.

#### THE REMEDY

And the remedy: First, study must be undertaken by the general practitioners, preferably, in part at least,

through special continuation courses, provided for this purpose at medical centers; and the publication of a journal which shall present the newer truths of hygiene and sanitation in attractive, readable form, both to the profession and to the laity. Happily, the House of Delegates of the American Medical Association was alive also to this need, not satisfactorily met by any of the existing journals, and therefore instructed the Board of Trustees to arrange for the publication of such a journal of hygiene.

Secondly, for the physicians of the future, the present and coming generation of medical students, a revision of our present curriculum must be made in such manner as to stress the importance and need of prevention as distinguished from cure. This does not mean anything like so radical a revision as might at first appear. The remedy does not lie in the injection of new courses in formal sanitation, hygiene, bacteriology and the like, into an already overstuffed curriculum, or the replacement of existing courses by such as these; at least, to any marked extent. It lies rather in a change of attitude of every instructor in every course given in the clinical branches. The possibility of the prevention of disease and the wound infections should be a dominant thought in the mind of every clinician at every lecture or demonstration. For example, every time a case of typhoid fever is presented, the clinician should propound to the class these queries: "When, how and why did this patient become ill with this disease? Who was at fault? How could it have been avoided? How can the extension of this disease to others in the community be prevented? What are the specific duties of the attending physician in such a case in relation to the patient, the nurses, himself, the family and the community health officer? Just exactly what steps, what precautions should he take in discharging his full duty to each of these?"

Similarly, in discussing a case of wound infection as of a hand, he should inquire how much infection could have been forestalled: Who was at fault in not instituting the proper measures at once when the wound was sustained, the ignorance or the neglect of the patient himself? or, if he was ignorant, Why have those in control of the establishment in which he is employed allowed him to remain uninformed as to what he should do when injured?

The education of medical students as to what constitutes preventive medicine in the several diseases and accidents of life can be much more effectively accomplished when these are discussed in relation to all other aspects of such disease or injury—its etiology, pathology, diagnosis, prognosis and treatment—than in courses which treat only of the preventive measures detached from other aspects of the subject. Preventive medicine is the "safety first" movement in the combat against illness, wound infection and death. Needless to say, there is a considerable body of information concerning bacteriology, hygiene and sanitation which is best taught as it is now, in a department devoted to those branches.

Thirdly, it must be emphasized at all times and in all places that the medical profession is above all a profession of service to mankind. While, in the interest of the physician, of his family, his fellow physicians and his patients, it is his right and duty to exact a monetary return for his labors that is commensurate with the long, expensive period of preparation which has been required of him and the high degree of skill



thus acquired, he makes the most grievous and fatal mistake if he yields to the spirit of commercialism which is abroad, seemingly in more intensive degree than ever before, and makes "money-getting" his dominant thought.

Imbued with that fine spirit of service, the wise physician of today cannot but realize that his largest avenue of usefulness lies in the field of the prevention of disease.

25 East Washington Street.

## SURGERY FOR THE TUBERCULOUS

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This subject is presented on the basis of the following fundamental facts, which are assumed to be established and acceptable by those who have had the largest opportunities for studying tuberculous diseases in man, and who know the scope and limitations of surgery as a remedy for such diseases.

### PREMISES

1. Tuberculous patients, particularly those with pulmonary tuberculosis, are *always* "substandard" surgical risks, and must *always* be so regarded when surgical measures are contemplated for their relief.

2. The delicate "balance of power" <sup>1</sup> existing between the disease and the resistance is easily disturbed, and the scales may be turned unfavorably by surgical operations through

- (a) exposure,
- (b) shock,
- (c) loss of blood,
- (d) undue prolongation of an unwisely chosen anesthetic,
- (e) inspiration or other forms of pneumonia following anesthetics;
- (f) lowered resistance and diffusion to new and previously uninfected fields,
- (g) postoperative mixed infection,
- (h) injudicious use of so-called "drainage,"
- (i) lack of a proper appreciation of the paramount importance of physiologic rest.

3. A large majority of those who are doing general surgery have failed to appreciate the limitations of surgery in the treatment of tuberculosis, or the special precautions required for such surgical operations when necessary and justified, and in these particulars the general surgeon has much to learn from the orthopedic surgeon.

4. A careful, differential, bacteriologic study is essential to a complete understanding of the surgical requirements and limitations of suspected tuberculous abscesses and effusions, and ordinary open operation and drainage should not be employed till this investigation has been made.

### SUBSTANDARD SURGICAL RISKS

Little need be said regarding Paragraph 1 of the premises as set forth in the foregoing prospectus. Whether or not it is accepted as true, my purpose in presenting it as a basis or foundation for what I have to say regarding the details of the second item of the synopsis will be served.

1. Wetherill, H. G.: The Balance of Power in Infection, Colorado Med. 14: 168 (June) 1917; Tr. Western S. A., 1917.

I believe that the statements made as premises are true and are fully and wholly justified by facts, and that the opinions of those who have had the largest opportunities to study tuberculous diseases and the relation of surgery as a remedy for the cure of either tuberculous or nontuberculous conditions in tuberculous patients will bear me out in these beliefs.

That tuberculous invalids, particularly those with pulmonary tuberculosis, are *always* "substandard" surgical risks, and that special precautions should *always* be taken in the preparation, operation and after-care of such patients when surgical operations are performed on them would appear to me to be so evident as to require no argument. However, in dealing with some of the special precautions required, this phase of the discussion will be briefly taken up later.

My principal appeal will be made for the exercise of the greatest possible care in selecting cases for operation, and in doing the operation, when one must be done, in such a way as to permit of no harm coming to the patient as a direct or indirect result of the operation or any of the incidents connected therewith; all of which means the exercise of extraordinary surgical judgment in the choice of patients for operation, and unusual conservatism, patience and faith in the essential tendency of tuberculosis toward cure,<sup>2</sup> if mixed infections are avoided and the resistance of the patient is not impaired or broken down.

Failure to appreciate the importance of functional and physiologic rest of a tuberculous organ or part, mixed infections, malnutrition and lowered defensive resources or resistance to the disease and its complications are responsible for most of the deaths attributed to tuberculosis.

The orthopedic surgeons, as a class, have long understood the importance of functional and physiologic rest as an essential of treatment in tuberculosis, and many physicians and general surgeons have yet to learn that very important lesson.

The average orthopedic surgeon knows also that uncomplicated tuberculous processes, free from mixed infections, or at least free from mixed infections of certain types, which he checks bacteriologically, do better if open operations and "drainage" can be avoided, and reliance is placed in physiologic rest of the diseased part and such general supporting treatment as may be indicated.

### DISTURBANCE OF BALANCE OF POWER BY SURGICAL OPERATIONS

Let us now consider in what respect the interests of the tuberculous patient may be served in the event of his developing a condition for the relief of which a surgical remedy is necessary, and what are the particular and special dangers against which he is to be safeguarded.

He is, of course, subject to all of those ordinary risks of operation that are unavoidable in every case, but he is also peculiarly susceptible to injury from other causes purely and solely because of his tuberculous condition and because his powers of endurance and resistance are impaired.

Much depends on the condition for which the operation is to be done, and in particular whether it is tuberculous or nontuberculous, for, unquestionably, with the

2. The key note of successful treatment is the early detection of the disease. The tuberculin test, the roentgen ray and the necropsy table all confirm the well observed facts which prove that after 40 years of age, most human beings have at some time in their lives had a little tuberculosis and recovered from it without ever having been aware of its presence (Trudeau, E. L.: An Autobiography, Philadelphia, Lea & Febiger, 1915).



former a special and particular technic in certain steps of the operation may be adopted, as will be pointed out later; and certainly the greatest care of all details in the patient's interest will be observed.

*Exposure, shock, loss of blood, undue prolongation of an unwisely chosen anesthetic, and inspiration or other forms of pneumonia following anesthetics.* These constitute real dangers to all patients undergoing surgical operations, but they have especially dangerous factors for tuberculous patients, since their disease diminishes their defensive resources and retards their recuperation.

Patients with pulmonary tuberculosis are very susceptible to injury from certain anesthetics when badly administered over relatively long periods of time, and are quite prone to pneumonia and lung abscess from inspiration of food, fluid and mucus from the nasopharynx, and the diffusion of their own sputum into previously healthy areas of one or both lungs.

The choice of the anesthetic, the time over which it is used, and the skill with which it is administered are vital factors in operations on those with pulmonary tuberculosis.

Briefly stated, my own conviction regarding anesthesia for surgical operations on the tuberculous is as follows:

Wherever and whenever possible, local infiltration anesthesia, preceded by small doses of narcotics or sedatives associated with atropin or scopolamin, are preferable to all other forms and varieties of anesthesia. In this connection it is proper to state that with the modern local anesthetics and apparatus now available, and the exercise of a reasonable degree of skill and patience, almost any surgical operation may be done without causing the patient undue pain or discomfort.

Next in safety and efficiency, in selected cases, I should place spinal anesthesia, and after that, for operations up to the limit of one hour in duration, chemically pure sulphuric ether, preceded by small doses of morphine and atropin to prevent anxiety and resistance, to reduce the quantity of anesthetic required, and to dry the fauces and prevent the deep inspiration of faucial, tracheal and bronchial secretions.

For tuberculous persons, nitrous oxid gas would have a small place in my armamentarium, and chloroform would be absolutely barred from all use, even to the extent of a few drops as a preliminary to ether. I regard chloroform as a deadly poison in such infected cases, and believe that it should never be used under any circumstances. Harold Styles of Edinburgh gave us that tip more than twelve years ago.

*Lowered resistance and diffusion to new and previously uninfected field, postoperative mixed infection, injudicious use of so-called "drainage," and lack of a proper appreciation of the paramount importance of physiologic rest.* These are essential and vital factors which one may do little more than mention in a short paper, for to treat of them exhaustively would require a volume of many pages, with an elaborate chapter to be given to each subject.

In the records of every tuberculosis sanatorium may be found the histories of many patients who have suffered from some of the foregoing consequences of injudicious surgery. One superintendent, in a letter recently received, says:

The most discerning surgical judgment should be exercised when surgical measures are contemplated in tuberculous subjects. This spring a tuberculous girl of 18 was operated on for appendicitis. At the same time her diseased

tonsils were removed. It not only upset her "balance of power" but so lowered her resistance that the tuberculosis, which was "quiescent," became reactivated. This is only one of many instances I could cite in which operators have lacked surgical judgment.

Any or all of the factors in the first group (*a* to *e*) may be responsible for lowered resistance and diffusion of the disease. New foci in the lungs, pleura, kidneys or abdomen may readily be established, or, as in the foregoing instance, quiescent foci may be reactivated. Pure tuberculous areas may be and are engrafted with other organisms, and so, serious postoperative mixed infections arise, as was often the case when open operations with open drains were used for empyema, psoas abscess, tuberculous appendicitis and peritonitis.

#### "DRAINAGE" OF TUBERCULOUS AREAS

This brings us to the consideration of so-called "drainage" of tuberculous areas.

It is difficult to be temperate in the consideration of this phase of surgery for tuberculous areas, as there are many intelligent and skilful surgeons who still believe that, in the tuberculous abdomen, for example, drainage is necessary, and that a rubber tube or a piece of gauze will drain—all of which is, of course, erroneous and entirely aside from the harm these foreign bodies are known to cause in admitting mixed infectious organisms, and causing persistent sinuses and fistula.

That such "drainage" is now known by many surgeons of the largest experience to be unnecessary and distinctly harmful; that every one who knows anything of surgery knows that, in serous cavities, tubes and gauze "drain" for only a few hours and always act as irritants with a distinct tendency to cause persistent sinuses with mixed infections and intractable fistulas, counts for nothing with him who has for years had the "drain habit" and is afraid to abandon it. There are, too, a few conservatives who never know what others have done or are doing, and who will continue to "drain" tuberculous serous spaces as long as they live.

Since the disastrous experience of the World War, it has dawned on the minds of many surgeons that rib resections and open drainage of empyema cavities, particularly the tuberculous ones, was a mistake, and in the due course of time it may be hoped that this experience will lead to the conviction that the same principle applies to tuberculous serous cavities elsewhere, particularly in the abdomen.

#### BACTERIOLOGIC STUDY AND PHYSIOLOGIC REST

This leads us to the consideration of the great importance of a differential bacteriologic study of supposed tuberculous areas, whenever possible, before any operation is advised or undertaken.

Here, the orthopedic surgeon has blazed the trail with his psoas, bone and joint abscesses, and has checked his operative surgery with his bacteriologic findings. He cleans and closes tuberculous abscesses, if he opens them at all, but he is much more likely to aspirate them to relieve tension, if necessary, immobilize them and assure them long periods of *physiologic rest*.

Though many physicians and surgeons have recently learned to apply these important, scientific methods and vital curative principles to tuberculous serous spaces elsewhere, especially to the pleura, the careful bacteriologic study of tuberculous serous spaces previous to operation is far from being universal, and the principal of long periods of physiologic rest as a pre-operative or a postoperative procedure is not generally appreciated as it should be.



Even a tuberculous lung may be given long periods of almost absolute physiologic rest by the use of artificial pneumothorax after the method suggested by John Murphy at Denver in 1898, and quite satisfactory relative rest may be secured by keeping a patient in bed in a position which favors the use, principally, of the other lung and reduces the respiratory rate. Immobilization of bones and joints, including the vertebrae, has been reduced to an exact science by the orthopedist. Peristaltic arrest and relative physiologic rest of the abdominal organs may be secured by diet, confinement in bed, and small doses of opium or other well-known drugs; so it would seem that the important principle of physiologic rest may be applied to almost any organ or serous surface subject to tuberculosis.

# SUMMARY

It would be unfortunate if I should in the least degree convey the impression that I am opposed to necessary surgery for tuberculous persons, whether it be for tuberculous or nontuberculous diseases. What I do plead for is that tuberculous patients may always be regarded as substandard surgical risks, and that they require special study and special consideration in every way when an operation is deemed necessary for them. In particular, the choice of the anesthetic, the manner of its administration, the time over which it is used, and the preparation and after-care of the patient are important determining factors in procuring good results. In all operations for known tuberculous conditions, a conservatism based on the well understood tendency of the disease toward recovery should be exercised; operations should be checked with a careful bacteriologic study, and the essential principle of physiologic rest should be employed both before and after operation.

Every possible precaution should be employed to prevent postoperative mixed infections, and to avoid diffusion and dissemination of the disease. As a means to these ends, futile attempts at "drainage," which is unnecessary and does not drain and does predispose to sinuses, fistula, hernia and delayed convalescence, should be strictly avoided.

Given a tuberculous invalid with an empyema, an ischiorectal abscess, broken down or suppurating lymphatic glands, a tuberculous testicle or kidney, or a peritoneal tuberculosis involving the fallopian tubes or appendix, a timely, carefully considered and dexterously done surgical operation will bring about results absolutely unattainable by any other means. These are the circumstances under which surgery accomplishes marvelous results and brings credit to the surgeon and life and health to the patient. It relieves him of his burden of constant toxemia, reactivates his defensive mechanism, and, restoring his recuperative "balance of power," enables him to win the fight he must otherwise have lost.

Such surgery is brilliant, triumphant and satisfying.  
1127 Race Street.

**Cholecystectomy in Venezuela.**—The first surgical removal of the gallbladder in Venezuela was made by Dr. Salvador Córdoba on Feb. 16, 1917. The operation was a success; the second operation of the same character was performed by Dr. L. Razetti on Feb. 20, 1917. In his recent thesis submitted to the National Academy of Venezuela, Dr. Córdoba reviews the evolution of gallbladder surgery, since Jean Louis Petit made his first cholecystectomy in 1737 to the first excision of the gallbladder by Lagenbuch in 1828 and the subsequent general use of the operation.

## BETANAPHTHOL IN THE TREATMENT OF HOOKWORM DISEASE

C. N. LEACH, M.D.

AND

G. G. HAMPTON, M.D.

MANILA, P. I.

During the last few years, considerable interest has been revived in the use of betanaphthol as an anthelmintic, particularly in the treatment of hookworm disease.

TABLE 1.—RESULTS OF PRELIMINARY EXAMINATION BY PLAIN SMEAR AND WILLIS SALT FLOTATION

Number Examined	Uncinaria			Ascaris			Trichuris		
	+	—	%	+	—	%	+	—	%
397	372	25	93.7	173	224	43.6	104	293	26.2

TABLE 2.—WORM COUNTS AFTER TREATMENT WITH BETANAPHTHOL AND CHENOPODIUM

Prisoner's Number	Examination of Stool			Worm Count After Betanaphthol				Worm Count After Chenopodium			
	H.	A.	T.	H.	A.	T.	Oxy.	H.	A.	T.	Oxy.
1.....	+	—	—	0	0	0	0	0	0	0	0
2.....	+	+	—	0	0	0	0	0	0	0	0
3.....	+	+	—	0	0	0	0	0	0	0	0
4.....	+	+	—	0	0	0	0	0	0	0	0
5.....	+	—	—	0	0	0	0	1	0	0	2
6.....	+	—	—	0	0	0	0	6	0	0	8
7.....	+	—	—	0	0	0	0	0	0	0	0
8.....	+	—	—	0	0	0	0	0	0	0	0
9.....	+	+	—	2	0	0	1	1	2	0	3
10.....	+	+	+	5	0	0	0	0	0	0	0
11.....	+	+	+	3	0	0	2	0	0	0	0
12.....	+	+	—	6	0	0	12	0	0	0	0
13.....	+	+	—	9	0	0	2	5	0	0	2
14.....	+	+	—	2	0	0	12	0	0	0	0
15.....	+	+	—	4	0	0	0	0	0	0	2
16.....	+	+	+	12	0	0	1	0	0	0	0
17.....	+	+	—	2	0	0	0	0	0	0	0
18.....	+	+	—	26	0	0	0	0	0	0	0
19.....	+	+	+	3	0	0	20	0	0	0	0
20.....	+	—	—	12	0	0	0	3	0	0	0
21.....	+	—	+	3	0	0	0	0	0	0	0
22.....	+	—	+	19	0	0	0	0	0	0	0
23.....	+	—	+	59	0	0	2	0	0	0	4
24.....	+	—	—	68	0	0	0	0	0	0	0
25.....	+	—	—	11	0	0	0	1	0	0	0
26.....	+	+	—	6	0	0	0	3	0	0	0
27.....	+	—	+	1	0	0	0	0	0	0	0
28.....	+	—	—	18	0	0	0	1	0	0	0
29.....	+	+	—	15	0	0	1	0	0	0	0
30.....	+	—	+	36	0	0	2	0	0	0	0
31.....	+	—	+	1	0	0	16	1	0	0	2
32.....	+	+	—	1	0	0	0	0	0	0	0
33.....	+	—	—	0	0	0	26	0	0	0	0
34.....	+	+	+	6	0	0	0	0	0	0	0
35.....	+	—	—	4	0	0	0	0	0	0	0
36.....	—	—	—	3	0	0	4	0	0	0	0
37.....	+	—	—	7	0	1	0	0	0	0	0
38.....	+	+	—	4	0	0	0	5	1	0	0
39.....	+	+	—	0	0	0	23	0	0	0	0
40.....	+	+	—	6	0	0	0	0	0	0	0
41.....	+	+	—	1	0	0	0	0	0	0	0
42.....	+	—	—	0	0	0	0	0	0	0	0
43.....	+	—	—	2	0	0	0	0	0	0	0
44.....	+	+	—	2	0	0	1	1	0	0	0
45.....	+	—	+	15	0	0	0	0	0	0	2
46.....	+	—	+	2	0	0	0	0	0	0	2
47.....	+	—	—	8	0	0	0	1	0	0	3
48.....	+	—	—	1	0	0	0	0	0	0	0
49.....	+	—	—	0	0	0	0	0	0	0	0
Total.....				385	0	1	125	29	3	0	28

With the work of Drs. Smillie and Mhaskar in mind, it was decided to carry out experiments along similar lines in the Bogambra Prison at Kandy, Ceylon. The inmates of this jail are all men, the census varying from 250 to 350 prisoners. This number is constantly varying on account of new admissions, dismissals on completion of prison term, and transfer to other prisons. They are admitted from all parts of the island. The ages vary from 19 to 75 years, and the term of confinement from one month to thirty years.



The majority of the inmates are of the farming class, and their living conditions, on the estates and in their homes, have been such as to offer the optimal condition for infection with hookworm.

In this work every possible assistance was given by the prison superintendent, Mr. C. C. Woolley, and his

TABLE 3.—RESULTS OF TREATMENT WITH BETANAPHTHOL

	Uncinaria			Ascaris		
	Num-ber	Cured		Num-ber	Cured	
		Num-ber	Per Cent.		Num-ber	Per Cent.
Given first treatment.....	284	90	31.6	136	95	69.8
Given second treatment..	139	53	38.1	62	40	64.5

staff. In only one case did a prisoner refuse to take treatment, and no attempt was made to force the issue. The work, therefore, was carried on under the most favorable conditions.

A preliminary microscopic examination was made of the stool of each inmate. In obtaining these fecal specimens, tins bearing the prison number of each of the inmates were issued to the jailer, who in turn supervised the distribution to the cells of the individual prisoners. Tins were issued in the afternoon when the prisoners were locked up for the night. The specimens were collected in the morning at roll call, and delivered to a special ward which had been turned over to us for laboratory work. Two coolies were detailed by the jailer to assist in the preparation of stools for microscopic examination, the Willis salt flotation method being used. These men also did the screening of stools for the recovery of worms. The work of the coolies was supervised at all times by the medical officer in charge of the work, and the treatments were all administered by the officer.

TABLE 4.—SEVERITY OF INFECTION WITH HOOKWORM

Hemoglobin From 75 Prisoners			Maximum Number of Worms Expelled by Any One Patient	Minimum Number by Any Patient	Average per Patient
Highest	Lowest	Average			
100%	60%	73 2%	68	0	8

Preliminary stool examinations of 397 prisoners showed a 93.7 per cent. infection with *Uncinaria*, 43 per cent. with *Ascaris* and 26 per cent. with *Trichuris trichiura*.

Betanaphthol in powdered form, in 50 grain (3.25 gm.) doses, was administered in one dose as the first treatment to all who were found positive for hookworm. No preliminary or later purge was given. Treatments were given at 6:30 a. m., before any food had been taken, and all prisoners treated were kept under observation in the special ward, in order to note any untoward effects of this drug. No food was allowed until four hours had elapsed after the treatment. In no case were any serious symptoms complained of by the patients.

Eight days after this initial treatment, stools from all patients treated were again examined for ova. This examination revealed "microscopic cures" in 31.6 per cent. of the hookworm cases and 69.8 per cent. of the *Ascaris* cases. No case was considered negative until three 2 by 3 inch slides had been thoroughly examined and no ova found.

A second treatment of 60 grains (3.9 gm.) of powdered betanaphthol was given to 139 of the patients showing ova in their stools after the first treatment. They were again kept under observation in the ward, and no food was allowed until five hours after treatment. No untoward effects were noticed following this heavier dose. In all cases treated, the prisoners returned to their regular work after the 11:30 a. m. meal.

Eight days after the second treatment with betanaphthol, stools examined for ova showed that of the 139 patients with hookworm disease, 38.1 per cent. did not show ova in their stools, and of the sixty-two with *Ascaris* infestation, 64.5 per cent. showed no ova.

The first treatment consisted of 50 grains of betanaphthol. The second treatment consisted of 60 grains of betanaphthol. It is interesting to note that of the 385 hookworms examined, not one ancylostome was found.

Thirteen out of fifty-four patients received two treatments with betanaphthol, and expelled no worms.

TABLE 5.—WORM COUNT ON FIFTY-FOUR CASES SELECTED AT RANDOM

	Number Exam-ined	Uncinaria			Ascaris			Trichuris		
		+	-	%	+	-	%	+	-	%
Preliminary microscopic ex-amination.....	54	52	2	96.3	24	28	44.4	15	39	27.9

Eight out of twenty patients received the test treatment with oil of chenopodium who had previously had two treatments with betanaphthol, and expelled no hookworms.

Stools collected from fifty-four selected patients showed a total of 441 *Uncinaria*, no *Ascaris*, two *Trichuris* and 139 *Oxyuris* worms. These were expelled after two treatments with two doses of betanaphthol. Of the twenty cases available for test treatment with oil of chenopodium, following the two treatments with betanaphthol, twenty-nine *Uncinaria*, three *Ascaris* and twenty-eight *Oxyuris* worms were recovered from the stools after treatment.

The microscopic examination of stools after one treatment with betanaphthol revealed an absence of ova in 31.8 per cent. of the cases of hookworm and 69.8 of the *Ascaris* cases, while the worm count showed thirteen out of fifty-four, or 24 per cent. of the *Uncinaria* cases and none of the *Ascaris* cases to be cured.

In the twenty patients given the test treatment with oil of chenopodium, eight expelled no hookworms,

TABLE 6.—MICROSCOPIC EXAMINATION OF STOOLS EIGHT DAYS AFTER FIRST DOSE OF FIFTY GRAINS OF BETANAPHTHOL AND AGAIN AFTER SECOND DOSE OF SIXTY GRAINS

	Number Exam-ined	Cured			
		Uncinaria		Ascaris	
		Number	Per Cent.	Number	Per Cent.
After first treatment.....	54	23	44.2	16	29.6
After second treatment..	16	9	56.2	5	31.2

showing a cure in 40 per cent. of the patients who received two treatments with betanaphthol.

The prisons of Ceylon offer an unusual opportunity for research work in tropical medicine. Owing to the transient character of the population, they also afford an excellent medium for the transmission of public



health propaganda to all parts of Ceylon. The Bogam-bra prison has representatives from every province of the island. The average daily census for 1921 was 456, and the total admissions amounted to 1,641. It is to be hoped that our work will be followed by a more thorough study in all of the prisons of Ceylon.

TABLE 7.—WORM COUNT AFTER BETANAPHTHOL

No. Patients' Stools Examined	Uneinaria			Asearis	Thichuris	Oxyuris
	Male	Female	Total			
54	121	320	441	0	2	139

An attempt was made to determine what effect the length of term of confinement in the jail would have on the degree of hookworm infestation. The excellent sanitary conditions of the prison have reduced the chances of reinfection to the minimum. Unfortunately, a sufficiently large number of prisoners in each class were not available to render this experiment as valuable as one would like, but the findings are recorded in the hope that further work may be done along this line in the tropics.

It is customary in the Ceylon prisons to work the prisoners on the roads and other work outside the prison compound. These men work in their bare feet, and are frequently exposed to ideal conditions for infestation with hookworm. Therefore, any attempt to draw conclusions from Table 10 would be useless. One man listed in the table had been in confinement for thirty years, yet hookworm ova were demonstrated in the stools.

An opportunity was afforded to determine the effects of betanaphthol as a vermicide by following the administration with a postmortem. A prisoner (a Singhalese

TABLE 8.—WORM COUNT; TEST TREATMENT WITH TWENTY-MINIMS OF CHENOPODIUM; STOOLS COLLECTED FOR THREE DAYS AFTER TREATMENT

No. Patients' Stools Examined	Uneinaria			Asearis	Trichuris	Oxyuris
	Male	Female	Total			
20	17	12	29	3	0	28

man, aged 55) who was sentenced to be hanged, volunteered to take betanaphthol in any quantity that we cared to administer. The stool was positive for hookworm and *Trichuris*. He was undergoing a religious fast for two weeks prior to his execution, his diet consisting only of a small quantity of rice once a day. November 25, 50 grains of betanaphthol in the powdered form was given, and no preliminary or later purge administered. All stools were carefully collected from this time on until the execution. As the prisoner was not allowed to leave his cell at any time and was compelled to use a bucket for latrine purposes, there was no chance of loss of any of the material. November 27, another dose of 75 grains (4.9 gm.) was administered. All stools for forty-eight hours after the first treatment showed no helminths. The same was true for twenty-four hours after the second treatment. The stools following treatment from this patient were all unformed or semiliquid in consistency, containing considerable partially digested rice.

The prisoner was hanged at 8 a. m., November 28, and the necropsy was performed the same day at 9:45 a. m. Before the digestive tract was removed for examination, the different anatomic portions were securely

tied off so that none of the contents could pass from one section to the next. The intestinal tract was removed, starting with a section of the pylorus and including the entire intestinal tract down to the rectum. The intestine was opened one section at a time, and the contents of each section were placed in a separate bucket. This material was examined for ova and parasites. Fifteen male necators were obtained from the washings of the fecal material found in the colon. One male necator was found attached to the jejunum near the duodenum, and a second attached to the mucous membrane of the third portion of the duodenum. Many ova in the eight and sixteen segmented stages were found in the fecal material from the descending colon and rectum. The mucous membrane of the small intestine was covered with a thick, tenacious mucus. On removal of this mucus, the mucous membrane showed numerous small petechial hemorrhages. The abdominal viscera were otherwise normal with the exception of the spleen, which was enlarged to about twice its normal size.

TABLE 9.—DEGREE OF INFECTION

Average number of uneinarias expelled from each of 54 patients after two treatments with betanaphthol.....	8
Average number of uneinarias expelled from each of 20 patients after test treatment with 24 minims of oil of chenopodium...	1.45

Although this man received 125 grains of betanaphthol in two doses at a forty-eight-hour interval, no worms were ever recovered during life. At postmortem, however, seventeen necators were found, of which two were still firmly attached to the mucous membrane of the small intestine.

SUMMARY

The 397 prisoners examined are fairly representative of the island of Ceylon, since they come from all nine provinces. The infestation rate, as shown by microscopic examination of the stools, is 93.7 per cent.

The severity of infestation is well illustrated by the hemoglobin findings and worm count. The average worm count from fifty-four prisoners was found to be only eight. The average hemoglobin from seventy-five prisoners was found to be 73.2 per cent.

Betanaphthol, as an anthelmintic, administered in one portion without purge preceding or following, has produced "microscopic cures" in only 31.6 per cent. of cases after one treatment. After a second dose, following an eight day interval, it has produced "microscopic

TABLE 10.—EFFECT OF CONFINEMENT ON DEGREE OF INFECTION

Term of Confinement, Years	Num-ber	Result of Microscopic Examination			Per Cent. Infected		
		Uneinaria	Asearis	Trichuris	Uneinaria	Asearis	Trichuris
From 2-3	10	9	4	3	90	40	30
From 3-4	8	6	2	1	75	25	12.5
From 4-5	5	5	2	2	100	40	40
From 5-30	11	10	4	1	90	36	9.1

cures" in 38.1 per cent. of those cases remaining positive after the first treatment.

Although the microscope shows 69.8 per cent. of cures for *Ascaris* after the first treatment with betanaphthol, and a further 31.2 per cent. cure with the second dose, none of the stools examined for helminths showed *Ascaris*.



With the dose as used in this prison (50, 60 and 75 grains of powdered betanaphthol) administered in one portion on an empty stomach and without purge, not a single patient experienced any untoward effects.

## A CASE OF HYPERSENSITIVENESS TO SILK\*

J. ALEXANDER CLARKE, JR., M.D.  
AND  
GEORGE P. MEYER, M.D.  
PHILADELPHIA

This case is reported because of its unusual features.

### REPORT OF CASE

Miss C. V. A., aged 21, a college student, was referred for diagnosis and treatment of asthma, March 30, 1921. Her maternal great-grandfather had asthma, her maternal uncle suffered from eczema, a maternal first cousin, once removed, had asthma, and a paternal uncle had attacks of hay-fever. She had had all the diseases of childhood, also diphtheria and tonsillitis, and influenza of moderate severity, two years previously. The adenoids had been removed in childhood. She suffered many head "colds" each winter. There was a history of some dyspnea about fifteen months before following a severe cold. This was apparently very mild. The condition now complained of had developed about three months before and had been steadily growing worse. After the last attack, she was confined to the infirmary for a few days. The attacks developed in the evening before she went to bed, and usually occurred after an evening spent in Boston. The condition during the night was good, and there was no difficulty on arising in the mornings. There were no clues as to a possible cause.

The physical examination revealed nothing of interest except a mild chronic eczema. The urine showed considerable indican but was otherwise negative. The blood smear revealed 29.5 per cent. lymphocytes and 10.5 per cent. eosinophils.

Complete atopic tests were made according to Cooke's technic, with the ordinary inhalant and food groups. Positive reactions were obtained with house dust, rice and flaxseed, and with some of the less important foods. The reactions, while positive, were not very strong, and, outside of the rice as a possible constituent of face powders, did not agree with the history.

The patient returned to college with the advice to avoid face powders. During the remainder of the college year, attacks occurred about twice a week but were not very severe.

September 19, after stating that she did not suffer from urticaria or hives, the patient volunteered the information that "welts" developed on her skin whenever it came in contact with silk. She had noticed this ever since the attack of influenza, two years before. One waist in particular was so troublesome that she was unable to wear it, although the same waist had been worn for a number of years before without difficulty. September 21, this waist was brought to the office and was put on in our presence. The skin was perfectly clear at the time except for the mild eczema. Within fifteen minutes, a giant urticaria developed on the skin of the arms, neck and chest and down to the line of the underclothes, but was most marked on the arms. The suffering was quite real and 12 minims of epinephrin in two doses was given without producing a great deal of relief. The urticaria lasted twelve hours in spite of the fact that the waist had been removed at the first sign of trouble.

The two sleeves of the waist were then cut off, approximately 100 square inches, and extracted according to the method of Coca.<sup>1</sup> This was tested by the intradermal method of Cooke, one test being made in each arm simultaneously. This would make the total amount used in the test from 0.02

to 0.05 c.c. Within a few minutes (the exact time was not taken, but was not longer than ten minutes) the patient began scratching her palms, and coughing. Then urticaria became general; the eyes were red and the lids were greatly swollen, the nose watered and then was blocked completely by the swollen mucous membrane; the asthma became alarming and epinephrin was administered in liberal doses. Within two hours, the entire reaction was over, and the patient went home. This was a typical constitutional reaction. The patient had never experienced a similar attack.

A sample of the waist was then sent to the Philadelphia Conditioning House, which reported that the silk was heavily weighted and that the fibers were decayed. Through the courtesy of Mr. Edwin A. Russell and Mr. Henry Meyer the following information on the silk industry was obtained: The cocoon of the silkworm is made up of strands of an insoluble substance bound into a solid mass by a more soluble substance known as "glue." The cocoons are placed in hot water, which softens the glue; an end of the strand is then picked up and the entire strand is pulled out. A reasonable effort is made to rid the fiber of the glue, but we are informed that it is never possible to get the fiber entirely pure. In certain specimens, the glue may make up as high as 25 per cent. of the silk. The fibers are then "thrown" together to form a thread. This is done by a number of processes. Among the most common is one involving the use of neat's-foot oil. The threads are then "weighted." Here there are various processes involving the use of zinc, tin and silica as the weight. After this, the silk is dyed, usually with anilin dyes.

In our effort to find just where in all these processes the silk picked up the substance which had such a bad effect on our patient, Mr. Henry Meyer kindly furnished us with silk in all stages, up to the weighting process. These were extracted in the same manner as the original waist and tested. Our task was immediately simplified because a strongly positive cutaneous reaction was obtained with the extract of a single strand of silk just as it is taken from the cocoon. In this specimen, there is nothing but the filament and the glue which has adhered to it. There is little doubt that the reaction is due to the rather soluble glue and not to the

### DOSAGE AND RESULTS

Date	Dosage C.c.	Results
10/ 8/21	0.0025	No reaction
10/27	0.005	Mild urticaria for three days
11/ 3	0.01	Mild asthma and urticaria soon after
11/10	0.01	Mild urticaria soon after
11/17	0.01	Mild urticaria soon after
11/26	0.0125	Mild urticaria and cough
12/ 3	0.0125	Mild urticaria, no cough or asthma
12/15	0.01	No reaction
1/20/22	0.011	No reaction
1/27	0.013	Considerable asthma and urticaria for 1½ hours
2/ 4	0.012	No reaction
2/16	0.013	With epinephrin, 3 minims; no reaction

relatively insoluble fiber. Four different extracts of silk have been tested and all the reactions have been strongly positive. These have included silk after throwing and after it has been thrown and boiled.

Since this severe reaction, the patient has had only six attacks of asthma, and these have all been very mild and of short duration. Most of these have a direct connection with silk, such as pressing clothes. One attack came on when the patient was visiting a girl friend. They occupied the same bedroom, and the attack started while the friend, who wore silk underwear, was undressing. The attack was soon over and, after discarding a silk quilt, sleep was undisturbed. Needless to say, the patient does not wear any silk herself. During this period, there was an occasional mild attack of urticaria. The eczema has remained unchanged.

The frequency of this hypersensitiveness is rare. We have tested more than 200 patients and have distributed the extract to other workers, so that we can safely say no other reactions have been obtained in 500 cases of asthma and urticaria.

With the thought in mind that silk might be the sole cause of all three complaints, asthma, urticaria and eczema, especially when silk on other persons might cause considerable

\* From the Laboratory of Physiological Chemistry of Jefferson Medical College.

1. Coca, A. F.: J. Immunol. 7: 163 (March) 1922.



difficulty, we thought ourselves justified in attempting hyposensitization.

This was done, and doses were given of the extract of her own waist, with the results presented in the accompanying table.

An attack of tonsillitis then interrupted the treatment, which has not been resumed. March 1, the patient tried to wear silk straps on her shoulders, and urticaria immediately appeared.

## COMMENT

While the dosage used is undoubtedly open to criticism, it nevertheless indicates the great difficulty attendant on hyposensitization in certain cases. The smallest estimate possible of the dose used in the first testing would be 0.02 c.c. It was probably more than this. Thus, after four months of treatment, the patient was able to stand barely half the original dose, which gave such an alarming reaction.

## THE ARTHRITIS OF SERUM SICKNESS\*

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AND

HOMER F. SWIFT, M.D.

NEW YORK

Most patients receiving considerable amounts of therapeutic serum develop serum sickness. Formerly this was most frequently observed following the administration of diphtheria antitoxin, but recently the introduction of larger doses of horse serum in the treatment of pneumonia and cerebrospinal meningitis has furnished more examples of this condition. Clinically, it is manifested during the second and third weeks following the serum treatment by fever, lymph node enlargement, urticaria and short, transitory leuko-

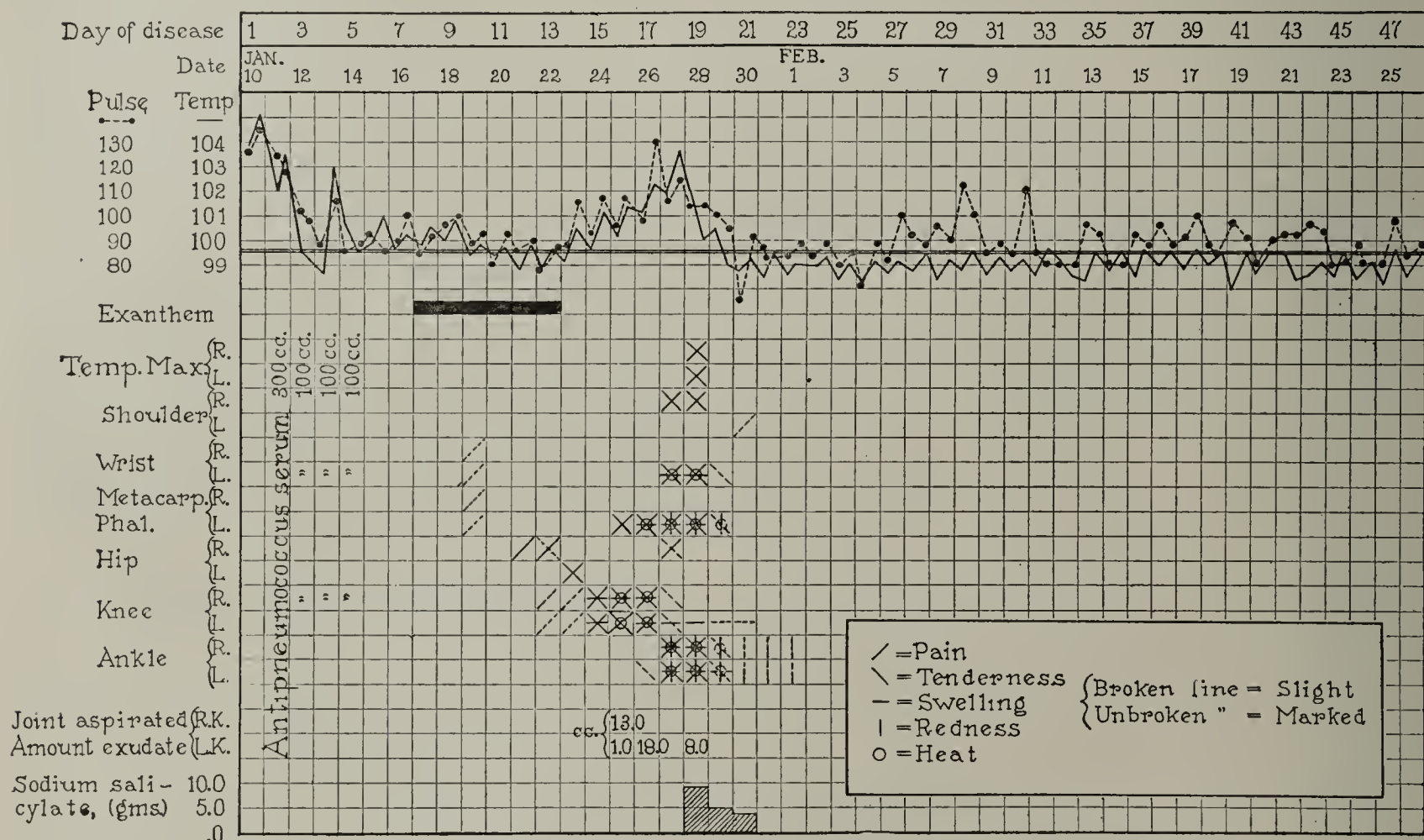


Chart 1 (Case 1).—Temperature curve, exanthem and joint involvement in case of serum sickness.

Cooke and Coca<sup>2</sup> assert that hyposensitization is relative and temporary. To say this tolerance is only relative implies that there is a maximum beyond which it is impossible to hyposensitize. We know little or nothing about this implied maximum dosage. In the majority of cases, it is of no clinical importance. Usually, there is a clinical "cure" before the maximum is reached but in this case, we feel we are very close to the patient's tolerance for the silk solution, and yet the skin hypersensitiveness to externally applied silk remains approximately the same. There is a decided improvement in the asthma. This may be due entirely to the fact that the patient makes no attempt to wear silk (formerly silk was worn, care being taken to keep it away from the skin), or it may be the result of the injections.

It seems probable from this case that there are cases in which hyposensitization is effective to such a slight extent as to be of almost no value.

334 South Twenty-First Street.

penia followed by leukocytosis. Another less frequent but very distressing symptom is joint pain and tenderness, the exact nature of which is but little understood. Up to the present time this manifestation has taken its name from the subjective symptoms.

Pirquet and Schick<sup>1</sup> speak of it as *Gelenkschmerzen*. During the treatment of a large series of patients with antistreptococcic and antidiphtheritic serums, they did not encounter a single instance in which there was clinically demonstrable exudation into the joints. Hartung<sup>2</sup> found joint manifestations in ten among 375 serum treated patients (ten of sixty-eight cases of serum sickness). In eight of these ten cases, one or more joints showed swelling. The joints most often involved were those of the hands; in two instances, the right knee was swollen, the patella floated, and the skin

\* From the Hospital of the Rockefeller Institute for Medical Research.

1. Pirquet, C., and Schick, B.: *Die Serumkrankheit*, 1905.

2. Hartung, C.: *Jahrb. f. Kinderh.* 42: 72, 1896.

2. Cooke and Coca: *J. Immunol.* 7: 219 (March) 1922.



was stretched and reddened. Goodall,<sup>3</sup> in describing the "complications" of serum sickness, states that "the most frequent of these is one which usually goes by the name of 'joint pains', but which is, I have no doubt, an arthritis." In certain of his cases, swelling of the joints occurred, but this was extremely rare; in the majority there was only pain with stiffness. In only

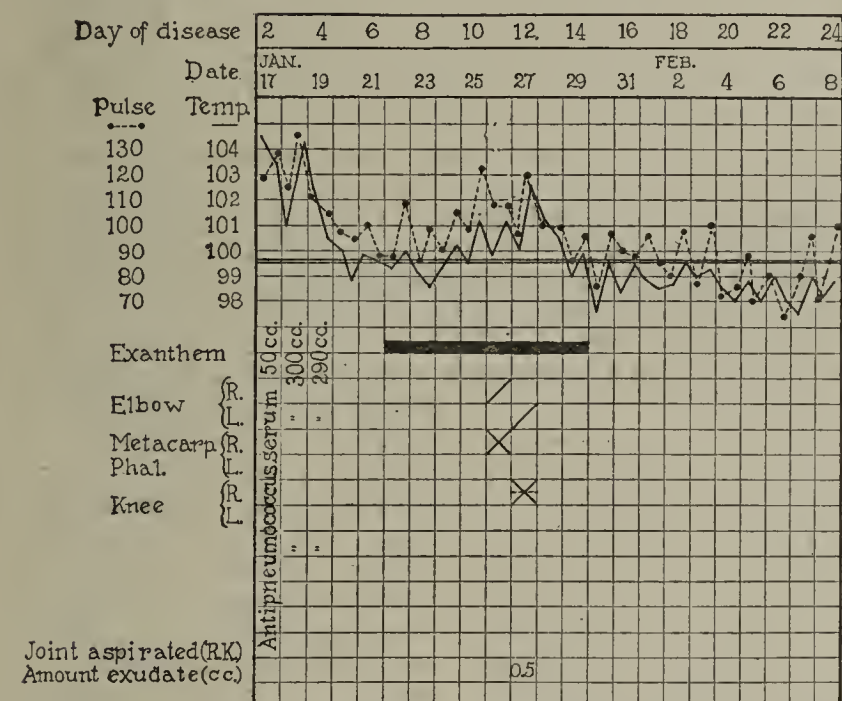


Chart 2 (Case 2).—Temperature curve, exanthem and joint involvement in case of serum sickness.

one of 376 patients having joint involvement did a relapse of arthralgia occur. Longcope<sup>4</sup> describes the condition under the term arthralgia. He says: "In comparison with the severity of the arthralgia, there is little to be observed. The joints are somewhat tender to the touch, but there is not, except in rare instances, swelling or reddening, and the joints are not hot to the touch. In only one instance have I seen a slightly swollen and red wrist." More or less joint symptoms were noted in about 20 per cent. of the cases of serum sickness observed by Weaver.<sup>5</sup> He found the pains to be spontaneous, and increased by motion and sometimes by touch. The severity of the pains was in marked contrast to the limited objective findings, and the pain disappeared in from one to three days, leaving the joints without permanent alteration. In his experience, swelling of the affected joints was unusual. Von Ritterstein<sup>6</sup> observed one case with swelling of the joints. Poynton and Paine<sup>7</sup> state that "antitoxic sera free from bacteria may sometimes produce effusion into the joints." Bécclère, Chambon and Ménard<sup>8</sup> observed urticaria and symptoms of joint lesions in calves injected with horse serum. They state that microscopic examination of sections of the skin and joints revealed no evidence of inflammation.

Weaver<sup>5</sup> found that with doses of horse serum under 100 c.c. the frequency and intensity of serum disease was more or less in direct proportion to

the amount introduced. Longcope and Rackemann,<sup>9</sup> and Mackenzie and Leake<sup>10</sup> have demonstrated that individuals receiving large amounts of serum fall into different classes according to their ability to react to the injection of the foreign protein. The majority produce antibodies readily and have severe symptoms; a smaller group produces no circulating antibodies and remains free from symptoms; the third group is intermediate between the other two.

In this hospital the occurrence of serum disease in patients treated intravenously with large amounts of Type I antipneumococcus serum offered an opportunity to investigate the character of this joint involvement and to compare the joint symptoms with the arthritis found in patients with rheumatic fever.

Ten cases of serum sickness have occurred in the last six months, six of which have shown mild or severe arthritic symptoms. One patient had pain only in the right shoulder; a second had pain in both shoulders and knees. Aspiration of the knees did not demonstrate an exudate. The remaining four had more severe joint symptoms extending over a longer period of time. In each, an exudate was demonstrated in one or more joints. In two of these, the exudates were evident both clinically and on aspiration; in the other two, no clinical signs of increased fluid could be determined, but aspiration yielded exudates. These last four cases were studied:

#### REPORT OF CASES

CASE 1.—J. H., a man, aged 29, was admitted, Jan. 10, 1922, on the first day of pneumonia. Physical signs indicated involvement of the left lower lobe. Blood culture yielded pneumococci, Type I. During the second day, 300 c.c. of antipneumococcus serum (Type I, New York State Board of Health, Lot 187 A) was given intravenously. On each of the three succeeding days, 100 c.c. of this serum was similarly administered. The patient's condition improved. By the sixth day, signs of resolution had appeared, and the

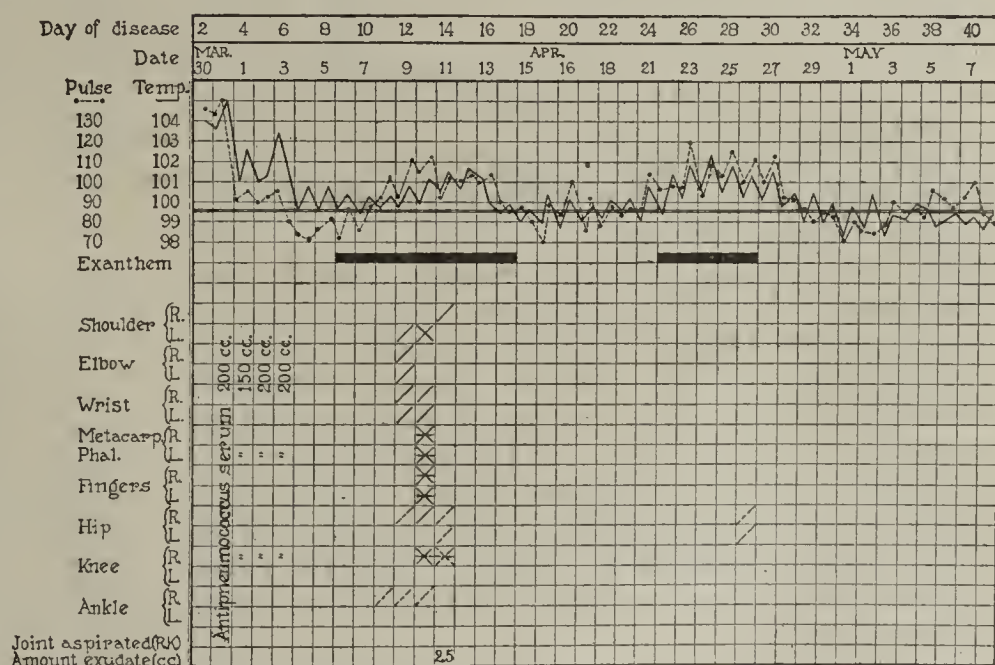


Chart 3 (Case 3).—Temperature curve, exanthem and joint involvement in case of serum sickness.

patient's general condition was good. Serum disease began on the eighth day with a general urticaria, which persisted six days. There was no general glandular enlargement. Joint symptoms appeared on the third day of the serum disease, and continued for fourteen days. These were severe,

3. Goodall, E. W.: *Lancet* 1: 323 (March 2) 1918.

4. Longcope, W. T.: *Nelson Loose Leaf System of Medicine* 2: 632.

5. Weaver, G. H.: *Serum Disease*, *Arch. Int. Med.* 3: 485 (June) 1909.

6. Von Ritterstein: *Jahrb. f. Kinderh.* 4: 542, 1902.

7. Poynton and Paine: *Researches on Rheumatism*, 1913, p. 230.

8. Bécclère, Chambon and Ménard: *Ann. de l'Inst. Pasteur* 10: 567, 1896.

9. Longcope, W. T., and Rackemann, F. M.: *J. Exper. Med.* 27: 341 (March) 1918.

10. Mackenzie, G. M., and Leake, W. H.: *J. Exper. Med.* 33: 601 (May) 1921.



as can be seen in Chart 1, especially in the left wrist and the left metacarpophalangeal, knee and ankle joints. The right knee joint was aspirated on the ninth day of serum sickness, and 13 c.c. of rather turbid, opalescent fluid removed. On the ninth, tenth and twelfth days the left knee was aspirated and exudate recovered each time. Early, this exudate was turbid and opalescent, but later it was greenish-yellow, and only faintly turbid. Precipitin tests made by Dr. W. T. Longcope for the presence of horse serum in the joint exudate revealed, on the ninth day, 1:1,000; tenth day, 1:100, and twelfth day, 1:10. On the tenth day of the arthritis the patient was having so much pain that large doses of sodium salicylate were administered; this was followed by marked improvement. Salicylates were discontinued abruptly without the recurrence of joint symptoms. There was no evidence of cardiac complications. The patient has continued well since discharge from the hospital. He gave no previous history of rheumatic fever or arthritis.

The nature of the arthritis in this patient was the subject of considerable discussion. It appeared with other symptoms of serum disease and disappeared abruptly at the time a serum disease arthralgia would be expected to subside. The additional evidence of distinct amounts of antigen (horse serum) in the exudate early, at the height of the disease, and the almost complete disappearance of the horse serum from the joint two days later, when the symptoms subsided, are comparable with the findings in the blood serum of patients with serum disease. Painful temporomaxillary joints, such as this patient showed, are common in serum disease and rare in rheumatic fever. On the other hand, the intensity of the inflammation in the ankles, knees and left hand was much greater than that usually encountered in serum disease, and more like that of rheumatic fever.<sup>11</sup> The disappearance of arthritis following the saturation of the patient with sodium salicylate is another point in favor of rheumatic fever; for one of us has administered salicylates to patients with serum sickness arthritis without any beneficial effect. In this patient, however, the arthritis of serum disease would naturally be expected to subside at this time; and the concomitant disappearance of antigen from the joint fluid, noted above, led us to consider the arthritis to be the result of serum disease.

CASE 2.—N. M., a woman, aged 19, was admitted, Jan. 17, 1922, on the second day of pneumonia with consolidation of the right lower lobe. A blood culture was sterile. Pneumococci, Type I, were obtained from the sputum. During the

11. At the time of correction of proof, a patient with definite serum disease is under observation. He shows not only pain and tenderness of all of the affected joints, but clinical evidence of effusion into the left knee from which 5 and 7 c.c. of turbid fluid was aspirated on the third and fourth days, respectively; 2 c.c. of fluid was also aspirated from the right knee, even though it showed no clinical evidence of effusion. The ankles showed pain, tenderness, swelling and local heat. This case seems to prove conclusively that marked evidence of inflammation may be found in the "arthritis" of serum disease.

second, third and fourth days of illness, 640 c.c. of Type I antipneumococcus horse serum (New York State Board of Health, Lot 187 A) was given intravenously; crisis occurred on the fourth day. Serum sickness began two days later. A mild arthritis occurred on the fifth day of the serum sickness, and lasted two days. Although there were only uncertain signs of an increase of fluid, the right knee joint was aspirated, and 0.5 c.c. of exudate was obtained, having a leukocyte content of 12,000 cells for each cubic millimeter, 64 per cent. of which were polymorphonuclear leukocytes. No general glandular enlargement occurred. Serum sickness lasted eight days. Convalescence was uneventful. There was no previous history of polyarthritis.

CASE 3.—E. M., a man, aged 24, was admitted, March 30, 1922, on the second day of illness, with consolidation of the left lower lobe. A blood culture was sterile; Type I pneumococci were recovered from the sputum. During the course of four days, 750 c.c. of Type I antipneumococcus serum (New York State Board of Health, 650 c.c. of Lot 196 and 100 c.c. of Lot 198) was injected intravenously, beginning the first day after admission. On the fifth day of illness

the physical signs indicated an extension to the right lower lobe. Improvement occurred two days later. Serum disease began with urticaria six days after the administration of the first dose of serum. The exanthem lasted nine days. Glandular enlargement, glossitis and multiple arthritis were present; the arthritis lasted four days. Clinically, there was evidence of fluid in the right knee joint. This was aspirated, and 2.5 c.c. of greenish yellow, faintly turbid exudate was removed. The fluid contained 4,400 leukocytes for each cubic millimeter, of which 44 per cent. were polymorphonuclear neutrophil cells. A relapse of the serum disease, consisting of urticaria, increase in temperature and pulse, glandular enlargement and mild arthralgia, occurred after a free interval of seven days. It lasted eight days and was followed by an uneventful convalescence. There was no previous history of polyarthritis.

CASE 4.—L. B., a boy, aged 17, was admitted, May 15, 1922, on the second day of pneumonia, moderately ill with involvement of the right lower lobe. Blood culture was negative. Type I pneumococci were found in the sputum. Over a period of three days, 225 c.c. of Type I antipneumococcus serum was given intravenously, with return of temperature to normal. On the seventh day following the first serum administration, urticaria and general glandular enlargement appeared. A moderately severe multiple joint involvement developed two days later, and disappeared completely after three days. Although no definite evidence of swelling could be determined, the right knee was aspirated, and 0.75 c.c. of turbid exudate removed. This exudate contained 12,800 leukocytes for each cubic millimeter, the majority of which were mononuclear in type. The fluid was examined for the presence of antigen (horse serum); a positive precipitin reaction occurred with antihorse rabbit serum in a dilution of 1:15. The patient had serum sickness for six days, and recovered normally. He had had an attack of acute rheumatic fever with polyarthritis one year previously.

#### RESULTS AND COMMENT

In no case was arthritis evident until from two to five days after the appearance of the urticaria. The

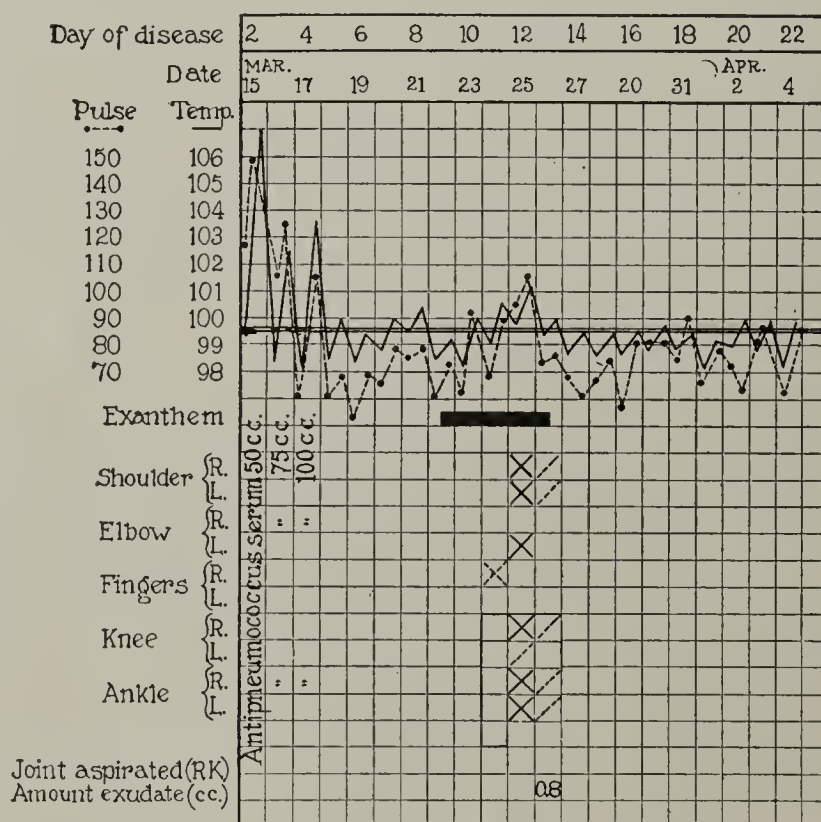


Chart 4 (Case 4).—Temperature curve, exanthem and joint involvement in case of serum sickness.



duration of symptoms in a single joint varied from a few hours to nine days. A striking point was the disappearance of arthritic symptoms in all of the joints of a patient within twenty-four hours of the subsidence of fever. Although pain and tenderness were the only signs of involvement in many of the joints, the recovery of fluids having the character of exudates indicated that the process was inflammatory in nature. Moreover, the clinical examination of the joints in Case 1 revealed the intensity of the process in certain instances. The doubtful nature of this case has already been discussed. Taken alone, it would not be very conclusive; but a gradation of intensity from very mild to very severe is seen in comparing the cases in this order: 2, 4, 3, 1. Such clinical comparison leads one to conclude that all of the arthritic symptoms were due to a common cause—i. e., serum disease.

A description of the exudates is given in the accompanying table. Only the knees were aspirated because of the difficulty in obtaining fluid from smaller joints.

opinion. In view of the uncertainty as to the relation between cause and effect in circulating antibody and antigen, it is impossible, at present, to be definite in reference to the effect of these substances in exudates.

SUMMARY

Among ten patients with serum disease who had received large amounts of horse serum intravenously, there were six who showed definite joint involvement. From the joints of four of these it was possible to aspirate fluid having the gross and microscopic character of an exudate. From a fifth, in whom pain was the only symptom, no fluid could be obtained; the joints of the sixth were not aspirated. The positive findings in the synovial fluids from the four other patients, however, indicate that the arthritic symptoms in serum disease are due to an actual inflammation of the joints. The finding of horse serum in two fluids suggests that the irritation of the joint may be due to the presence of this foreign protein in an allergic tissue.

EXUDATES ASPIRATED FROM JOINTS OF PATIENTS WITH SERUM SICKNESS

Case	Date	Joint	Severity of Inflammation at Time of Aspiration	Quantity Aspirated, C.c.	Total	Leukocyte Count						Precipitin Test for Horse Serum
						Differential						
						Poly- morpho- nuclear Neutro- phils	Large Mono- nuclears	Small Lympho- cytes	Poly- morpho- nuclear Eosino- phils	Pink Staining Cells with Pyknotic Nuclei*	Unclass- ified Cells	
1	1/25/22	Right knee	Marked	13.0	22,400	86.0	9.0	2.0	...	1.0	2.0	
	1/25/22	Left knee	Marked	1.0	.....	78.0	16.0	4.0	...	...	2.0	1:1,000
	1/26/22	Left knee	Marked	18.0	14,000	84.0	10.0	3.0	...	3.0	...	1:100
	1/28/22	Left knee	Swelling only	8.0	5,000	20.0	58.0	8.0	...	5.0	9.0	1:10 ?
2	1/27/22	Right knee	Marked	0.5	12,000	64.0	32.0	2.0	...	1.0	1.0	
3	4/11/22	Right knee	Slight	2.5	4,460	41.0	49.0	5.0	...	3.0	2.0	
4	5/26/22	Right knee	Slight	0.8	12,640	13.0	76.5	6.0	1.0	0.5	3.0	1:15

\* These cells were of the same size as polymorphonuclear neutrophilic leukocytes; they had pink staining cytoplasm and pyknotic circular nuclei, single or multiple.

As only very small quantities of synovial fluid can be aspirated from normal joints, and as this fluid is partially devoid of cellular elements, it is safe to conclude that the recovery of 0.5 c.c. or more of turbid fluid constitutes definite evidence of exudation, especially as these fluids in every instance were microscopically abnormal. In general, the higher cell counts and greater proportion of polymorphonuclear leukocytes occurred in the more acutely involved joints; while the lower total counts and higher proportion of mononuclear cells were found in the fluids from joints mildly abnormal or longer inflamed.

These exudates were indistinguishable cytologically from many of those which we have recovered from inflamed joints of patients with acute rheumatic fever, intermittent hydrarthrosis, and chronic arthritis; and it is of importance to show that such exudates can be produced without the actual presence of bacteria.

The presence of horse serum in two of the joints and the constantly diminishing amount in one of them suggest a possible cause of the arthritis. It may be that in a patient whose tissues are allergic to horse serum the presence of that serum in the synovial cavities sets up an irritation in the lining membrane; and the disappearance of that serum may be the cause of the subsidence of this irritation. Although some workers have considered that the disappearance of the horse serum from the blood stream was due to the development of circulating antibodies, the more recent work of Mackenzie<sup>12</sup> has thrown some doubt on this

Clinically, the polyarthritis of serum disease is usually manifested by pain and tenderness of the joints, but in certain instances swelling, heat and redness may be present. The synovial exudate is microscopically indistinguishable from that occurring in joints of patients with rheumatic fever.

**Activities of Pennsylvania State Board of Health Against Venereal Disease.**—An intensive campaign against venereal disease has been conducted during the last three years by the genito-urinary division of the Pennsylvania State Board of Health. A complete list of the detention homes and genito-urinary clinics was distributed, giving their localities all over the state. Abstracts of state laws regarding prostitutes and quarantine were published, with a report on diagnosis and treatment of syphilis. Attractive colored, illustrated pamphlets on all subjects pertaining to health and disease prevention were widely distributed. A course of instruction on venereal disease was conducted at the Allentown Hospital by well known genito-urinary surgeons, and a play was given by the social workers on the same subject. Working plans of the health and morals committee of the venereal disease division were also published. The thirty-two detention homes are supported by the county or communities, the state furnishing the medical and nursing attention, including drugs and equipment. In the past three years, 72,000 ambulatory patients have received treatment, with no deaths. Five schools are being operated at strategic points where physicians receive a course in the treatment of venereal disease gratis. Through a recent law, the state department of health has had placed at its disposal a modern 400 bed hospital for the isolation, care and treatment of syphilitics. Instructive moving pictures, lantern slides, pamphlets and lecturers are obtainable on request from the education division of the health department for any community desiring them.

12. Mackenzie, G. M., and Fruhbaar, E. L.: Proc. Soc. Exper. Biol. & Med. 19: 269, 1922.

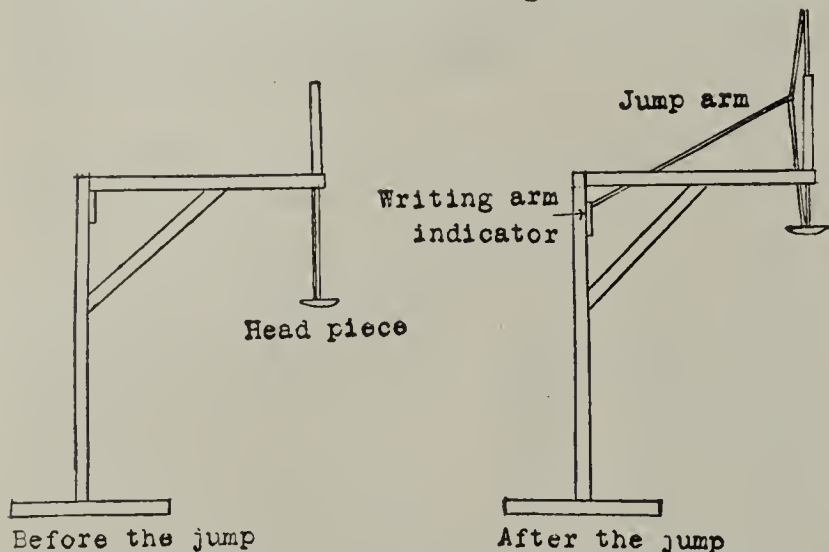


CORRELATION OF EFFICIENCY TESTS  
SECOND REPORT

JESSE FEIRING WILLIAMS, M.D.  
NEW YORK

In a preliminary report<sup>1</sup> on correlation of efficiency tests, a high correlation was shown to exist between Schneider's tests of cardiac efficiency and Sargent's physical test. The group measured varied in age from 11 to 36 years. It was pointed out in that report, however, that the "wide age range of the group tested gives only a limited distribution of any one age, and hence repetition of the test with more homogeneous groups is needed to verify the obtained coefficient."

Such further study has been made. Under my direction, Miss Catherine Somers, a graduate student of



Apparatus employed for securing data in Sargent test.

Teachers College, carried on during 1921-1922 at the University of Nevada the Schneider and Sargent tests. In all, 108 college women were tested.

The apparatus used in securing the data in the Sargent test was specially devised. An upright supported on a base has a fixed arm, attached to which is arranged a head-piece made of cardboard with the lower side padded. The jump arm is attached to an indicating arm, which moves one-third the distance of the jump arm. The subject to have her jump recorded stands under the disk. The operator notes the point at which the indicator stands. The subject makes her greatest possible vertical jump, and the indicator stays at the point reached by the indicator arm. The operator notes the jump in inches and multiplies by three, giving the exact height jumped.

The tests with a homogeneous group of women show that for that age range (from 17 to 23) the two tests have no more relation than mere chance might produce. This lack of positive correlation in this group bears out the surmise made in the preliminary report, namely, that a wide range of age is unsatisfactory for tests of this kind.

The reports of these two tests suggest numerous questions that ought to be answered if there is to be any authority in the tests for physical fitness. What is physical fitness? Is the physical fitness of Schneider's test an entirely different fitness from the type measured in Sargent's test? Dr. Sargent calls his test "the physical test of a man"; but isn't it true that one might jump rather high in Sargent's test and rank low in Schneider's test? If fitness exists, it exists in some form, and

hence is measurable if the proper procedure is followed. We need to have more evidence that the numerous proposed tests of physical efficiency are really measuring what the authors say they are.

The age range of the 108 women in the group studied was from 17 to 23 years, with the distribution given in the accompanying table.

AGE RANGE OF WOMEN IN GROUP STUDIED							
Age .....	17	18	19	20	21	22	23
Number .....	7	39	27	16	11	6	2
Mean, 19.3							

The coefficient of correlation of the entire group was 0.02. For the group of women aged 18, which numbered thirty-nine, a correlation of  $-0.004$  was obtained. This homogeneous group therefore showed a negative correlation. Thus, there would seem to be practically no correlation at all between the Sargent and Schneider tests for women of the age range 17 to 23 years.

SUMMARY AND CONCLUSIONS

1. There was, in the group tested, virtually no correlation between the Sargent physical test and the Schneider cardiac test for women of the age range 17 to 23 years.
2. The rather high correlation of 0.57 previously reported<sup>1</sup> is doubtless a chance result and is due to the wide age range of the group tested, or to a possible difference between men and women.
3. The Sargent and Schneider tests do not measure the same thing. Vigor, stamina, "pep" that Dr. Sargent refers to are not the same qualities as are measured in Schneider's test.
4. Whether Sargent's test is a good measure of physical vigor has not been determined; likewise, the reliability of Schneider's test is not indicated by this study.

CONGENITAL ATRESIA OF ESOPHAGUS,  
WITH ESOPHAGOTRACHEAL FISTULA

REPORT OF THREE CASES \*

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This most common of esophageal anomalies is interesting because of its peculiar development; and it is important for the reason that we have as yet no satisfactory means of dealing with the condition.

REPORT OF CASES

CASE 1.—W. D., a boy, white, aged 6 days, was admitted to the Jefferson Hospital, Dec. 26, 1917, because of inability to retain food. The child was born after prolonged labor, by forceps delivery, but seemed entirely normal at birth. When water was given, regurgitation occurred almost immediately, attended by attacks of dyspnea. Roentgen-ray examination revealed an obstruction of the esophagus, and esophagoscopy by Dr. Jackson established the diagnosis of esophageal atresia. Gastrostomy was performed on the day of admission, but the child died, Jan. 6, 1918, of bronchopneumonia.

Necropsy the same day revealed atresia of the esophagus, the upper portion being dilated and ending in a blind pouch about 1 cm. above the bifurcation of the trachea. The lower segment was smaller in diameter and entered the trachea posterolaterally just above the bifurcation. A probe passed

1. Finkelstein, William, and Williams, J. F.: Correlation of Efficiency Tests, J. A. M. A. 78: 1454 (May 13) 1922.

\* From the Department of Pathology, Jefferson Medical College.



into the upper end of the trachea entered the lower segment of the esophagus and passed readily into the stomach (Fig. 1). No other malformations were found. The lungs showed bronchopneumonia, which was probably due to regurgitation of material from the stomach.

CASE 2.—H., an apparently normal white boy, born in the Jefferson Hospital, March 28, 1921, under the private care of Dr. Edward A. Schumann, to whom I am indebted for permission to record this case, was unable to swallow. Roentgen-ray examination by Dr. Borzel revealed complete obstruction of the esophagus in the upper third, on a level with the supersternal notch. March 31, a gastrostomy was performed, but the infant died the following day. Necropsy revealed an esophageal anomaly almost identical with that noted in Case 1, the upper segment of the esophagus ending in a blind sac about 1 cm. above the bifurcation of the trachea, and the lower segment opening into the trachea directly opposite the point at which the upper segment of the esophagus abruptly ended (Fig. 2). No other malformations were noted.

CASE 3.—J. H., a boy, white, aged 5 days, was admitted to the Jefferson Hospital in the service of Dr. Graham, Jan. 24, 1922, with the statement that the child was unable to swallow. Roentgen-ray examination revealed a complete stenosis of the esophagus at the level of the third dorsal vertebra. Gastrostomy was performed the same day. The child was later seen by Dr. W. H. Spencer, and a report was made that probably the lower segment of the esophagus opened into the trachea, thus accounting for the attacks of choking when the child was fed through the gastrostomy opening; and that the upper segment ended in a blind pouch, as revealed by the roentgen ray. This report was accompanied by a sketch correctly portraying the condition, as later demonstrated at necropsy. The child died, January 27, and the esophageal anomaly disclosed at necropsy was so nearly similar to the other two that a photograph was thought unnecessary.

#### COMMENT

Very little can be added to the comprehensive review of this subject published by Plass<sup>1</sup> in 1919, which included 136 verified cases collected up to 1917. Since that time, cases have been recorded by Cautley,<sup>2</sup> Brenneman<sup>3</sup> (four cases), Huntington,<sup>4</sup> Kastner,<sup>5</sup> Shaw,<sup>6</sup> Taglicht,<sup>7</sup> Reynolds and Morrison,<sup>8</sup> Hirsch,<sup>9</sup> Zausch,<sup>10</sup> Willard<sup>11</sup> and Shattock.<sup>12</sup>

Doubtless, there are many other cases that have failed to find their way into literature, so that the anomaly should demand our attention, if for no other reason than its relatively frequent occurrence.

The malformation is practically always the same, varying only in minor details. The upper end of the esophagus is usually dilated, ending in a blind sac at or above the tracheal bifurcation; and the lower end opens into the trachea at or near the bifurcation. Other anomalies may be associated, atresia ani being the most common.

The etiology is not clearly understood. Shattock<sup>13</sup> believes that, at the time when the pouch from which the lower air passages develop is formed from the

anterior wall of the mesenteron, the posterior wall occasionally participates in the process sufficiently to be drawn forward, thus narrowing the lumen. When, subsequently, the lateral pouching for the formation of the larynx develops from the stomodeum just above this region, so much of the already narrowed lumen is consumed that the connection between the upper and lower portions is left communicating with the air passages.

Giffhorn<sup>14</sup> believes that the lateral folds from which the air passages develop unite at one point with the posterior wall of the esophagus, causing atresia; while below they are unable to unite in the normal manner in the midline, and thus permit a fistulous communication to remain.

The diagnosis is readily made. The child regurgitates almost immediately after taking food. Suffoca-

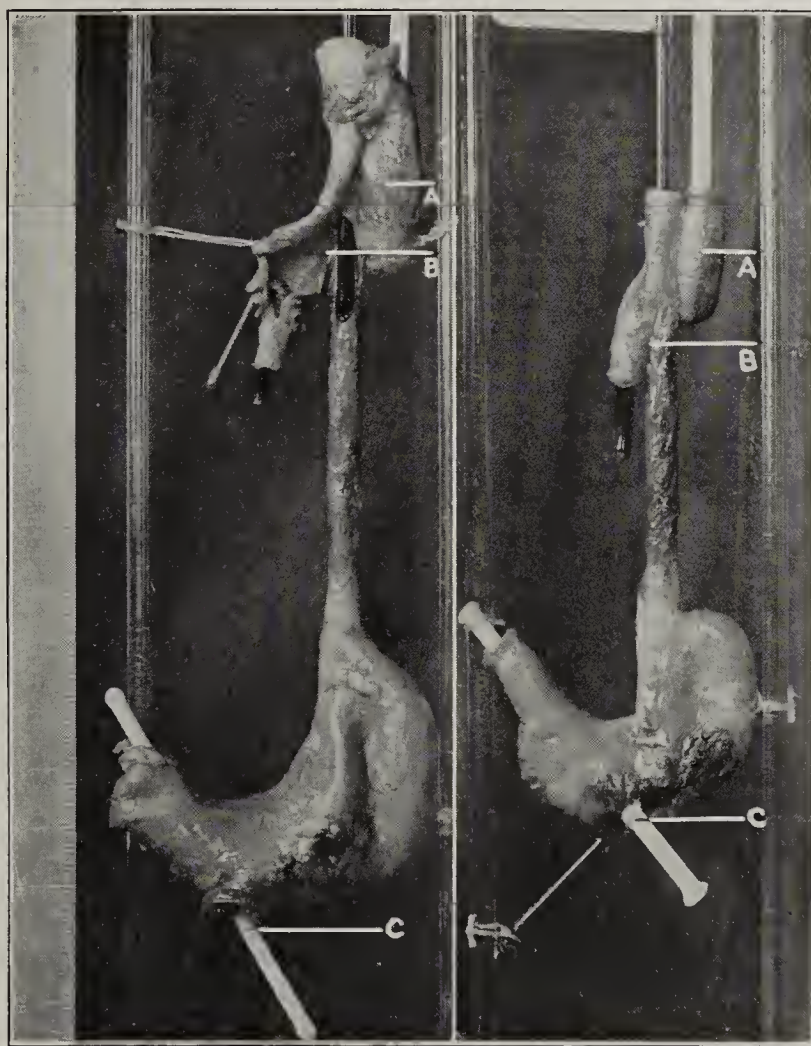


Figure 1

Figure 2

Congenital atresia of the esophagus with esophagotracheal fistula: the similarity of the anomaly in Cases 1 and 2: A, upper segment of esophagus, ending in a blind sac; B, lower segment of esophagus, communicating with the trachea (opened in Figure 1, unopened in Figure 2); C, gastrostomy opening.

tive attacks, attended by choking and cyanosis, accompany the attempts to swallow. The stomach inflates with each inspiration, and the breath sounds are more audible than normal over the abdomen. The passing of a catheter into the esophagus under the fluoroscope, and esophagoscopy, make the diagnosis certain.

From a practical standpoint, the most important consideration in regard to this anomaly is the hopelessness of our present day method of treatment. In a large number of cases (sixteen of the 136 compiled by Plass, and most of the other cases since reported) gastrostomy was done, but has invariably proved futile. Death from starvation is certain to occur if the infants are not operated on; and, if operation is done, they invari-

1. Plass: Johns Hopkins Hosp. Rep. **18**: 259-286, 1919.
2. Cautley, E.: Brit. J. Child. Dis. **14**: 1 (Jan.-March) 1917.
3. Brenneman, J.: Atresia of the Esophagus, Am. J. Dis. Child. **16**: 143 (Sept.) 1918.
4. Huntington, J. L.; Young, J. H., and Foot, N. C.: Boston M. & S. J. **180**: 354 (March 27) 1919.
5. Kastner: Arch. Pediat. **37**: 670, 1920.
6. Shaw, H. L. K.: Congenital Atresia of the Esophagus, with Report of Case, Am. J. Dis. Child. **20**: 507 (Dec.) 1920.
7. Taglicht: Virchows Arch. f. path. Anat. **229**: 322, 1921.
8. Reynolds, R. P., and Morrison, W. W.: Congenital Malformation of the Esophagus, Am. J. Dis. Child. **21**: 339 (April) 1921.
9. Hirsch, I. S.: Congenital Atresia of the Esophagus, J. A. M. A. **76**: 1491 (May 28) 1921.
10. Zausch: Virchows Arch. f. path. Anat. **234**: 94, 1921.
11. Willard, H. G.: Congenital Atresia of Esophagus, J. A. M. A. **78**: 649 (March 4) 1922.
12. Shattock: Proc. Roy. Soc. Med., Sect. Dis. Child. **15**: 2 (Feb.) 1922.
13. Shattock: Tr. Path. Soc. London **41**: 87, 1890.

14. Giffhorn, quoted by Taglicht: Virchows Arch. f. path. Anat. **192**: 112, 1908.



ably die from shock or hemorrhage, suffocation, or bronchopneumonia, the last probably due to regurgitation into the lungs of food introduced into the stomach. Plass states that, theoretically, jejunostomy would appear better; but, even so, it has been suggested that the presence of food would stimulate the stomach secretions, which would be regurgitated into the lungs and set up an inflammation. In one case, jejunostomy was tried and failed.

Richter<sup>15</sup> advocated gastrostomy plus closure of the upper end of the lower esophageal segment. Two patients were operated on; the first died soon after operation; the second lived for twenty hours.

It does not seem that these infants could stand the ordeal of chest surgery, and yet it is only to advances of surgery within the thorax that we can look with any hope for success in the treatment of this anomaly.

1906 Walnut Street.

### OBSERVATIONS ON THE CORRECTION OF DEFORMITIES OF LONG STANDING\*

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There has always been a difference of opinion with regard to the treatment of severe paralysis following anterior poliomyelitis. One group has contended that locomotion with braces and crutches was too difficult



Fig. 1.—Patient on admission, supporting himself on his hands.

and painful to be of any advantage to the patient. It has maintained that such patients are dependent anyway, to the extent that they need assistance to get into their braces; and, such being the case, they might as well be allowed to sit about in peace with no attempt made to prevent the inevitable development of flexion contractions at the hips and knees.

Other surgeons take the view that deformity should be prevented as a matter of routine, and that deformity already existing should be corrected. They insist that a certain amount of independence is of great value, both practical and psychologic, to any patient, and that the possession of the power of independent locomotion, even if it means only the

ability to move from room to room, or to escape from the house in case of fire, is worth the sometimes severe methods necessary to obtain it.

The following case is reported as supporting the latter standpoint, and because there are other instructive features to be noted in the study of a case of such long standing deformity.

In the first place, before undertaking the treatment at all, the patient should be made to understand that there is a grave chance of the reconstructive process being fatal. Such patients are rarely, naturally enough, in good condition. They frequently suffer from chronic bronchitis and are particularly susceptible to



Fig. 2.—Patient on admission: Limits of extension at the hips and knees.

postoperative pneumonia. Their bones are soft and filled with fat. There is danger that enthusiasm may lead to corrective measures so energetic as to interfere with the circulation. In the correction of flexion deformity at the knee, I have seen cases in which the blood supply to the foot might be entirely cut off by extension of the leg beyond a certain angle. The general circulation in the limbs is poor and all the tissues are atrophic, so that the development of pressure sores is likely. The patient must understand what he may anticipate as an end-result. He must realize that the age of miracles is past, and that all he can expect is the ability independently to haul himself about. He must be warned that it is impossible to say in advance what, or how many, operative procedures may be necessary. If he persists in his desire for improvement in the face of these warnings, the surgeon may proceed with a clear conscience.

Under the present somewhat inflexible methods of teaching, the student is frequently led to suppose that a given condition may be remedied by a given operation. Almost any student of orthopedic surgery would say directly that the way to correct flexion contraction at the hip was to perform a Soutter operation, and, if questioned further, would say that the essential feature of the operation consisted in separating muscles from their insertion rather than simply dividing them, and in chiseling off the anterior superior spine. In this case, the classic procedure was almost useless. The contractions at both the hips and the knees were of all the tissues, muscles, joint capsules, tendons and nerves. One cannot expect to correct such deformities at one sitting or by any standard operative procedure.

The astragalectomy and backward displacement of the foot, which was the initial operation, was done simply to eliminate lateral instability of the foot, and thereby provide a firm foundation for weight bearing. The greatest emphasis throughout was laid on deliberation, on doing too little rather than too much at one sitting, with a careful eye always kept on the circulation. One must remember that the blood supply may be cut off either by extreme tension, narrowing the caliber of the vessel, or by violence, tearing the intima and thus setting up thrombus formation.

The most important feature of the case to me is the evidence afforded by the roentgen ray of the knees as to the influence of functional use in the stimulation of calcium deposit in the bones. One sometimes reads of

ability to move from room to room, or to escape from the house in case of fire, is worth the sometimes severe methods necessary to obtain it.

The following case is reported as supporting the latter standpoint, and because there are other instruc-

15. Richter: Surg., Gynec. & Obst. 17: 397 (Oct.) 1913.

\* From the Hospital for Ruptured and Crippled, First Division.



fractures as being a cause of osteoporosis. It would seem more reasonable to infer that the osteoporosis was the result of the disuse of the limb incidental to the fracture. The patient's original roentgenograms revealed the same extreme degree of bone atrophy that may be noted in the patella. Being on the feet intermittently in plaster and braces for four months apparently caused the deposit of calcium in the femur and tibia, the weight bearing bones, but had no similar effect on the patella, which was subject to no strain, even from movement of the knee.

While at operation no change was noted in the cartilage covering the astragalus and tibia, the roentgenogram of the knees would strongly suggest almost complete disappearance of the joint cartilage. Whether this was simply a part of the general atrophy or was consequent on the trauma and strain occurring during the reduction of the flexion deformity, one cannot say. It is unfortunate, as it seems unlikely that the patient would develop more motion in the knees than he has at present—10 degrees. This will, of course, interfere with his comfort when sitting.

From a study of this case, it appears, therefore, that: 1. Deformities of indefinite duration may be successfully corrected. 2. Some patients, at least, seem to consider independent locomotion worth the risk of repeated operations. 3. No single operation may be exclusively relied on, and a combination of gradual mechanical and operative correction is required. 4. Functional use has a direct influence on calcium deposit in bone.

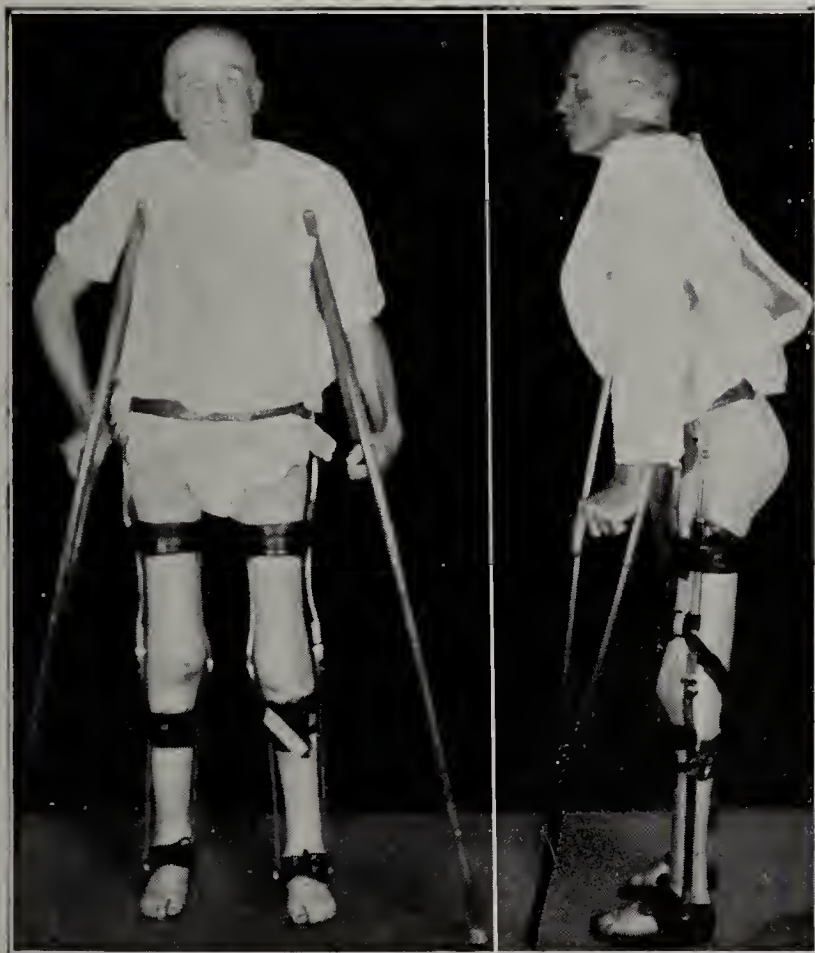


Fig. 3.—Patient at time of discharge.

#### REPORT OF CASE

*History.*—F. B., man, aged 52, single, with a negative past and family history, suffered from paralysis of both legs. He had had an attack of anterior poliomyelitis thirty-eight years previously, which resulted in complete paralysis of both legs. He has had no treatment, but had been examined recently in the clinic of the Vermont State Board of Health. Except for crawling on his hands and knees, he had since

the onset been confined to a wheel chair, and during this period there has been a gradual development of flexion contractions at the hips and knees.

*Physical Examination.*—The patient was in good condition. The body and arms were well developed, and he could support himself on his arms, but could not walk. On the right side, there was complete paralysis of every muscle in the lower extremity; a flexion contraction of the hip at an angle of 130 degrees, and a flexion contraction of the leg on the



Fig. 4.—A, almost complete disappearance of the joint cartilage; B, extreme osteoporosis of the patella.

thigh at an angle of 95 degrees. The foot was not deformed. On the left side, the tensor fasciae femoris was good. There was a trace of power in the internal and external hamstrings; otherwise, there was complete paralysis. There was a flexion contraction at the hip at an angle of 100 degrees; at the knee of 90 degrees. The foot dangled but was not deformed.

*Operations and Treatment.*—Dec. 21, 1921: Operation of astragalectomy and backward displacement of the foot on the right side was performed. The right angular contraction at the knee could not be overcome by the exercise of any ordinary force, the contraction appearing to be entirely general, of the skin, muscles and capsule. Plaster of Paris was applied, holding the foot and knee at a right angle.

December 28: The plaster was cut behind the knee and correction of the deformity by wedging begun.

Jan. 18, 1922: Right Soutter operation was performed. Tension on the femoral vessels and anterior crural nerve prevented extension at the hip beyond 160 degrees. A long plaster spica was applied, holding the thigh at 100 degrees and the knee at 110 degrees of extension on the leg.

February 8: Left astragalectomy was performed, with backward displacement of the foot. A plaster was applied to the limb in a similar manner. The contraction at the right hip was completely reduced by stretching. The right knee was brought to 135 degrees of extension.

March 8: Left Soutter operation was performed, attended by similar difficulty from the contraction of the vessels and nerves, with extension limited at 165 degrees. The right knee was brought to 165 degrees extension, the left knee to 110 degrees, and Billroth splints were incorporated in the plaster.

March 27: Stretching of the abduction contractions at the hips was carried out. The right hip was brought into line with the body and the knee into full extension. The left hip was brought to 25 degrees abduction, full extension, and the knee to 135 degrees extension.

April 27: Under gas anesthesia, the abduction contractions were entirely reduced. The left knee was brought to 170 degrees extension.



May 2: The patient was out of bed, standing on the feet.

May 23: The first steps were taken with assistance.

June 1: The patient was on his feet, attempting to walk with crutches.

July 6: The plaster was bivalved and the patient measured for braces.

July 13: Contraction of the left knee was entirely overcome under gas.

*Outcome.*—October 1: Since about August 1, the patient has had his braces applied and has been up every day, first, walking in a walking machine, but lately using crutches. His knees are almost entirely stiff. He states that he feels his improvement to be continuous and entirely dependent on his general strength. He feels that he can improve more rapidly at home and is therefore to be discharged at his own request. His condition is satisfactory. He himself is satisfied with the result. Roentgenograms of the hips reveal extreme bone atrophy of the femora and pelvis. There is practically no space between the head of the femur and the acetabulum, which would seem to indicate practically complete absence of cartilage. Roentgenograms of the knees show the bones in contact, apparently, a complete absence or destruction of cartilage. The appearance is practically that of an ankylosis following operative fusion of the knees. The decalcification of the bones is not so evident as in the roentgenograms of the hips.

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## FATAL INFECTIONS FOLLOWING TONSILLECTOMY\*

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AND

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Bacteria invade the tonsillectomy wound, and under certain conditions pass the surface barrier, producing a local or general infection. There are several reports in the literature describing these pictures. In Baum's<sup>1</sup> series of tonsillectomies, three patients developed abscesses in the peritonsillar tissues, and one developed suppurative adenitis of the entire cervical chain. These patients were all operated on under local anesthesia, and Baum suggests that the infection was carried into the tissues by the deep injection of the anesthetic substance. Among the general infections, Dean<sup>2</sup> reported three fatal cases. The temperature ranged from 101 to 103 F. and the glands of the neck were enlarged. On the third day there was difficulty in breathing and swallowing, followed by vomiting, delirium, visual disturbances, pus and blood in the sputum, scanty urine, convulsions and death. One of the patients had a sinus phlebitis, with exophthalmia and panophthalmitis. Another had a gangrenous process in the muscles of the neck with no localization or pus formation. Kerley<sup>3</sup> described a child of 2 years who developed discharging ears after tonsillectomy. Grayish white ulcerated areas appeared in the mouth, and the skin developed erythematous, hemorrhagic and pemphigoid lesions. The temperature reached 104 F., and death occurred in one month. In 14,960 tonsillectomies performed at the Royal Infirmary at Edinburgh from 1907 to 1920, Martin<sup>4</sup> reported six postoperative fatal-

ities, four of which were due to sepsis. Bronchopneumonia developed in three.

Two cases of generalized infection following tonsillectomy are described; one a septicemia, the other a meningitis, both due to strains of pneumococcus.

### REPORT OF CASES

*CASE 1.—History.*—D. M. R., a girl, aged 2 years and 4 months, had a sore throat lasting five days. In less than three weeks her tonsils and adenoids were removed under general anesthesia. She was apparently well at the time of operation. The mother was told that the tonsils were "full of pus" and the adenoids were "very large." She stated that the milk administered a few hours after the operation was sour to the taste. The child seemed befogged, and when she was removed to her home she asked where she was. That evening she was very hot and had several convulsive seizures. She was delirious and stuporous thereafter, and the convulsions continued for a few days. The temperature remained at about 103 F., and it was said that she refused food because of pain on swallowing. There was pain in the ear, but no discharge. The operation was performed elsewhere.

*Physical Examination.*—The child was first seen four days after the operation. She was lying in a semistupor, moaning, with head thrown back and mouth open. When aroused, she answered questions rationally. A foul odor issued from her mouth. The respirations were rapid; the cheeks were markedly flushed; the nose was pinched; there was deep scleral injection; the lips were glazed and red, as is often seen in septic processes. Moderate enlargement of the cervical glands was visible. Besides, there was general adenopathy. Signs of meningitis, such as the Kernig and Brudzinski phenomena, were absent, and the retraction was easily corrected. The abdomen was not rigid or distended. There were no abnormal findings in the heart or lungs.

The skin of the lower abdomen, thighs and legs was incompletely covered by a dull red, slightly raised macular eruption. There were normal areas of skin between the lesions. The rash appeared the day following the operation, but medicine had been administered before its onset. On the backs of the hands, particularly about the thumb and forefinger, were lesions of lichen urticatus, which antedated the operation. The throat was covered by a whitish exudate, which resembled the usual picture after tonsillectomy. When this material was swabbed, it proved to be caseous, and it crumbled on the slide. Direct smears contained a variety of cocci and an occasional bacillary form. There were no diphtheria bacilli. Cultures yielded the types present in the smear. There were no fusiform bacilli or spirilla in the direct smear. These findings were consistent with several subsequent examinations. Palpation of the pharynx because of the mouth breathing, enlarged cervical glands and opisthotonos revealed no masses. There was no retraction of the chest indicating laryngeal obstruction.

The clinical picture was that of septicemia from a throat infection. There was another possibility; namely, a blood dyscrasia, such as an acute lymphatic leukemia or the rare form of chloroma, which manifests itself by an ulcerative angina with an exudate like that present in this patient. The blood findings excluded these possibilities. There were 4,400,000 red cells, 75 per cent. hemoglobin, 11,500 white cells, with 76 per cent. polymorphonuclears, 12 per cent. lymphocytes, 8 per cent. large mononuclears and 4 per cent. transitionals. There were no abnormal cells. The urine contained a faint trace of albumin. A blood culture three days before death contained pneumococcus, Type II.

*Course.*—The child lived four days longer, growing progressively worse. The exudate extended so that it covered the uvula, palate, buccal mucosa, tongue and alveolar processes. A small area of harsh breathing developed in the right axilla, but there were no other signs of pulmonary involvement. The abdomen became markedly distended, but there was no rigidity, and the distention was relieved by enemas and high rectal tubes. Difficulty in swallowing and breathing became more marked. The pulse became weak,

\* From the Sarah Morris Memorial Hospital for Children, of the Michael Reese Hospital.

1. Baum, H. L.: *Ann. Otol. Rhinol. & Laryngol.* **28**: 37 (March) 1919.

2. Dean: *Laryngoscope* **20**: 738, 1910.

3. Kerley, J. H.: *Arch. Pediat.* **39**: 462 (July) 1922.

4. Martin, G. E.: *J. Laryngol. & Otol.* **37**: 80 (Feb.) 1922.



thready and imperceptible, but was improved at times by injections of camphorated oil and a digitalis preparation. Fluids were supplied by mouth and by rectum. The father's whole blood was injected twice intramuscularly in 50 and 25 c.c. amounts. A single dose of 20,000 units of diphtheria antitoxin was administered because of the possibility of a diphtheritic infection, despite negative cultures, and because of the possible nonspecific protein effect on the process. There were no signs that the course was retarded by any of these measures. Parental suggestion for intubation or tracheotomy was vetoed because the retraction was insufficient to warrant such procedures, and because of the practical certainty of fatal pneumonic complications in the face of the severe local infection and probable tracheal involvement. Postmortem findings proved the wisdom of noninterference.

**Necropsy Findings.**—Necropsy was performed by Dr. O. T. Schultz with these findings: About the epiglottis and the laryngeal opening there was present the same grayish opaque pultaceous material noted in the buccal cavity. The lateral margins of the epiglottis were superficially ulcerated. The inner surface of the larynx was covered by a layer of grayish exudate. As in the mouth, this formed a thin, crumbly, granular layer which had none of the characteristics of a diphtheritic membrane. The mucosa of the trachea was congested; in its upper part were areas that were duller and grayer than the surrounding mucosa. The granular layer present elsewhere extended down into the esophagus, being heavier in the upper part of the esophagus than in the larynx. In its middle third, the esophageal mucosa was pale and dull; near the lower end of the esophagus, the mucosa became normal in appearance.

**Microscopic Examination.**—

**Larynx:** In areas of considerable extent, the surface epithelium was absent; the exposed stroma showed little reaction. Where epithelium was present, it was covered by a thin layer composed of granular material, in which leukocytes were embedded. In the trachea below, the epithelium was moderately infiltrated with leukocytes. **Esophagus:** The inner surface was covered by a layer of material whose thickness equaled about one-

fourth the diameter of a low power field. In some places, this layer was granular; in other places, it contained a coarse fibrin meshwork, and, in still other places, it was made up of leukocytes which were faintly stained and shadowy. Immediately beneath this layer was a narrow zone of dense leukocytic accumulation. This lay on the submucosa, which was edematous and diffusely infiltrated by polymorphonuclear and endothelial leukocytes. No epithelium was seen, and the entire thickness of the mucosa had disappeared or undergone necrosis (Fig. 1). The extent of the superficial necrosis was striking; in sections from the lower part of the middle third of the esophagus, the change was almost as intense as in the upper third.

**Bacteriology:** In a postmortem culture from the pharynx, pneumococcus, staphylococcus and a few colonies of hemolytic streptococcus were present. The pneumococcus predominated; the number of hemolytic streptococcus colonies was not such as one usually obtains from the septic forms of pharyngitis. The heart's blood yielded pneumococcus Type II.

There was an area of bronchopneumonia in the upper portion of the right lung, corresponding to the location of

physical signs before death, in which harsh breathing was noted. The cortex of the kidney was cloudy and paler than the medulla. The convoluted tubular epithelium was swollen, and the small veins were engorged.

**CASE 2.—History.**—H. E., a boy, aged 7 years, began to manifest choreiform movements two weeks before tonsillectomy. The operation was performed at another hospital during the illness. He was discharged within twenty-four hours from the hospital in good condition. The next day his temperature rose to 105 F., and he was delirious. The temperature ran a septic course for a week, followed by two days' remission. This was followed by a chill lasting about an hour and subsequent rise in temperature. Daily thereafter, there occurred chills, fever and vomiting. A hacking cough was also present.

**Examination.**—On admission to the hospital, one month after the onset of chorea and two weeks after tonsillectomy, the child appeared acutely ill. The temperature was 102.4 F.; pulse, 160; respiration, 36, with considerable dyspnea. The pupils were unequal, and there was conjunctivitis in the left eye. Both ear drums were pearly gray. There was marked pulsation on the right side of the neck and slight pulsation on the left side. The neck was not rigid. The lungs were

negative. There were many abnormal cardiac findings. The apex beat was diffuse. The left border extended to the anterior axillary line; the right border to the midsternal line. There was a double murmur at the apex and a diastolic murmur over the aortic area. Capillary pulsation was present. The liver was palpable, but not the spleen. The patellar reflexes were exaggerated. The Brudzinski and Babinski signs were positive; the Kernig was not definite. There were 3,600,000 red cells and 38,000 white cells, of which 88 per cent. were polymorphonuclears, 7 per cent. small mononuclears, 2 per cent. large mononuclears and 3 per cent. transitionals. The hemoglobin was 70 per cent. The urine was negative. Fluoroscopic examination revealed that the heart was wide at the apex and base, with no evidence of lung involvement.

Spinal puncture, the next day, yielded 30 c.c. of slightly turbid fluid under increased pressure. There were 640 cells, of which 64 per cent. were mononuclears and 36 per cent. polymorphonuclears. The globulin tests were faintly positive. Direct smears and cultures yielded no organisms. The Wassermann and Lange tests were negative. Twenty-five c.c. of antimeningococcus serum was administered intraspinally.

**Course.**—Following the puncture, the temperature rose to 107 F., and the pulse to 180; and morphin was required to quiet the patient. The following day, the temperature varied from 100.6 to 105 F. The child was semicomatose and manifested a subconjunctival hemorrhage on the left side. There was tenderness of the frontal and maxillary sinuses and throbbing of the right side of the neck. There were distinct signs of meningeal irritation. There was marked tenderness over the right carotid artery and jugular vein, but none on the left. Examination of the eyes showed edema of the left conjunctiva, haziness and opacity of the left cornea and old adhesions of the posterior part of the iris. The fundus was not visible. Apparently, this represented an old iritis and keratitis. There was retinal hyperemia on the right side.

A second spinal puncture yielded 30 c.c. of turbid fluid under increased pressure. A pellicle formed quickly. All

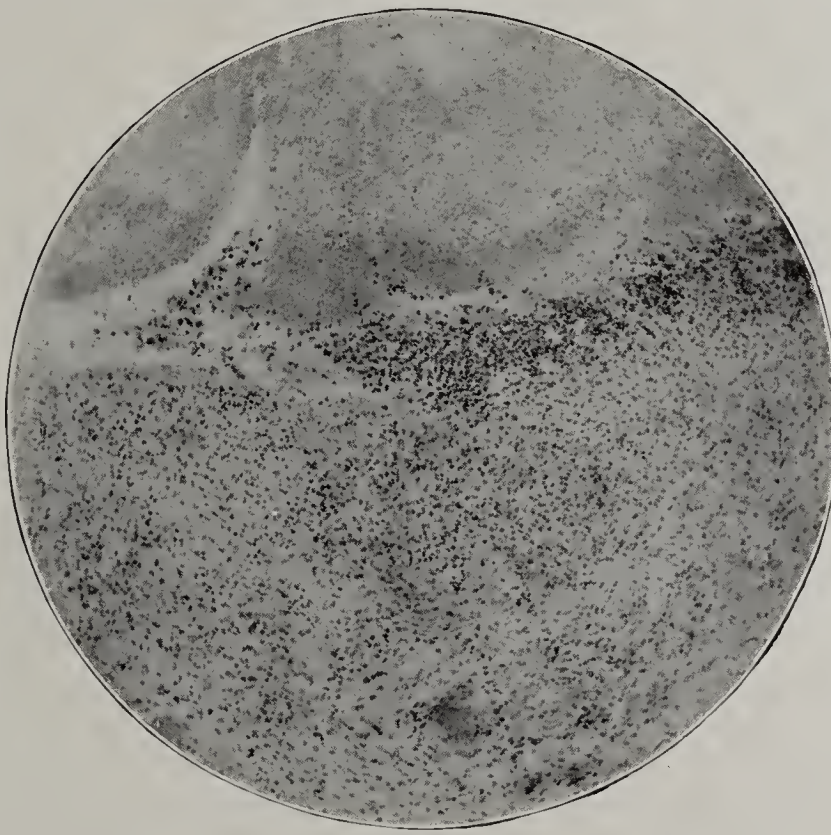


Fig. 1.—Section through esophagus, showing marked superficial necrosis. No epithelium is seen. Beneath the necrotic layer is a narrow zone of dense leukocytic accumulation. Beneath this layer is the edematous submucosa infiltrated by polymorphonuclear and endothelial leukocytes;  $\times 110$ .



the globulin tests were positive. There were 1,067 cells, of which 75 per cent. were polymorphonuclear and 25 per cent. lymphocyte and endothelial. A direct smear contained gram-positive, extracellular diplococci. The culture of the fluid remained sterile. The blood culture of the same date yielded a luxuriant growth of pneumococci, Type I. The temperature was 104.8 F.; pulse, 64; respiration, 50, and irregular.

Another spinal puncture on this date yielded 30 c.c. of markedly turbid fluid under increased pressure. The globulin tests were all positive. There were 2,970 cells, of which 93 per cent. were polymorphonuclears. Direct smears from uncentrifugalized fluid contained large numbers of gram-positive diplococci, with very few cells (Fig. 2). Twenty c.c. of antimeningococcus serum and 9 c.c. of a 0.5 per cent. ethylhydrocuprein solution were administered. The child died shortly afterward.

*Necropsy Findings.*—Necropsy by Dr. O. T. Schultz revealed that both ventricles of the heart were increased in size. The aortic valve was ulcerated, and attached to its median segment was a grayish, soft vegetative mass, 1.5 by 1 cm. The anterior half of the left cerebral hemisphere was coated with a thin layer of opaque, yellowish exudate beneath the pia mater. The base of the brain was free from macroscopic exudate, although it contained an increased amount of cloudy fluid under the tentorium. The left middle ear contained a drop of thick, yellow pus. The ossicles appeared normal. The right middle ear was negative. There was unresolved pneumonia in the lower lobe of the left lung. Blood culture yielded pneumococcus, Type I.

#### COMMENT

The findings in Kerley's case closely resemble those in our first case. In his case, the gums were swollen and there were grayish white ulcerated areas on the cheeks, tongue and lip, attended by fetid breath. This was not described in other reports.

The occurrence of a rash in our first case is interesting in the light of other reports. Dean quotes a case of LePlay in which infection followed tonsillectomy, accompanied by a scarlatiniform rash. He also mentions two cases of Fisher and thirty-four cases of Vingrave, in seven years, of surgical scarlet fever following tonsillectomy. Kerley's case manifested a variegated eruption, which may have been due to medication. Our case was definitely not the typical rash of scarlet fever. It was blotchy, raised and dull red and not in the usual location for a scarlet fever rash. A consideration of these skin eruptions merely adds further material to the data concerning skin eruptions associated with angina and bacteremia.

It is difficult to determine whether the chronic endocarditis in our second case had a direct relation to the septicemia, especially if Morris's<sup>5</sup> case is considered, in which there was a *Streptococcus viridans* septicemia and a chronic endocarditis, and no accident occurred after tonsillectomy. It appears plausible that an acute endocarditis may be precipitated from a chronic endocarditis by tonsillectomy.

The direct smear of the cerebrospinal fluid in our second case presents a picture often present in

pneumococcus meningitis, as pointed out elsewhere,<sup>6</sup> namely, many pneumococci and few cells.

The bacteriology of the nasopharynx in children sheds some light on the occurrence of pneumococcal infection in our cases. About 50 per cent. of normal adult persons harbor the pneumococcus in the throat, the majority of which belong to Types III and IV. In 103 extirpated adenoids from patients from 5 to 16 years old, during April, May and June, 1920, Pilot and Pearlman<sup>7</sup> found 71.4 per cent. containing pneumococci, 85 per cent. of which belonged to Type IV, 13 per cent. to Type III and 2 per cent. to Type II. Furthermore, they found that the pneumococci rarely predominated in cultures from nasopharyngeal swabs. They were much more numerous in the crypts of the adenoids. In four cases they were recovered in pure culture. It appears that the pneumococcus is more frequently found in the adenoid than in the tonsil. In our cases, which occurred in the latter part of May, 1922, the necrotic process and septicemia were due to the Type II organism, and the meningitis and septicemia to Type I.

The occurrence of fatal infections following tonsillectomy emphasizes the necessity for caution. In the absence of acute local inflammation, the general immunity of the individual and the local resistance of the tissues to infection are usually sufficient to circumscribe the usual activity of the bacteria which invade the tonsillectomy wound. Otherwise, the infection may spread to the cervical lymph glands or tissues of the neck, producing the condition described by Dean. If the balance of forces is still more favorable to the organism, a generalized infection may supervene. These possibilities are more easily encompassed if local inflammation is present. In such cases the organisms are

of greater virulence from the beginning, as is evidenced by the inflammatory reaction which they have produced. Therefore, it is the part of safety to wait until all local inflammation has subsided before creating any form of trauma to the region.

Despite this conservative view, many operators report the removal of the acutely inflamed tonsil without mishap. Buzard<sup>8</sup> removed the tonsils in a case of follicular tonsillitis. He reports that the temperature dropped from 104 to normal within three hours and that the only pain was that due to the operation wound. In twelve other cases he was likewise successful. Morris removed the tonsils without accident in twelve cases presenting joint pains. He advises this treatment for acute tonsillitis. Endocarditis did not develop in any of his cases, even though in one case *Streptococcus viridans* was present in the blood and there was an endocarditis previously.

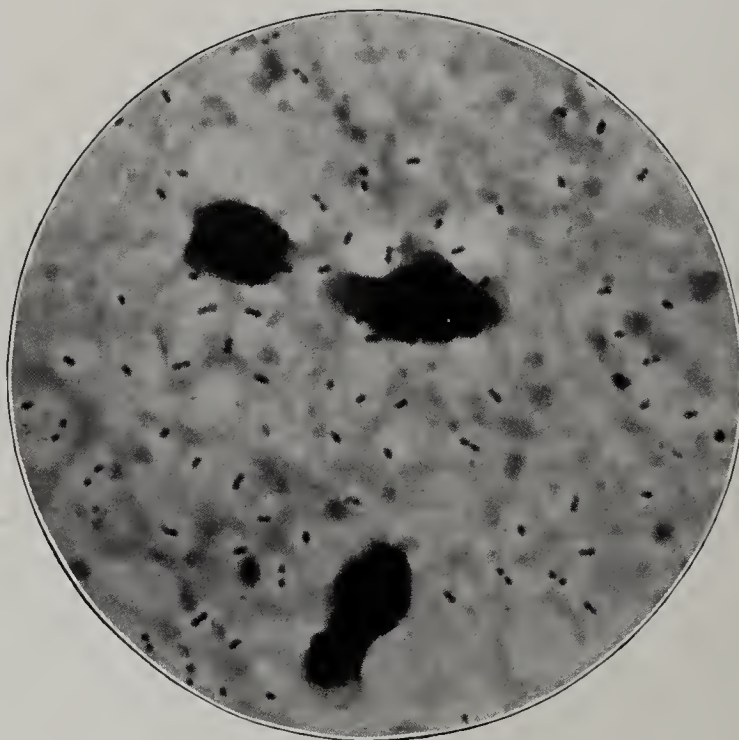


Fig. 2.—Direct smear of cerebrospinal fluid, showing large numbers of diplococci and few cells;  $\times 1,200$ .

6. Levinson, Abraham: Cerebro-Spinal Fluid in Health and in Disease, St. Louis, C. V. Mosby Company, 1919, p. 200.

7. Pilot, Isadore, and Pearlman, S. J.: J. Infect. Dis. **29**: 47 (July) 1921.

8. Buzard, I. S.: J. Iowa M. Soc. **7**: 305 (Aug.) 1917.

5. Morris, R. S.: J. Lab. & Clin. Med. **2**: 168 (Dec.) 1916.



Higginbotham<sup>9</sup> urges the removal of acutely inflamed tonsils, comparing the condition to acute appendicitis. He reports no complications in 500 cases. Holinger<sup>10</sup> has removed tonsils in all cases of peritonsillar abscess for seven years without mishap. According to these reports, complicating infections following tonsillectomy are not to be attributed to an active process in the tonsil or the pharyngeal tissue. The responsibility for the infection, therefore, becomes a question of balance of power between host and organism.

The course of our two cases leads us to favor delaying tonsillectomy in the presence of infection until all signs of acute inflammation have subsided.

25 East Washington Street—30 North Michigan Avenue.

## SARCOMA (?) OF THIGH, WITH SECONDARY SARCOMA (?) OF INGUINAL REGION, LIVER AND LUNGS

RECOVERY AFTER INTENSIVE DEEP ROENTGEN IRRADIATION \*

J. HENRY SCHROEDER, M.D.

CINCINNATI

The purpose of this report is to place on record what, so far as I have been able to learn, is the first successful attempt to treat by intensive deep roentgen irradiation a widely distributed sarcomatous invasion of deep tissues. I am able to demonstrate that it is technically possible and clinically permissible to administer to a

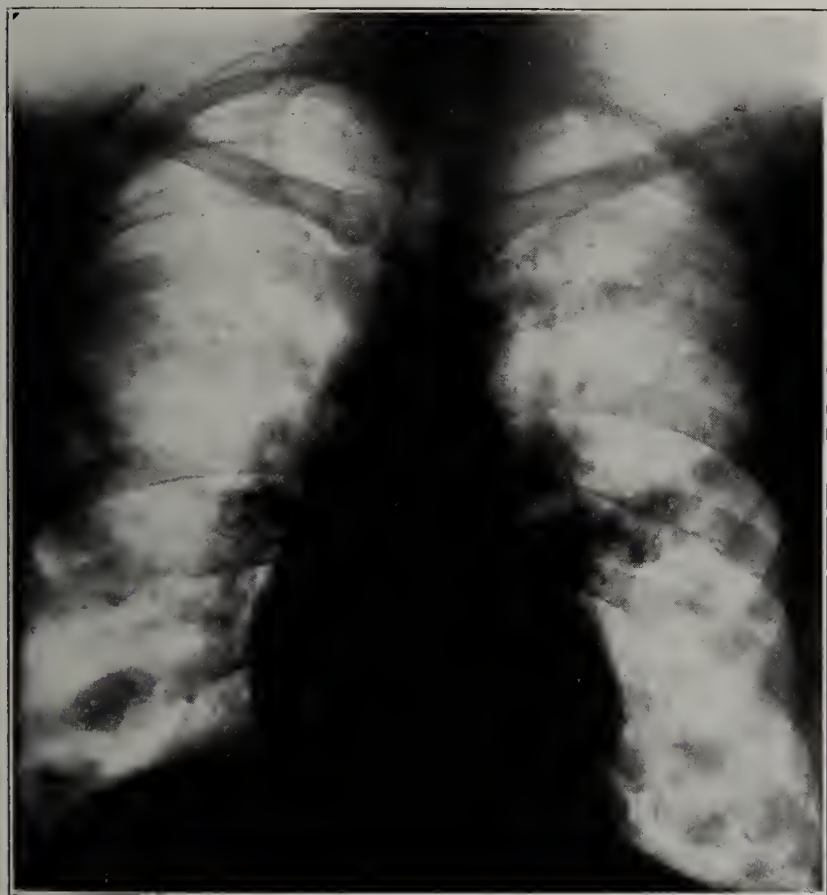


Fig. 1.—Lungs before roentgen irradiation, January, 1922, showing the characteristic shadows of secondary sarcoma throughout both lungs.

patient over wide and separate areas of the body, within a limited period of treatment, the "sarcoma dose" of roentgen irradiation in the depth of each such

area, with the result of the apparent disappearance of the neoplasm from all the involved areas.

In order to establish the diagnosis, I give the complete history and clinical record. The excision of a specimen for histologic examination was, of course, not permissible.



Fig. 2.—Thigh before roentgen irradiation, with outline of sarcoma indicated by dotted line, because of faint print.

### REPORT OF CASE

*History.*—H. M., a man, aged 50, was injured about three years ago by having his right thigh crushed. The present roentgenograms do not show any evidence that the bony structures of the thigh and knee were injured. He made a temporary recovery from his injury, but after about six months began to decline in health, with marked loss in weight. Digestive disorder was an early complaint. The injured leg became very painful, and the lower third of the thigh, the site of the previous injury, gradually enlarged. His physician made the diagnosis of sarcoma of the thigh and advised prompt amputation. The patient came to the hospital, and Dr. Samuel Brown, roentgenologist at the hospital, after the roentgenographic examination of the thigh, made the usual roentgen-ray examination of the chest, which revealed extensive and typical secondary sarcoma of both lungs (Fig. 1), and the results of the examination were so reported in the hospital records.

This brought to an end all surgical contemplations. When I was asked to see the patient at that time (January, 1922) to determine the practicability of intensive deep roentgen irradiation, I found the lower third of the thigh greatly enlarged, very painful and tender, and hard as a rock. The tumor mass could be outlined by palpation, and appeared as an easily definable, circumscribed neoplasm in the soft tissues of the thigh. It extended along the posterior and mesial tissues of the thigh to below the posterior aspect of the knee joint, completely disabling the patient. The inguinal region presented large and tender masses. An examination of the lungs disclosed impaired resonance over many areas of both lungs, and some moist râles. At this time nothing physically abnormal could be detected in the abdomen, although the

9. Higginbotham, I. L.: J. Kansas M. Soc. **16**: 42 (Feb.) 1916.

10. Holinger, Jacques: Ann. Oto., Rhinol. & Laryngol. **30**: 195 (March) 1921.

\* Presented, with the patient, before the Academy of Medicine of Cincinnati, Oct. 23, 1922.



patient's complaint of indigestion suggested abdominal involvement. The liver was not enlarged, but became enlarged and painful later, as will be noted.

A roentgen-ray examination of the thigh revealed the outline of the tumor in the soft tissues of the thigh; the bony structures appeared normal (Fig. 2).

There was no history of syphilis. The Wassermann and Hecht-Gradwohl tests were reported negative. The blood count revealed: red cells, 5,135,000; white cells, 6,225; polymorphonuclears, 56 per cent.; eosinophils, 7 per cent.; large lymphocytes, 3 per cent.; small lymphocytes, 33 per cent.; large mononuclears, 1 per cent.

The *clinical* diagnosis appears to me as established through the evidently malignant type of the disease; through its history and course; through the character of the local lesion; through the occurrence of characteristic metastases, and particularly through the roentgenograms showing the typical shadows of deposits of secondary sarcoma of the lungs.

To this may be added, as if by way of confirmation, its response to deep roentgen irradiation, and the fact that the clinical diagnosis of sarcoma was repeatedly made by competent surgeons who examined the patient and indicated the case to me as hopeless.

*Deep Roentgen Irradiation.*—The ultrahard rays at 220,000 volts, and for the lungs at 200,000 volts, were used. The lungs received 70 per cent., and the other areas 80 per cent. of the surface erythema dose, in their depth. Four irradiation periods were required. During the first period, from January 21 to February 1, the thigh, inguinal region and both lungs were irradiated. Each region received the full dose in one sitting.



Fig. 3.—Lungs six weeks after the administration of the first roentgen irradiation dose.

The second period was from March 22 to March 27, during which the thigh and lungs received again the sarcoma dose.

The liver up to this time was not apparently enlarged, although the continued indigestion pointed almost certainly to an involvement of abdominal organs.

At the beginning of the third period of irradiation, June 29, the liver was found to be markedly enlarged and very tender, and at this time the liver and the thigh were each given the sarcoma dose.

During the fourth period, August 31, the thigh received its last irradiation.

*Results.*—The extensive irradiation was well tolerated. There were at no time alarming blood changes after the various doses.<sup>1</sup> After the first period of irradiation, the patient gained 23½ pounds (10.7 kg.) in weight within six



Fig. 4.—Lungs six weeks after the second roentgen irradiation dose: All metastases have entirely disappeared.

weeks. The lungs were examined ten days after the first irradiation, and Dr. Brown reported that the roentgenogram revealed the deposits in the lungs to be less dense and circumscribed, indicating partial absorption. The lungs became entirely clear after the second dose, and on June 26 Dr. Brown reported, after a roentgen-ray examination, that all metastases had entirely disappeared (Fig. 4). A final examination, October 23, reveals that the lungs have remained clear.

The masses in the inguinal region disappeared after one irradiation.

The liver became of normal size after the application of one irradiation dose, and all tenderness disappeared. The patient called attention to the fact that he had never experienced such an improvement in his condition after any previous irradiation; all symptoms of indigestion vanished rapidly.

The tumor of the thigh proved the most refractory. Only after the fourth dose could no remaining infiltration be detected.

At the present time the patient is free from any evidence of the disease. His general condition is excellent. He is free from any complaint; only the muscles of the leg have not yet regained their former strength.

#### COMMENT

The attitude toward deep roentgen irradiation as a therapeutic agency in widely metastasized malignant disease has heretofore been one of discouragement. It has been demonstrated in this case that widely disseminated sarcoma is in itself not a bar to successful treatment with these irradiations. It may be safely done, provided the dosage is absolutely controlled and the patient has good resistance.

The patient will, of course, be carefully watched in the future. The outstanding feature at present is this,

1. The variations in the blood counts have been referred to by Schroeder, J. H.: Intensive Deep Roentgen Irradiation, J. A. M. A. 79: 1240 (Oct. 7) 1922.



that nine months ago this patient was lying in the hospital, hopeless and helpless; today he is looking toward a renewed useful existence.

11½ East Eighth Street.

## MULTIPLE CALCULI IN STENSON'S DUCT

REPORT OF UNUSUAL CASE

ALFRED H. NOEHREN, M.D.  
BUFFALO

In a careful search of the literature, I was unable to find the report of a case of salivary calculi exceeding the one herewith reported in the number of calculi found in one duct.

### REPORT OF CASE

*History.*—F. S., aged 20, a student, consulted me in June, 1922, complaining of a swelling in his left cheek. He had noticed this swelling for the past eight years. It had varied from time to time, and during the last four months had been larger than ever before. There had been no pain, and the patient had not been troubled with pyorrhea, poor teeth, formation of tartar or bad odor of the breath. There had always been a free flow of saliva, and he had never passed any stones. He had consulted a physician in his college town, who diagnosed the condition as multiple salivary calculi.

*Examination.*—The patient was a well-developed young man, apparently in perfect health. His teeth were in good condition and, aside from the swelling, there was nothing abnormal in the appearance of his mouth. There was a moderate swelling of his left cheek, having the appearance externally of an alveolar abscess of the upper jaw. Palpation revealed the swelling to be irregular in shape and to consist of a number of hard bodies. It was felt near the anterior border of the masseter muscle at the level of Stenson's duct. Within the mouth, three distinct bodies could be distinguished, which seemed to be nearer the mucous membrane than the skin. It was impossible to find or probe the opening of Stenson's duct. The parotid gland was not enlarged. A diagnosis was made of multiple calculi in the buccal portion of Stenson's duct, probably three in number.

*Operation.*—This was performed under local anesthesia (1 per cent. procain) at the Deaconess Hospital, June 20. I incised the mucous membrane over the most prominent stone. With considerable difficulty, this was made to present at the wound and was grasped with forceps by an assistant, after which I was able to dissect it out. It was very firmly embedded and could not be pressed out without considerable dissection. This process was repeated with each of the other stones, always, however, using the same incision. To our great surprise, instead of three, there were fourteen stones, as seen in the accompanying illustration. They were hard and covered with tightly adherent tissue. The wound was three-fourths inch (1.9 cm.) long, and had to be considerably stretched. A gauze pad was kept inside the cheek for twenty-four hours.

*Outcome.*—The patient made a good recovery. September 24, he wrote that the wound was well healed and the swelling practically gone. There was no pain, and no more stones could be felt.

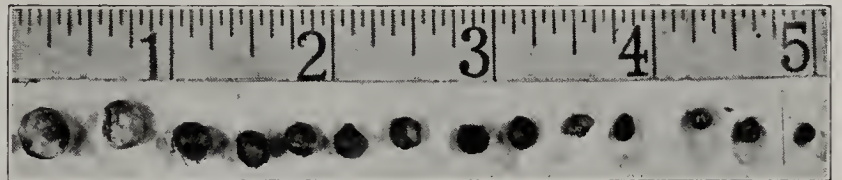
### COMMENT

Salivary calculi occur frequently enough to be of considerable clinical interest. Stenson's duct passes from the anterior border of the parotid gland transversely across the cheek on a line passing from the lower border of the concha to a point midway between the free margin of the upper lip and the ala of the nose, about a finger's breadth below the zygoma. Here, it lies on the masseter muscle directly under the skin and can be felt like a whip-cord, especially if the masseters

are made to contract. It lies between the transverse facial artery above and the buccal branch of the facial nerve below. At the anterior border of the masseter, it turns abruptly inward, making almost a right angle. It passes through a mass of fat and the buccinator muscle to the mucous membrane, ending in a papilla opposite the crown of the upper second molar tooth. It is thus divided into a masseteric portion and a buccal portion, and, although the former is usually described as larger than the latter, in some recent dissections made on the cadaver, we found them of about equal length, i. e., about 1 inch (2.5 cm.) each, totaling slightly less than 2 inches (5 cm.). The diameter of the duct is about one-eighth inch (3 mm.), being narrowest at its termination.

In the case here reported, the calculi were in the buccal portion, and hence could be removed through the mouth. When calculi are in the masseteric portion or in the parotid gland, they must, as a rule, be removed through the skin, in which case the wound is less likely to heal and may result in a fistula.

The etiology of salivary calculi is not very clear. They are composed principally of the inorganic salts found in saliva, especially calcium carbonate and calcium phosphate. As in the case of tartar on the teeth, these salts are deposited by the action of bacteria. Furthermore, clumps of bacteria or particles of tartar may form the starting point of calculi, around which the salts are deposited.



Stones removed from Stenson's duct.

In this case, the good condition of the mouth and teeth would seem to reduce the possibility of a bacterial cause to a minimum. So we must look for another cause. The total amount of saliva secreted in twenty-four hours is 1,500 c.c. Allowing one half of this, or 750 c.c., for the parotid glands, the gland on one side would secrete about 375 c.c. in twenty-four hours; or, roughly, about 15 c.c. of saliva passes through each Stenson duct every hour. This is quite a stream, and any interference with it would be liable to cause trouble. As this patient is a student, he spends much time at his desk reading and writing. The natural student's attitude is to rest the head on the left hand. In this position, the hand naturally presses on that part of the cheek which contains Stenson's duct, especially where the duct turns around the anterior border of the masseter muscle and dips down to the mucous membrane. This causes a certain amount of stasis in the salivary flow and traumatizes the duct itself, thus making more likely a deposit of the salts of the saliva forming the nuclei of calculi. Furthermore, the pressure would tend to embed them, as in this case. To prevent a recurrence, therefore, the patient should be instructed to support his head in some other way.

1196 Main Street.

*Choice of Physicians.*—The more rapidly the public learns to be discriminating in its choice of physicians, the more rapidly will the standards in the practice of medicine become elevated.—Wolbach, *New Growths and Cancer*, Harvard University Press, 1922.



THE USE OF EPINEPHRIN IN THE  
STOKES-ADAMS SYNDROME\*

HAROLD FEIL, M.D.

CLEVELAND

The discomfort of patients who have Stokes-Adams attacks is well known, and until recently there has been no successful means of combating the condition. The syncopal attacks may occur at such frequent intervals that the patient is in almost constant anguish. Besides, there is the danger of permanent ventricular standstill. To those who have observed such attacks, the picture by Holberton<sup>1</sup> is familiar. He describes a fit as "always preceded by cessation of the pulse for a second or two before syncope took place; on the heart recommencing to beat, the face would redden, and consciousness return, with a wild stare and occasionally a snorting, a slight foaming at the mouth and a convulsive action of the muscles of the mouth and face." This cycle may be repeated at frequent intervals, as in the patient whose case history is here reported.

Phear and Parkinson<sup>2</sup> recently reported good results from the subcutaneous injection of epinephrin hydrochlorid in 1:1,000 solution, in a patient who was suffering from syncopal attacks in complete heart block. It was their report that prompted me to employ this therapy.

Epinephrin has been suggested in the treatment of heart block because of its well known effect of stimulation of the physiologic endings of the sympathetic system and its supposed increase of coronary flow.

Barbour and Price<sup>3</sup> have shown that epinephrin constricts the coronary arteries of the monkey (and presumably of man) and slows coronary flow. That epinephrin may stimulate smooth muscle in one concentration and inhibit when the concentration is increased has been shown by Hoskins.<sup>4</sup> Epinephrin may slow the heart through its action on the vagus, either reflexly, because of the elevation of blood pressure, or directly on the center. Syncopal attacks, due to cerebral anemia consequent on ventricular standstill, may occur during the period when complete heart block is developing. In fact, syncopal attacks in complete heart block, when it is firmly established, are uncommon. It is during the transitional period, when the new center of impulse formation is taking on its function, that occasional or frequent periods of ventricular standstill occur.

Kahn<sup>5</sup> produced complete heart block in dogs by injection of epinephrin; but bradycardia did not follow,

because both auricles and ventricles were accelerated. Egmond<sup>6</sup> later caused acceleration of auricles and ventricles in dogs, with experimental complete block. He agreed with Cullis and Tribe,<sup>7</sup> who found that, in experimental complete block in cats (produced by section of the His bundle), epinephrin caused as much acceleration of the auricles and the ventricles as before section. They believed that the accelerator fibers probably reach the ventricle by way of the coronary arteries. Routier<sup>8</sup> accomplished the same acceleration and also noted restoration of normal mechanism for a brief period. Stewart and Rogoff<sup>9</sup> found experimentally that epinephrin passing into the blood stream from the suprarenals at the ordinary rate can produce a cardiac irregularity (due, probably, to premature beats).

Hardoy and Housay<sup>10</sup> used epinephrin in a clinical case of complete heart block without effect on either the block or the heart rate. Intravenous injection of 1 c.c. of epinephrin in a 1:1,000 solution gave rise to dangerous symptoms with great acceleration of both chambers, yet affecting the heart block. Danielopolu and Danulescu<sup>11</sup> in 1916 used epinephrin subcutaneously in cases of complete heart block, noting that the rate of the auricles and ventricles was elevated, without

change in the block. They also noted the lack of parallelism between the rate of acceleration of the auricles and ventricles. They recommend epinephrin hydrochlorid subcutaneously (from 1 to 2 mg.) in attacks of cerebral anemia which occur in heart block, and they state that the effect is less certain in complete heart block than in incomplete block. Lutembacher<sup>12</sup> gave 2 mg. of epinephrin

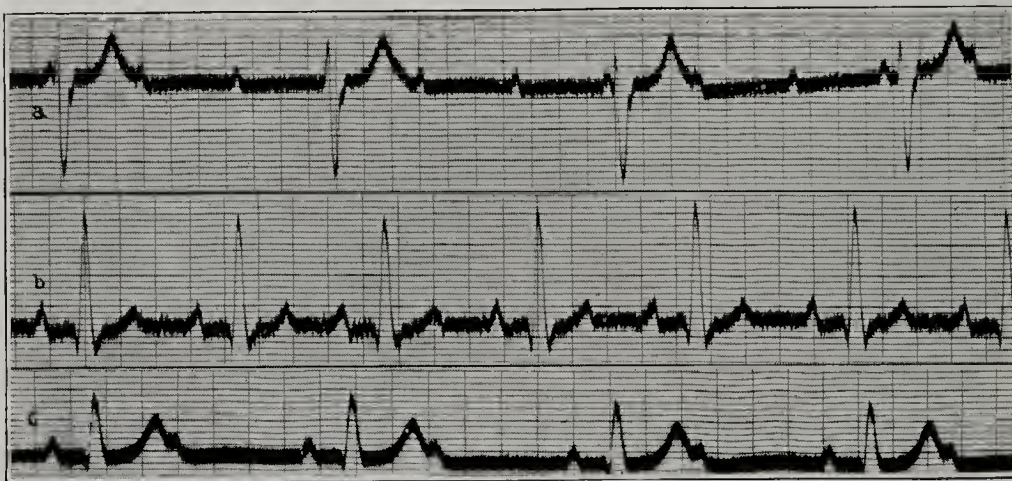


Fig. 1.—a, Complete heart block, after the syncopal attacks had ceased; rate of auricles, 90; rate of ventricles, 30; QRS interval, 0.1013 second. b, Normal mechanism: rate, 68; QRS interval, 0.1116 second; P-R interval, 0.2454 second. c, 2:1 block: rate of auricles, 84; rate of ventricles, 42; QRS interval, 0.1228 second. The interauricular periods in a and c, during which the ventricular systoles fall, are shorter than those which follow; time in fifths of a second; all records from Lead 2.

intravenously in a case of complete heart block, and noted grave symptoms. In another case, the intravenous injection of 1 mg. was followed by numerous extrasystoles, causing ventricular tachycardia and a ventricular pause, with syncope. The pulse remained at 16 a minute for a week, one half of the rate before therapy. He suggests the use of epinephrin in syncopal attacks caused by ventricular standstill. Arrilaga<sup>13</sup> used the drug in six cases of complete heart block (in doses of 1 mg.), without modification of the block. Strisower<sup>14</sup> used epinephrin hydrochlorid subcutaneously in the dose of 0.5 c.c. of a 1:1,000 solution in a case of complete block, the ventricular rate rising from 28 to 84 in one-half hour, and the next day the electrocardiogram was normal. A month later, 2:1 heart block was noted, and a smaller dose of the same solu-

\* From the Cardiographic Laboratory of Mount Sinai Hospital of Cleveland.

1. Holberton, quoted by Balfour: "The Senile Heart," New York, 1894, p. 104.  
2. Phear, H. G., and Parkinson, J.: *Lancet* **1**: 933 (May 13) 1922.  
3. Barbour, H. G., and Price, A. L.: *J. Exper. Med.* **21**: 330, 1915.  
4. Hoskins, R. G.: *Am. J. Physiol.* **29**: 363, 1912.  
5. Kahn, R. H.: *Arch. f. d. ges. Physiol.* **129**: 379, 1909.

6. Van Egmond, A. A. J.: *Arch. f. d. ges. Physiol.* **154**: 39, 1913.  
7. Cullis, W., and Tribe, E. M.: *J. Physiol.* **46**: 141, 1913.  
8. Routier, D.: *Comp. rend. Soc. de biol.* **78**: 375, 1915.  
9. Stewart, G. N., and Rogoff, J. M.: *J. Pharmacol. & Exper. Therap.* **13**: 397 (July) 1919.  
10. Hardoy, P. J., and Housay, B. A.: *J. de physiol. et de path. gén.* **17**: 605, 1917-1918.  
11. Danielopolu, D., and Danulescu, V.: *Compt. rend. Soc. de biol.* **79**: 861, 1916.  
12. Lutembacher, R.: *Arch. d. mal. du cœur.* **13**: 345 (Aug.) 1920.  
13. Arrilaga, F. C.: *abstr., Arch. d. mal. du cœur.* **13**: 370, 1920.  
14. Strisower, R.: *Wien. klin. Wchnschr.* **33**: 269 (March 25) 1920.



tion doubled the ventricular rate and restored normal mechanism.

Phear and Parkinson<sup>2</sup> report the case of a woman, aged 49, who had suffered from recurring syncopal attacks for two years. During a period of six days, there was "periodic recurrence of ventricular standstill with its accompanying phenomena, continued at almost regular intervals during day and night. On two occasions, atropin,  $\frac{1}{100}$  grain, was administered, the immediate effect being a definite diminution in the severity of the symptoms, without any change in the frequency of the attacks; but the improvement was maintained only during two or three attacks and was followed by a reaction with more severe symptoms and enhanced mental distress." Five minims of epinephrin solution (1:1,000) was injected subcutaneously. Fifteen minutes later, the attacks stopped, and, although there was one slight attack a few hours later, no more appeared during the following four weeks. During the evening of the same day, another injection of 10 minims of epinephrin was given. The pulse rate following the administration of epinephrin was no faster than during the period of ventricular activity prior to the giving of the epinephrin.

These authors conclude, from their study of the literature and from their clinical case, that epinephrin administered subcutaneously may or may not abolish complete heart block. Even if the block is not changed, there is usually an acceleration of the rate of the auricles and ventricles. In their case, no change in the complete block occurred, but the standstill of the ventricles was abolished, with relief from attacks of the Stokes-Adams syndrome.

Korns and Christie<sup>15</sup> report a clinical case in which the intramuscular injection of 10 minims of epinephrin hydrochlorid converted a 2:1 block into dissociation.

#### REPORT OF CASE

*History.*—A barber, aged 50, a married man, with one normal child, seen, Aug. 25, 1922, through the kindness of Dr. John Tucker, because of fainting attacks, gave an unimportant family history and a personal history of measles, diphtheria and tonsillitis in childhood. However, he had enjoyed excellent health during adult life until the onset of the present illness. Physicians had often remarked about his slow pulse, but there was no exact information on this point. The first fainting attack occurred during February, 1922, when the patient was entering his room after a day's work. He remained free from attacks until four weeks later, when, while out walking, he became dizzy and fell over in a faint. Another attack followed about three weeks later, when he fainted while at work. It was not unusual at that time for him to faint on rising from his chair. Five weeks prior to admission to the hospital, the syncopal attacks increased in frequency, so that he fainted once or twice daily. During this period approximately 20 pounds (9 kg.) in weight was lost. August 18, his pulse was 80, regular and rhythmical, and the blood pressure was 130 systolic and 76 diastolic. August 26, the attacks increased in number so that one followed another in almost unbroken succession. Continuing August 27 and 28, these successive syncopal attacks kept the patient in almost constant distress. In a typical attack, the ventricular standstill lasted from three to twelve seconds. Pallor was noted, and unconsciousness, twitching of the muscles, convulsive movements and respiratory stridor fol-

lowed. The patient awakened complaining of a severe throbbing headache, with buzzing in his ears. For quite a while, he noted shortness of breath on walking. He never felt any premonitory symptoms before his attacks, and there was no point suggestive of epilepsy in the history.

*Physical Examination.*—This revealed that the patient was well nourished and well developed. He was then lying in bed, and suffering from syncopal attacks. There was no cyanosis or respiratory distress in the periods of consciousness. There were no signs of infection. There was moderate emphysema. The peripheral arteries were not thickened, and the rate of the pulse was 34 a minute, regular and rhythmical at times, but with frequently recurring intervals when the pulse could not be felt. The blood pressure was 140 systolic and 66 diastolic. There was no cardiac enlargement, a finding that was confirmed by fluoroscopic examination. The heart sounds were distant and were accentuated at times. The liver edge was palpable and tender. There were no other signs of stasis. Examination of the urine revealed no abnormality. The Wassermann reaction of the blood was negative, as performed by two laboratories. The electrocardiogram (Fig. 1 a) showed complete heart block, with the Q R S interval measuring 0.101 of a second. The auricular rate was 90, while that of the ventricles was 30.

*Treatment.*—The subcutaneous injection of atropin sulphate, 0.0013 gm., was without effect; 0.6 c.c. of epinephrin hydrochlorid solution (1:1,000) was then given subcutaneously, with immediate cessation of the syncopal attacks. The ventricular rate was 34, and was unbroken by any periods of standstill. No syncopal attacks occurred until twelve hours later, when Stokes-Adams syndromes again recurred. Another injection of 0.6 c.c. of epinephrin terminated these attacks. Twelve hours later, further syncopal attacks were

noted, and were ended by epinephrin. Epinephrin hydrochlorid, 0.6 c.c. of a 1:1,000 solution, was injected twice daily for a period of ten days, and no further attacks occurred. The ventricu-

lar rate continued at about 34 a minute for one week, when the rate rose to 55 and then steadily to 84, five days later. An electrocardiogram (Fig. 1 b) showed normal mechanism with a prolonged P-R interval (0.245 second), and a Q R S interval in excess of the normal (0.114 second). The patient was comfortable and able to carry on simple activities without discomfort. Any exertion, such as climbing stairs or walking fast, provoked dyspnea.

A week later, the electrocardiogram showed 2:1 block (Fig. 1 c), the auricles beating 84 a minute and ventricles 42 a minute. A week later, the electrocardiogram showed complete block again, with a ventricular rate of 30. This

TABLE 1.—EFFECT OF ATROPIN SULPHATE

	Auricular Rate Per Minute	Ventricular Rate Per Minute
Before atropin.....	76	29
Fifteen minutes after 0.0026 gm. atropin sulphate subcutaneously .....	83	31
Thirty-five minutes after atropin.....	92	35
Fifty-five minutes after atropin.....	94	31

dissociation has been maintained to the present moment, and the patient is working at his trade, but with greatly diminished tolerance for exercise, breathlessness coming on after a short walk.

*Reaction of Patient to Drugs.*—Atropin: Atropin sulphate, 0.026 gm., was given subcutaneously to determine the possible rôle of the vagus in the production of the heart block. Complete heart block persisted after the administration of the drug, although physiologic effects were noted, such as dilatation of the pupils and dryness of the pharynx. Table 1 shows the effect of atropin on the respective rates of

15. Korns, H. M., and Christie, C. D.: Note on the Use of Epinephrin in Heart Block, J. A. M. A. 79:1606 (Nov. 4) 1922.



auricles and ventricles. A definite acceleration of both chambers becomes evident fifteen minutes after the injection, persisting for at least forty minutes. No change in the ventricular complexes was noted in the electrocardiogram.

Epinephrin: Epinephrin hydrochlorid, 0.6 c.c. of a 1:1,000 solution, was injected subcutaneously to determine any possible change in rate or mechanism. Table 2 shows the result of this trial. A slight increase of the rate of the auricles and the ventricles is noted, in moderate agreement with the finding of Danielopolu and Danulescu,<sup>11</sup> who administered a much larger dose, from 1.5 to 2 mg. (1.5 to 2 c.c.) of a 1:1,000 solution, and obtained a greater rise in the rates of both chambers. The complete block was unaltered. The administration of epinephrin was followed by muscular tremor, pallor of the hands and face, and diaphoresis.

Blood pressure, maximum systolic and minimum diastolic, remained unchanged in spite of the slight acceleration of the heart.

CONCLUSION

There is clinical evidence that the subcutaneous injection of epinephrin in cases of partial heart block may overcome the delay in conduction, restoring it to normal; in 2:1 block, the mechanism may be restored to normal or dissociation may follow. In complete

TABLE 2.—EFFECT OF EPINEPHRIN

	Auricular Rate	Ven- tricular Rate	Blood —Pressure—	
			Systolic	Diastolic
Before epinephrin.....	78	29	118	50
Ten minutes after 0.6 c.c. epinephrin, 1:1,000 solution.....	76	29	120	42
Twenty minutes after epinephrin.....	80	29	120	44
Thirty minutes after epinephrin.....	82	30	124	40
Forty minutes after epinephrin.....	79	31	120	42
Fifty minutes after epinephrin.....	81	30	120	42
Sixty minutes after epinephrin.....	79			

TABLE 3.—BLOOD PRESSURE

Date	Rhythm	Systolic	Diastolic
	Normal (clinical examination).....	130	76
	Complete heart block:		
Aug. 18, 1922	Before epinephrin.....	140	66
Sept. 1, 1922	Ten minutes after epinephrin.....	152	62
Sept. 3, 1922	Complete heart block.....	150	70
Oct. 28, 1922	Complete heart block.....	118	50

block, normal sequence may result or no change occur. In the latter event acceleration of the auricles and the ventricles usually results. In cases of frequently recurring attacks of Stokes-Adams' syndrome, the syncopal attacks may be abolished. From the clinical report of the English observers and from my report, the effect of the subcutaneous injection may be said to last about twelve hours. The dose administered to adults of average weight is from 0.3 to 0.6 c.c. of a 1:1,000 solution, injected subcutaneously. The danger in administration of epinephrin to patients with a considerable degree of arteriosclerosis or with hypertension (and in many cases of complete heart block there is an elevated systolic maximum pressure) must be weighed against the dangers and the discomfort of the syncopal attacks. Doubtless, epinephrin therapy is justified in the treatment of patients with frequently recurring syncopal attacks, in view of the usual urgency of the patient's condition and because of the satisfactory results obtained in the reported cases. In no event should epinephrin be administered intravenously. The use of epinephrin subcutaneously offers relief from Stokes-Adams' attacks and doubtless stimulates the new center of impulse formation in complete heart block, by way of the sympathetic endings. There appears to be

little or no danger in the use of epinephrin in this type of case when it is properly administered. Intravenous injection results in greater concentration of epinephrin in the blood stream, and it is this factor that is probably responsible for the grave reactions reported in the literature.<sup>16</sup>

609 Osborn Building.

THE DEMONSTRATION OF UNERUPTED HUTCHINSON'S TEETH BY THE ROENTGEN RAY \*

JOHN H. STOKES, M.D.

AND

BOYD S. GARDNER, D.D.S.

ROCHESTER, MINN.

On a number of occasions, one of us (J. H. S.) has been impressed with the significance of aplasia of the upper central incisors of the second dentition as a clue to the existence of heredosyphilis.

With a view to determining whether dental aplasia in heredosyphilis is actual or merely apparent, because of impaction or noneruption of the upper central incisors, roentgenograms are being taken in suitable cases in which the delayed appearance of these teeth suggests the possibility of aplasia.

The examination of children's teeth by the roentgen ray has been considered difficult and more or less hazardous. If the operator, however, does not attempt to make too many exposures and uses the bite method, children even at the age of 4 or 5 years can be handled quite successfully. The film is held in place by closing the jaws. A third person, to engage the hands of the child, practically eliminates danger. As it is only necessary to observe the unerupted upper incisors to get the full benefit of the dental examination in such patients, one exposure is sufficient.

We are not as yet in a position to make a definite statement with regard to the existence of an actual total aplasia in certain cases of heredosyphilis. The intra-alveolar demonstration of as yet unerupted Hutchinson's teeth represented by the case here reported seems, however, to have sufficient diagnostic interest to justify a report:

REPORT OF CASE

F. L., a baby girl, aged 5 months, was seen in the Mayo Clinic in 1917, with signs of nasal obstruction. What appeared to be a large parapharyngeal fluctuating mass was recognized. On the finding of a strongly positive Wassermann reaction on the blood, the mass was interpreted as probably gummatous. No teeth had as yet appeared. The liver was enlarged. Definite anterior bowing of the tibiae and a moderate rachitic rosary were recognized; slight epiphyseal enlargement was also apparent. There was a definite venous ectasia. The blood Wassermann reaction on the patient's mother was strongly positive.

Following the administration of six intravenous injections of arsphenamin, this patient was not seen again for five years. In this interval the pharyngeal gumma had completely involuted, the infection had become quiescent, the child had become fairly robust, and while she still displayed osseous stigmas suggestive of heredosyphilis, the Wassermann reaction was now repeatedly negative. At the time of her reexamination, the upper central incisors were absent and the

16. Rogoff, J. M.: Personal communication to the author.  
\* From the Sections on Dermatology and Syphilology, and Dental Surgery, Mayo Clinic.



mother said that the first dentition teeth had been poor and had decayed rapidly. She was concerned lest the second dentition teeth should not be normal.

In the effort to determine whether an aplasia of the second dentition upper central incisors existed, a roentgenogram was made. The Hutchinson characteristics of the unerupted teeth are easily apparent, particularly the lateral bulging and the notch.

#### COMMENT

In any large syphilologic practice, cases are occasionally encountered in which the fact that the child's teeth are still of the first dentition makes it impossible, in the absence of other conclusive evidence, to clinch the diagnosis of heredosyphilis by the identification of true Hutchinson's teeth. In such cases, it seems possible

that intra-alveolar identification of Hutchinson's teeth by the roentgen ray may be of diagnostic service. Moreover, as in the present instance, it may thus be possible to clinch the diagnosis of heredosyphilis in children in whom loss of the first dentition incisors, with delayed eruption of those of the second dentition, makes a direct clinical identification of Hutchinson's teeth impossible for the time being. We are carrying on further studies on these possibilities.



Unerupted Hutchinson's upper central incisors demonstrated by roentgen ray in a child, aged 5 years.

It is further of interest to note that, although the six arsphenamin injections which this child received at the age of 5 months caused a prompt recession of the active gummatous manifestations of the syphilis, there was no effect whatever on the germinal anlagen of the Hutchinson teeth. The anlagen of the upper central incisors of the second dentition are recognizable on the average at the twelfth month of life, and presumably have already received the abnormal developmental impulse or trend which leads to the formation of the Hutchinson teeth. It is certainly suggested that treatment for syphilis in infancy cannot affect the appearance of Hutchinson incisors in the second dentition. It must be admitted, however, that the treatment in this case did not reach the intensity demanded by modern standards, so that this conclusion can hardly be accepted as final.

**Safety Week.**—Much good was accomplished through the holding of Safety Week, observed in New York and throughout the country during the week of October 8-14, last. Through the concentrated efforts of the committee in charge, forty-seven fewer lives were lost during Safety Week, as compared to the corresponding week of 1921, and thousands of accidents were prevented in the City of New York alone. It is safe to assume that the "Safety Week" drive was responsible for saving the lives of hundreds of people throughout the country. Safety Week did one thing, if nothing else: It made people think, made them more careful, and cautioned them over and over again "not to get hurt." We should use the slogan "Don't Get Hurt" not for one week, but for all weeks, and for all times. No effort is more commendable or more heroic than the effort to prevent accidents. Teachers should inculcate into the minds of schoolchildren, at every possible opportunity, the essentials of "Safety First."—*School Health News*, November, 1922.

## FALLIBILITY OF ROENTGENOLOGIC EVIDENCE OF HEALED GASTRIC ULCER

REPORT OF CASE \*

EDWARD HOLLANDER, M.D.

NEW YORK

The changes in the roentgen-ray findings of peptic ulcer that take place in the course of medical treatment can be studied best in that type of ulcer showing a penetration on the lesser curvature. When filled by barium, the crater of a penetrating ulcer appears as a budlike projection from the outline of the stomach, which has been termed a "niche" by Haudek. When situated on the lesser curvature, a niche can be easily visualized, and is unlikely to be simulated by adhesions or cicatrices as are ulcers at the pylorus or duodenum.

Since Hamburger, in 1918, published his roentgenologic studies on the healing of peptic ulcers, several reports have appeared showing the diminution in size or the total disappearance of a niche in response to medical treatment. Most of the reported cases were observed for too short a time to draw definite conclu-



Fig. 1.—Lesser curvature niche after ten days of medical treatment.

sions regarding their cure, but these changes in the roentgenologic picture were interpreted as strong evidence of healing. The case here reported is instructive in showing the possibility of error in such an interpretation.

#### REPORT OF CASE

**History.**—L. G., a man, aged 46, a furrier, came under my observation, April 18, 1921. His gastric complaint was of

\* Read before the Metropolitan Medical Society, Feb. 28, 1922.



eight years' duration. For seven years his symptoms had been very mild. For about one year he had had attacks of severe epigastric pain and occasional vomiting. Twice there had been dark brown fluid in the vomitus, presumably blood, but a tarry stool had not been observed. He had never on a strict regimen of treatment, and there was no loss in weight.

**Physical Examination.**—The patient was a tall, thin, neurotic man weighing 130 pounds (59 kg.). The only physical finding of note was slight tenderness, which was localized in the epigastrium midway between the xiphoid cartilage and the umbilicus.

The blood pressure and the urine were normal. A test meal disclosed normal free hydrochloric acid and a small amount of macroscopic altered blood.

From these data the diagnosis of gastric ulcer was made, and April 20, the patient was placed on a modified Sippy treatment.

A roentgenologic examination, April 30, by Dr. S. J. Goldfarb, disclosed a niche on the lesser curvature, midway between the cardia and the pylorus (Fig. 1). There was no incisure on the greater curvature opposite the niche. The motility of the stomach was not delayed.

A confirmatory examination was made five days later, and the same results were again obtained.

**Course.**—Because of the roentgen-ray findings and the chronicity of the symptoms, operation was advised; the patient, however, feeling improved on his restricted diet, requested that the medical treatment be continued. At the end of two months his symptoms and tenderness were entirely gone and his weight was 136 pounds (62 kg.), a gain of 6 pounds (2.7 kg.) since beginning treatment. He was then referred to Dr. Goldfarb to determine whether any change in the roentgenologic appearance of the ulcer occurred, corresponding to the clinical improvement. He was examined, July 2, and to our surprise no evidence of the ulcer could be found either on fluoroscopic examination or by means of plates.

To corroborate this finding, the patient was examined fluoroscopically five days later, and again no evidence of the ulcer was seen. I believed that this case was another medically healed chronic gastric ulcer with roentgenologic evidence, similar to those that had been reported. July 15, however, almost three months after the beginning of the treatment, the patient suffered a return of the epigastric pain and vomiting, in which a small amount of altered blood was present.

To determine whether any change in the roentgen picture occurred, corresponding to this return of symptoms, another roentgenologic examination was made, July 20, but for a third time, no sign of the ulcer could be seen (Fig. 2). Because of the severity of the pain and the presence of blood in the vomitus, it was decided to submit the man to a laparotomy, despite the roentgen-ray findings. At operation, August 3, by Dr. Albert A. Berg, a callous ulcer was found present on the lesser curvature exactly as shown in the first roentgenologic examination. A subtotal gastrectomy was performed. Gross examination of the excised specimen revealed an indurated ulcer, the margins of which were congested and hemorrhagic in spots. The crater was filled with a mucoid

substance, easily removed with the finger and without any intimate connection with the ulcer surface. The depth of the excavation then corresponded with the size of the niche in the first roentgenologic examination (Fig. 1). The mucoid material filling the crater probably accounted for the failure of the barium to enter it in the repeated examinations.

#### REVIEW OF LITERATURE

In 1918, Hamburger<sup>1</sup> reported three cases of penetrating ulcer observed roentgenologically from three to four months, in which medical treatment was followed by partial to complete filling of a niche. One patient remained well for nearly two years. He also reported a case in which a peristaltic indentation was mistaken for a penetrating ulcer, which was not found at operation. He cited a similar case observed by Cole.

Small series of similar cases, observed for periods varying from fifteen weeks to one and one-half years, were also reported by White,<sup>2</sup> Buckstein<sup>3</sup> and Shattuck.<sup>4</sup> White remarks that it is possible that food may occasionally stick in the bottom of an ulcer crater and make it appear shallow.

In 1920, Øhnell<sup>5</sup> reported thirty-four similar types of ulcers, treated medically between November, 1916, and July, 1918. In thirty-one of these cases, the niches disappeared on an average after forty and one-half days of the ulcer cure. He found that as the niche disappeared the patient became free from symptoms, tenderness disappeared, and generally the motility distinctly improved. However, he stated that he knew of no clinically cured ulcer that had previously shown a niche, in which an actual pathologic anatomic demonstration had been made, showing the healed ulcer covered with epithelial tissue. He concluded that the period of observation in his

cases was still too short to judge of permanent cure.

Holmgren, in the discussion of Øhnell's paper, said that in several cases he, too, obtained similar results, but that in certain cases the patients returned in the course of six months or a year with the niche in the same place as before.

Recently, Diamond<sup>6</sup> gave a detailed report of fourteen cases responding to medical treatment with the



Fig. 2.—Absence of niche in repeated examinations after from ten and one-half weeks to three months of medical treatment.

1. Hamburger, W. W.: Roentgenological Studies in the Healing of Gastric and Duodenal Ulcers, *Am. J. M. Sc.* **155**: 204 (Feb.) 1918.

2. White, F. W.: Improvement in the Medical Treatment of Chronic Ulcer of the Stomach and Duodenum, *M. Clin. N. Am.* **2**: 1431 (March) 1919.

3. Buckstein, Jacob: Roentgenographic Evidence of Ulcer Healing, *J. A. M. A.* **76**: 231 (Jan. 22) 1921.

4. Shattuck, H. F.: Study of the Early Effects of the Sippy Method of Treating Peptic Ulcer, *J. A. M. A.* **77**: 1311 (Oct. 22) 1921.

5. Øhnell, Harold: Interne Behandlung bei Ulcus Ventriculi mit roentgenologischer Nische, *Acta med. Scandinav.* **52**: 1, 1919-1920; Internal Treatment of Ulcus Ventriculi with Niche Proved by X-Rays, *ibid.* **53**: 706 (Jan.) 1921.

6. Diamond, J. S.: Observations on the Curability of Gastric Ulcer, with a Report of Fourteen Cases of Healed Lesser Curvature Ulcers, *Am. J. M. Sc.* **162**: 548 (April) 1922.



disappearance of a niche. Three patients in this group remained well for more than four years, which is the longest period of observation thus far recorded. The other cases were observed for varying periods up to three years.

## COMMENT

It is difficult to prove the curative effect of medical treatment of chronic gastric ulcer because of the spontaneous remissions in symptoms that so frequently characterize the disease. It is well known, as Mayo states, that "one or two years between attacks without treatment is a common early history." Such patients consider themselves cured until a sudden relapse indicates that the disease still exists. However, in such cases, the view is also tenable that the old ulcer had healed, and a new one formed owing to the activity of the original etiologic agent. The study of the changes in gastric secretion or motility that follow medical treatment can give no results that are conclusive of cure, since there are no findings in the secretory or motor functions of the stomach that are pathognomonic for peptic ulcer. Roentgenologic examination (with a small percentage of error in mistaking a projection due to peristalsis or adhesions for a true niche), affords a method of obtaining definite objective record of morphologic changes in the surface of an ulcer.

It seems reasonable to interpret the diminution in size or the total disappearance of a niche as evidence of healing or cure, especially when these changes are accompanied by clinical evidence of improvement, and by other roentgenologic findings, such as the disappearance of an incisure, and improved motility. However, the case presented shows that this interpretation is open to error. There are causes for the disappearance of a niche other than the obliteration of an ulcer crater by granulation or cicatricial tissue. As mentioned above, food may enter the crater. In the case which I have presented, mucoid material filled the crater. It has been suggested that pressure by edema or enlargement of an organ, such as the liver or pancreas, adjacent to the ulcer, may obliterate the crater. It must further be borne in mind that, even if an ulcer crater is filled with granulation tissue, the ulcer cannot be considered healed unless its surface is completely covered with epithelial tissue. This condition the roentgen ray cannot demonstrate.

These facts, and also the knowledge that there are frequent remissions in symptoms in this disease, emphasize the need of a long period of observation (Moynihan suggests three years) before drawing any definite conclusions regarding the medical cure of a chronic gastric ulcer. To quote Moynihan, "When a chronic gastric ulcer, the cause of recurring attacks, is seen

at the time of operation, it is perfectly obvious that the healing of a condition when such gross anatomic changes are present can only be brought about by long continued and rigid treatment."

71 East Ninety-Sixth Street.

## Clinical Notes, Suggestions, and New Instruments

### EMPLOYMENT OF TWO DUODENAL TUBES IN GASTRO-ENTEROLOGY

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The recent article by Dr. Epstein<sup>1</sup> on a simple nonoperative method of treating gastric ulcer calls to mind a procedure which I have found of value, and which also has as a basis the use of two duodenal tubes. Although, as yet, I have not resorted to lavage and siphonage by means of the tubes with the idea of treating ulcer, we have found the use of the two tubes of considerable value in diagnosis. The possibilities of the procedure as affecting both diagnosis and treatment are almost without limit. The case here reported will illustrate concretely the value of the procedure.

#### REPORT OF CASE

H. S., a man, aged 65, white, admitted to the Vineyard Park Hospital, Aug. 3, 1922, complained of indigestion, loss of appetite, and loss of weight. He had had indigestion twenty-five or thirty years; anorexia for the last five or six years, and considerable distress after meals, following a period of about one hour of comparative comfort. One year before admission he had a hemorrhage from the stomach, and then tarry stools. He remained in bed several weeks, and had not worked

since. He had lost 30 pounds (13.6 kg.) in one year. He had a sense of soreness and fullness in the left upper abdominal quadrant, and could not lie on the back or the right side. He vomited only occasionally now, and seldom any blood. Occasionally he coughed. The bowels were constipated. There were no cardiovascular or nervous symptoms.

The patient had had the usual diseases of childhood. Hemoptysis occurred in 1881, but not since. He was the father of seven children in good health. The family history and social history were negative.

The patient was poorly nourished. He lay in a left semi-recumbent position in evident distress. The head, neck and chest were for the most part surgically negative. The abdomen was flat. The musculature was poor. There was marked sensitiveness and a vague sense of a mass in the left upper quadrant. A duodenal tube was passed, but no stomach contents could be withdrawn. A roentgenogram (Fig. 1) revealed a large shadow in the region of the cardia, with a small stream of the barium trickling down through a constriction toward the pylorus. In view of the failure of the first stomach aspiration, it was determined to leave a tube



Fig. 1.—Twenty minutes after barium meal: bulk of meal in cardia, and some trickling down through the constriction toward the pylorus. (This and the accompanying roentgenogram were taken by Dr. E. L. Mathias.)

1. Epstein, A. A.: A Simple Nonoperative Method of Treating Gastric Ulcer, J. A. M. A. 79: 1321 (Oct. 14) 1922.



in situ for twelve hours. Accordingly, one was passed on the evening of August 5, and allowed to sink as far as possible until the following morning, with the patient turned on the right side as much of the time as he was able. On the morning of August 6, 2 c.c. of material was aspirated through the tube (Fig. 2 A). This was bloody, of a sour odor, alkaline to litmus, of a thin consistency, and contained no free acid. There was both microscopic and occult blood, and the total acidity was 60.

Figure 2 shows how far through the constriction the duodenal tube was able to gravitate during the twelve hour period. A second tube, passed an hour before the roentgenogram was taken, is shown in the pouch above the constriction (Fig. 2 B). It was intended to show the amount of uninvolved stomach by injecting the barium solution through the two tubes. In a measure this proved unsuccessful, but a diagnosis of carcinoma adherent to the retroperitoneal structures was substantiated. Operation at the patient's request was performed by Dr. John G. Sheldon, August 6. A carcinoma of the lesser curvature of the stomach was found, and numerous visceral metastases. The mass was immovable on the retroperitoneal structures. The abdomen was closed. The exploration was made under a local anesthetic.

#### POSSIBILITIES OF THE TWO TUBE PROCEDURE

It is our purpose, as opportunities offer, to make use of the two tube procedure in elucidating some of the problems of gastro-enterology which have proved difficult by other means. Some of the problems that would seem capable of solution are:

(1) synchronous determination of the chemistry of the two pouches of an hour-glass stomach (the case herewith reported is of this general group); (2) aspiration of duodenal secretions through one tube while the chemistry of the stomach is being studied by means of the other, thus avoiding error due to regurgitating alkali; (3) aspiration of the stomach secretions during the duodenal test for pancreas function, in order to rule out the seepage into the duodenum of acid gastric juice; (4) to determine whether lavage and siphonage of the stomach in cases of morphin poisoning, acute dilatation, and the like, will be possible while at the same time duodenal feeding is being carried out; (5) the question whether it will be possible over a considerable period of time to pour alkali from the duodenal tube into the stomach through the other tube, thus obviating such an operation as cholecystogastrostomy, and the use of exogenous alkali in cases of hyperacidity with ulcer.

In fractional gastric analysis shall we not be getting more nearly the true acidity at a given period by withdrawing some juice from each of two tubes at opposite ends of the stomach and mixing these samples before titrating for the acidity?

3825 Warwick Boulevard.

**The Town with the Highest Child Mortality.**—This, according to Dr. Ramón Pardo, is a proper description for Oaxaca, a city in southeastern Mexico. The average death rate among children under 11 years of age in 1910-1920 has been 604 per thousand births; among infants under 6 months, 204.4 per thousand births. The birth rate is normal, some years even rising to 53 per thousand inhabitants. The abnormal child mortality is gradually depopulating the town. Pardo thinks a similar condition prevails in other Mexican towns.

#### TWO CASES OF CHRONIC SIMPLE CYSTITIS OF UNUSUAL ETIOLOGY

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Assistant Cystoscopist, French Hospital

The infrequency of this form of cystitis, and the unusual etiology of the cases in question, are the reasons for this report.

#### REPORT OF CASES

**CASE 1.**—Miss L. P., aged 30, a milliner, was referred to me, March 9, 1917, on account of intermittent frequent, painful, burning urination present for the last three months. The condition had been of gradual onset. The history otherwise was of no importance.

Cystoscopy revealed the bladder mucosa intensely red throughout. Scattered over the trigon were small, grayish flakes, easily dislodged by the tip of the ureteral catheter. Both ureters were catheterized to the kidney pelvis, and clear urine was obtained. Physical examination revealed no other abnormality.

Smears from the urethral meatus and from Skene's and Bartholin's glands showed some pus cells and organisms,

but no gonococci. Catheterized bladder urine was cloudy, of offensive odor and alkaline, and contained a few pus cells. There were no gonococci or tubercle bacilli. Urine from the left ureter contained a few pus cells; urine from the right ureter was normal. Indigocarmine, intravenously, appeared deep blue in fifteen minutes from both sides. The blood Wassermann reaction was negative.

April 3, under rest and local treatment, the patient was relieved of all symptoms, and resumed work. June 2, she returned with all her former symptoms. Close questioning into her personal habits revealed that she habitually used a rubber sponge, followed by talcum powder on cotton, to keep the vulva dry and clean. Advice against this practice, five days' rest, fluid diet, daily

bladder irrigation with 1:4,000 silver nitrate, and hot sitz baths brought permanent relief. A letter from this patient, Nov. 8, 1922, stated that she had been well since.

**CASE 2.**—Miss L. B., aged 33, engaged in housework, consulted the family physician, Nov. 1, 1920, because of dysuria and dull, aching pain in the lower part of the abdomen. The symptoms were of three weeks' duration, with gradual onset. December 31, the patient entered French Hospital, where I saw her in consultation. No other important fact in the history was elicited.

Rectal examination with the finger detected a small, smooth uterus with the fundus retroverted deep into the culdesac. Cystoscopy revealed the bladder irritable, the mucosa considerably injected, the posterior aspect of the trigon bearing tiny, superficial ulcerations. The ureters were catheterized to the kidney pelvis. The catheterized bladder urine contained many white and red blood cells. The divided urines were normal. No other findings were recorded on two subsequent cystoscopies while the patient was in the hospital. Roentgen-ray examination of the kidneys and ureters was negative. The blood Wassermann reaction was negative.

Jan. 7, 1921, unable to account for the cystitis, I advised exploratory incision to correct the position of the uterus and possibly to remove an adherent appendix. This was done on the 12th, confirming both these conditions. The patient, apparently, was cured; she was discharged on the 27th.

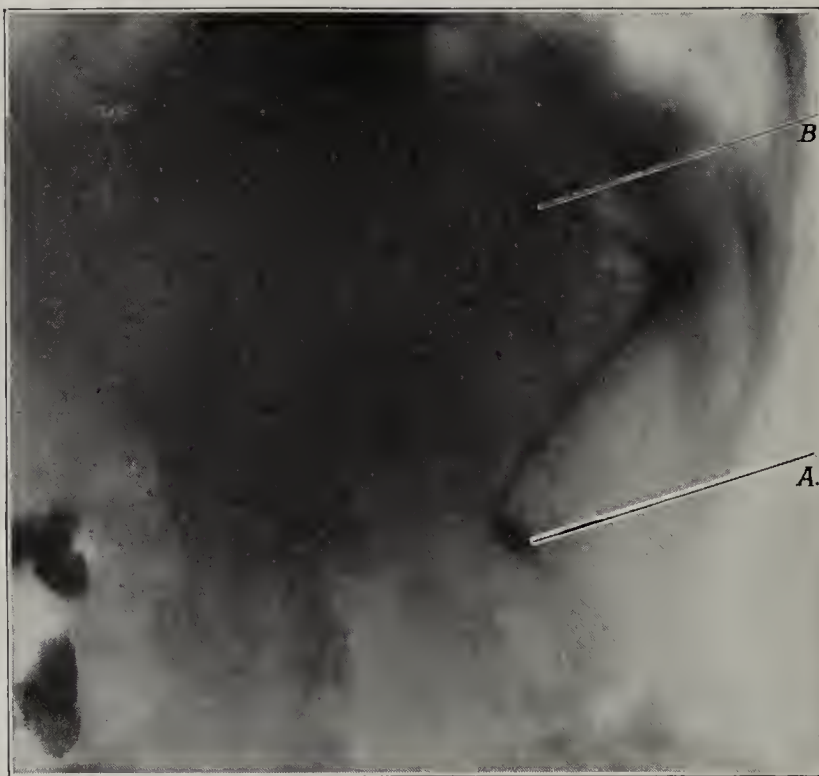


Fig. 2.—Two duodenal tubes in situ. Tube A was passed twelve hours before roentgenogram was taken.



October 13, however, she again complained of all former symptoms. Cystoscopy revealed essentially the previous findings minus the ulcerations.

Closer inquiry into her personal habits brought out the statement that whenever she felt secretions in her external genitals she applied talcum powder on a cloth to the vulva. Correction of this practice and local treatment, as in Case 1, resulted in complete recovery.

I saw this patient, Nov. 18, 1922, and she assured me that she has had no further genito-urinary trouble.

#### COMMENT

The etiology of these cases suggests that the cystitis in question is probably more frequent than the literature leads one to believe.<sup>1</sup>

Not until the hygiene of the vulva was corrected did either patient recover permanently. Case 2 bears strong evidence that complete recovery would have taken place without the operation.

138 East Fifty-Fifth Street.

### Special Article

## THE CARE AND FEEDING OF INFANTS

[NOTE.—This is the first of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

### INFANT FEEDING

All infants, during the first months of life, should receive fresh, clean milk in their diet. In most instances, a sufficient supply can be obtained from only two sources: (1) breast milk from the mother or a wetnurse; (2) cow's milk from a properly managed dairy. Correspondingly, we speak of two classes of feeding, breast feeding and cow's milk feeding.

### BREAST MILK FEEDING

From every standpoint, the ideal mother is one who can nurse her own baby, and thereby furnish it with sufficient milk to meet its needs for normal growth and development. The mother who is not anxious to nurse her infant is a great exception. In fact, most women are greatly disappointed at being unable to meet the full requirements of their baby.

The mother can easily be impressed with the fact that breast milk is the ideal food for a baby. It is always fresh; with a simple technic it remains clean, and it is always available. From the standpoint of economy, it is by far less expensive than other foods. It is the best prophylactic against the communicable diseases and the commoner infections in infancy, and as a curative measure in the presence of nutritional disturbances and infections it has no peer.

Even more important is the fact that the infant is assured a mother's careful observation, owing to its frequent and intimate contact with her. She soon learns to recognize the earliest manifestations of its illnesses. It must be recognized as a fact that most mothers are capable of nursing their infants.

It cannot be denied that there are mothers whose mental and physical condition makes breast feeding inadvisable, but fortunately they are greatly in the minority. Breasts with an insufficiency of glandular

tissue to meet the full needs of the infant, even during the first months of lactation, are encountered more frequently. Far less commonly do we find breasts so poorly developed that all lactation is to be disregarded.

McClanahan,<sup>1</sup> summarizing the opinion of a group of pediatricians whom he interrogated for opinions as to the relative morbidity among breast and bottle fed infants, concluded:

Breast-fed infants are less susceptible to infection, with possibly two exceptions—influenza and tuberculosis. They resist infection to better advantage and with less after-effect from the disease. Breast-fed infants have less morbidity than properly fed bottle infants, and the advantages are still greater as compared with infants who have been improperly fed.

Studies made in many different countries have demonstrated that the death rate among the artificially fed is at all times higher than among the breast fed; that when breast feeding is the custom, the mortality rate is low in spite of other unfavorable factors; and that when breast feeding is increased in a community, the infant mortality rate is lowered.

In studies made in overcrowded and poverty-stricken districts of London, New York, Chicago and other large cities, the fact is very clearly brought out that where by race or custom it is the practice to feed infants at the breast, the infant mortality rate is lower, even though the environment is highly insanitary.

In our complicated modern society, there must be widespread emphasis among all classes, not only on the importance of breast feeding but also on the ways and means of making it successful. There are many false opinions to be overcome, such as the statement frequently made that the modern woman has lost the ability to suckle her young, and the feeling created, as a result of the emphasis on the importance of pure milk and pasteurization in infant feeding, that this is at least as good as breast feeding and often better.

The reports of Sedgwick<sup>2</sup> of the findings of the Breast Feeding Investigation Bureau of the University of Minnesota confirm the ideas which many physicians have held, that in greater part the inability of the mother to nurse her infant is due to improper instruction and insufficient encouragement on the part of the attending obstetrician and those responsible for her nursing care.

Only too frequently when the question is asked, "Why did you wean your child?" the answer is, "Because the doctor advised me to do so." Knowing how commonly this is true, there is certainly room for missionary work in order that breast feeding may receive further encouragement.

The University of Minnesota breast feeding bureau supervised the care of 2,847 babies during the year 1919. Of these, 96 per cent. were at the breast at the end of their second month, and of 2,022 still under observation at the end on nine months, 72 per cent. were at the breast receiving part or all of their food in this way.

In Boston, the Baby Hygiene Association has had such success, that of 6,000 infants under its supervision only 196 babies less than 6 months old were entirely artificially fed. The statistics of the Starr Center in Philadelphia are equally notable. In 1912-1913, only 48 per cent. of the babies under its care were breast fed. After six years of propaganda for breast feeding, of ninety-two infants whose mothers had been cared for by the prenatal department, ninety were entirely breast-fed at 1 month of age, one was partially breast-fed, and only one was bottle fed.

1. McClanahan, H. M.: Arch. Pediat. **35**: 653 (Nov.) 1918.

2. Sedgwick, J. P.: Preliminary Report of Study of Breast Feeding in Minneapolis, Am. J. Dis. Child. **21**: 455 (May) 1921.

Smith, G. G.: Chronic Cystitis in Women Not a Disease, J. A. M. A. **61**: 2038 (Dec. 6) 1913.



## STIMULATION OF THE BREASTS

The demand which is made on the breast is by far the most important factor in the maintenance of the breast milk supply. Repeated, regular and complete evacuation of the breasts by a vigorous baby is, of course, the natural and best method. When this natural stimulus is not obtained, or when the demand on the breast is insufficient for any reason, the supply of breast milk decreases gradually until the supply is insufficient to meet the infant's needs. In these cases, artificial aid is necessary.

## HAND EXPRESSION

Expression by hand is the best method for stimulating the breasts to secrete, when an infant is not available for this purpose. Wetnurses find it of the greatest advantage to practice expression at regular four hour periods, and when the breast is practically drained to place the wetnurse's infant at the breasts to empty them completely, both breasts being emptied at each period. The following methods for breast expression may well be followed:

The hands and nails should be scrubbed with soap, warm water and a nail brush, for at least one full minute. The nipple is washed with fresh absorbent cotton and boiled water or a boric solution. The hands are dried thoroughly on a clean towel and kept dry. A sterilized graduated glass tumbler or large-mouth bottle should be at hand to receive the milk.

1. The breast is grasped gently, but firmly, between the thumb placed in front, and the remainder of the fingers on the under surface of the breast. The thumb in front and the first finger beneath should rest just outside the pigmented area of the breast.

2. With the thumb, a downward pressing motion is made on the front against the fingers on the back of the breast, and the thumb in front and fingers behind are carried downward to the base of the nipple.

3. This second act should end with a slight forward pull with gentle pressure at the back of the nipple, which causes the milk to flow out.

The combination of these three movements may be described as "back, down, out."

It is not necessary to touch the nipple.

This act can be repeated from thirty to sixty times a minute after some practice.

It is advisable to empty both breasts at each expression.

The milk should be covered at once by a sterile cloth held in place by a rubber band and kept on ice until used.

Hoobler<sup>3</sup> reports that in the city of Detroit during two succeeding years, 67,000 ounces and 60,000 ounces, respectively, of milk was expressed from the breasts of women in different institutions and from private sources, and distributed throughout the city. Continued stimulation of the breasts by expression of the milk resulted in increasing quantities of milk.

Understimulation of the breasts results in a deficient milk supply.

## MATERNAL NURSING

*The Diet of the Mother.*—The first principle of feeding a nursing mother should be to provide her with an abundance of simple but nourishing food. It should always be palatable and to the mother's liking. During the first days following labor and while she is still in bed, she should be on a more or less light diet, but one that is varied so that her appetite may be stimulated; she may thereby be encouraged to take sufficient food to meet the needs of the infant and herself. Four meals in twenty-four hours are usually all that she will take with comfort, while in bed.

When the mother is up and about, and has resumed her ordinary duties, she may be allowed to eat such foods as she was accustomed to before the advent of pregnancy and motherhood. It is a fallacy to forbid vegetables and fruits on general principles. As a rule, food that the patient can digest without inconvenience is a safe food, so far as the nursing is concerned. Occasionally an infant is seen who reacts to mother's milk by the development of colic when certain of the aromatic vegetables, such as turnips, cauliflower and onions, are a part of the mother's diet. Or, again, the same foods, or such additions to the mother's diet as coffee or salads, may interfere with her digestion and thereby change the quantity and not infrequently also the quality of her milk, all of which may react upon the child. Exceptionally an infant is seen that has become sensitized to one of the animal or vegetable proteins. These cases will be more fully discussed under "Idiosyncrasy to Mother's Milk." Restrictions in the mother's diet are, however, more especially indicated when she is feeding a premature or sick infant, because such infants are more readily affected by qualitative changes in the breast milk. More commonly, the error in the mother's diet lies in the nature of underfeeding and overfeeding. A greatly restricted diet in a robust young mother who has always eaten to her own satisfaction of a generous variety of foods is one of the surest means of curtailing the quantity and lowering the quality of her milk supply. On the other hand, overfeeding leads to revulsion to food, and sooner or later indigestion results. When the mother is convinced that any article of food disagrees with her, even though there may be doubt about it, the food should be discontinued. In a general way, milk, eggs, meat, fish, poultry, cereals, fresh vegetables and fruits should constitute the basis for selection. The acid fruits, salads and aromatic vegetables may be tried, to be discarded if they seem to distress the infant. Egg-nogs, cereal gruels with milk, cocoa with milk, malted milk, and similar drinks can be given with the meals; or, when the mother desires, she may take them between meals. The day's diet should include 1 quart of milk in some form, and at least 1 quart of water. Tea and coffee in moderate amounts may be permitted.

*Number of Meals.*—Most mothers are better satisfied when eating only four times daily, the fourth meal being supplied at bedtime. The latter should consist of a dish of cereal and milk, or some other simple and easily digested food.

*Air and Exercise.*—From two to four hours daily should be spent in the open air, weather permitting. During this outdoor period, she should take moderate exercise, but never to the point of fatigue. It is well to divide the time of recreation into a morning and an afternoon period.

*Sleep.*—At least eight hours out of every twenty-four should be given to sleep. If her nights are disturbed, she should have the benefit of an hour or two rest period during midday. In case the infant has been accustomed to a feeding during the night, this should be withdrawn as soon as possible so that there will be only one nursing period between 6 p. m. and 6 a. m. This is most easily accomplished when the infant sleeps in a room separated from the mother and is under another's care during the night. Under all circumstances, the infant must sleep in its own crib.

*To Avoid Constipation.*—One free evacuation daily should be insisted on. As the excessive use of

3. Hoobler, B. R.: Tr. Am. Ped. Soc. **32**: 290, 1920.



cathartics may result in diarrhea in the baby, efforts should be made to regulate the bowel function through food and exercise. A glass of cold water on arising in the morning, combined with a diet containing coarse cereals, sufficient vegetables and fruits, is usually all that is necessary. If this regimen does not have the desired effect, abdominal massage and local measures, such as an oil enema or a suppository, may prove effective. When these measures do not prove effective, it may be necessary to administer mild laxatives, such as liquid petrolatum, magma magnesiae or cascara sagrada. If no evacuation of the bowels has taken place during the previous twenty-four hours, an enema should be administered at bedtime.

*Care of the Breasts.*—During the latter months of pregnancy, a small amount of clear fluid is secreted by the breasts. Toward the end of pregnancy, and for the first few days after labor, colostrum is secreted. By the third or fourth day the character of the secretion is changed so that it resembles the later milk in both its physical and its chemical properties. The specific factor or factors which stimulate milk secretion are as yet unknown, but it is not unlikely that it may be in the nature of an enzyme. Two important results follow continued stimulation of the breasts by the infant: (1) contraction and involution of the uterus, and (2) increased secretion of breast milk. In the average breast, feeble stimulation results in a minimal milk supply, while stimulation by a strong infant or regular expression will be followed by a supply varying directly with the demand made on the breasts.

In the presence of small nipples, slight traction night and morning during the last months of pregnancy has a beneficial effect in lengthening the nipple.

A well established routine should be instituted for the care of the breasts during the period of lactation. To facilitate this, a readily accessible *tray with the necessary utensils* should be provided. This should contain a glass-stoppered bottle with a saturated solution of boric acid, a jar of cotton pledgets on tooth-picks, to be used as applicators for the boric acid, and a graduated glass or beaker. The nipples should be thoroughly washed before and after nursing with a saturated solution of boric acid poured fresh from the bottle for each cleansing, and the surplus thrown away. The boric acid should be applied with the cotton pledgets. The fingers should not come in contact with the nipples, if the child is to nurse directly at the breast. If the nipples are tender, they should be anointed with a sterile mixture of 5 per cent. tincture of benzoin in liquid petrolatum.

In some cases, when the milk first comes in, the breasts may become engorged and painful. Usually this rights itself without difficulty as soon as the relation between the supply and demand is established. During this period of adjustment, besides limiting the fluids taken, the discomfort from engorgement may be relieved by elevating the breasts and keeping them partially under pressure by the use of a supporting breast binder. If a binder is used in time and the mother takes little fluid in her diet for a few days, it is rarely necessary to empty the breast by expression or with a breast pump. If left alone, mild cases of caked breast will disappear without treatment. Unnecessary handling of the breasts should be avoided. Besides limiting the fluid intake, laxatives are indicated. The vegetable cathartics are less likely to pass into the milk than are the salines. An icebag applied externally

to a thin binder often will be of assistance. If the cold application produces discomfort, as occasionally it does, hot boric dressings protected by oiled silk may be used. These should be repeated at hourly intervals. The infant should be put to the breast regularly.

*Fissures.*—These offer serious difficulties to nursing because of pain and the danger of mastitis. Nursing through a nipple shield should be tried in order to minimize the danger of infection. When the infant cannot or will not use the shield, expression should be practiced. Failure to empty the breasts by these methods may make it necessary to risk the danger of infecting the breasts by allowing the infant to nurse directly from the breasts. When a nipple shield is used, it is imperative that it be cleaned thoroughly after nursing and reboiled before using. Among the best local applications are silver nitrate solution, 5 per cent., followed by an ointment, such as balsam of Peru, 1 part, and castor oil, 30 parts; or silver nitrate, 1 part, balsam of Peru, 2 parts, and sufficient petrolatum to make 30 parts.

*Mastitis.*—This is of frequent occurrence, even during the week following delivery, manifesting itself by headache and circumscribed pains in the mammary gland. The disease is usually confined to one of the lower quadrants. Tenderness, swelling, surface reddening and hard nodular points follow. The course of these mastitides, most of them parenchymatous, is favorable.

Much more serious are those cases which occur later, usually about three weeks after delivery. They begin more violently, with high fever, headache, vomiting, reddening of the skin and tumor formation which is painful to pressure. The pain is exhibited both at the seat of the trouble and in the axilla. With improper treatment, abscess formation quickly occurs and is often followed by repetitional relapses. In these cases we have often to deal with an interstitial mastitis.

Great care should be taken in differentiating between a simple engorgement (caked breast) and mastitis. As in the former, there is every indication for keeping the child at the breasts, in order that they may be emptied at regular intervals. Further indications for treatment in caked breast are met by a dry diet and purgation. When a diagnosis of mastitis is established, the infant should be removed from the breast and a tight binder applied. Two large icebags should be applied to each breast, kept half full so that they may not be too heavy. The binder should be thin, so that the icebags are not separated from the skin by enough cloth to prevent the cold from reaching the gland. The skin must feel cold to the touch; otherwise, no good will be derived from the ice. A saline cathartic may be given, and the liquids in the diet are restricted. The icebags may be removed one at a time after the patient has had a normal temperature for twelve hours. The infant is put back to the breast twenty-four hours after the temperature becomes normal.

If an abscess develops, the pus should be evacuated through radiating incisions. Even in the presence of abscess formations it is only exceptionally necessary to wean the infant. Usually by the end of the first week, even though the wound is still open and draining, the infant can be returned to the breast, after the first milk at each nursing is expressed and discarded. This will be found to have a favorable influence on healing. In most cases the breast function is soon reestablished.

(To be continued)



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SATURDAY, JANUARY 6, 1923

## DEATHS OF PHYSICIANS IN 1922

During 1922, the deaths of 2,513 physicians in the United States were recorded in THE JOURNAL. Adding 3 per cent. to this number on account of delayed reports and possible omissions, we estimate the total number of deaths as 2,588. On an estimate of 146,000 physicians in the United States, this is equivalent to an annual death rate of 17.73 per thousand. The average annual mortality rate for the period from 1902 to 1922, inclusive, was 15.52.

*Ages.*—Of the 2,480 decedents whose age was stated, thirty-one were under 30; 149 between 31 and 40; 360 between 41 and 50; 536 between 51 and 60; 661 between 61 and 70; 531 between 71 and 80; 177 between 81 and 90, and thirty-five between 91 and 100. The greatest number of deaths for a given age occurred at 66 years, at which age eighty-eight deaths were noted.

*Causes of Death.*—Of the 2,449 known causes of death, 509 were diseases of the heart and circulatory system. General diseases accounted for 344 deaths; of these, 154 were from carcinoma and sarcoma, 44 from diabetes mellitus, 39 from septicemia, 37 from tuberculosis, 21 from anemia, 3 from typhoid fever and 46 from other diseases. Cerebral hemorrhage caused 234 deaths; paresis, 31; meningitis, 19; neuritis, 3; epidemic encephalitis, 5, and brain tumors and other diseases of the nervous system, 45. Pneumonia claimed 180 victims; influenza, 19; bronchitis, 5, and other diseases of the respiratory system, 35. Appendicitis caused 36 deaths; acute indigestion, 15; cirrhosis of the liver, 11; strangulated hernia, 10; biliary calculi, 8; gallstones 4, and other diseases of the digestive system, 30. Chronic nephritis accounted for 125; uremia, 38, and other diseases of the genito-urinary system, 18. Various diseases of the bone caused 4 deaths; senility, 456; sequels to operations, 93; and 22 deaths were due to complications not specified.

*Accident and Homicide.*—The causes and distribution of the 125 deaths from accident were: automobile-railway (grade crossing), 23; automobile, 39; firearms, 9; drowning, 7; street cars, 5; poison, roentgen-ray

burns, falls, sleigh, lightning, collapsing roof and electrocution accounted for the remainder. The fifteen homicides were all due to firearms; of these, four physicians were shot by bandits, one by a maniac, and one by a nurse.

*Suicide.*—The fifty-six physicians who ended their lives by suicide selected these methods: firearms, 29; poison, 13; jumping from high places, 3; cutting instruments, 3; drowning, 3; asphyxiation, 2, and strangulation, 3.

*Civil Positions.*—Among the decedents who had held civil positions, one had been state governor; two, United States consuls; 40, members of the state legislature; 29, mayors of cities; 99, members of boards of health; 63, members of boards of education; 12, members of state boards of medical examiners; 6, postmasters; 4, police commissioners; 41, coroners; 4, bank presidents; 96 were veterans of the World War; 116, veterans of the Civil War; 8, missionaries, and 8, clergymen. Two past presidents of the American Medical Association died, four vice presidents, and the secretary; also, twenty-two former presidents of state associations.

## PRESENT STATUS OF "INSULIN"

About one year ago it was announced that Banting and Best, working in the University of Toronto, had succeeded in isolating from the pancreas a substance capable of causing a marked reduction in the percentage of blood sugar and in the excretion of sugar in the urine of diabetic dogs. Since that time marked progress has been made in the clinical study of the preparation, but, unfortunately, uncontrolled newspaper announcements have given misleadingly exaggerated ideas of its possibilities. It is, therefore, well to have from Dr. J. J. R. Macleod, in whose department the work was conducted, an official statement concerning the present status of the use of this substance.<sup>1</sup>

The original preparation prepared by Banting and Best was a saline extract of the residue of the pancreatic tissue remaining some weeks after the ducts had been ligated. It was shown that this active principle is soluble in alcohol, and J. B. Collip succeeded in preparing an extract that is practically protein-free and nonirritant on subcutaneous injection. Although it was possible to prepare the product on a small scale, early attempts to prepare it in quantities met with difficulties. Furthermore, investigations on animals showed that the product when taken in an overdose produces alarming toxic symptoms. This made it desirable in the interest of public safety to withhold general publication of the method of preparation and general distribution of the product until some satisfactory method could be found for preparing it in marketable quantities. The broadcast issuing of products of

1. Macleod, J. J. R.: Insulin and the Steps Taken to Secure an Effective Preparation, *Canad. M. A. J.* 12: 899 (Dec.) 1922.



varying potency would result in contradictory and unsatisfactory results which would delay, if not prevent, an adequate understanding of the value of the substance, and might result in serious consequences.

The investigators have, therefore, applied for patents for their product in Canada, the United States and Great Britain, and have formally tendered the patents, when granted, to the University of Toronto. The university has accepted the trust on the understanding that the patents shall be employed for the sole purpose of safeguarding the production of the substance against commercial exploitation, and to insure the marketing of a standardized product. Dr. Macleod states that "the method by which the university intends to fulfil these conditions is to license approved manufacturers to produce 'Insulin' under the patents subject to their satisfying the university by frequent submission of samples of their product that it is of adequate potency and purity." A royalty will be charged the licensees in order to maintain a testing laboratory, and any surplus income will be used for research. The original investigators receive no monetary return from the sales. In the meantime, several large commercial chemical houses are investigating the problem of producing the substance in large quantities, and a number of physicians conducting clinics in large hospitals are testing the products produced, under controlled conditions. Dr. Macleod states that this collaboration will be continued until there is every reason to believe that a product of standard potency and nontoxicity can be manufactured with certainty. From the present indications it is hoped that the experimental period will be ended some time during the first half of 1923.

As to the clinical use of the product, it is the belief of Dr. Macleod that it will probably never entirely replace careful dietary regulation, but that it is of undoubted value in assisting the weakened power to metabolize carbohydrate. The preparation, as made at present, must be given subcutaneously, usually in 2 or 3 c.c. doses twice daily; it is hoped that other methods of administration may soon be discovered.

These investigators and the university with which they are affiliated are to be congratulated on the methods they have adopted for controlling the production and the marketing of a product which holds large therapeutic promise. Such an investigation as they have outlined and are undertaking should be sufficient to show not only its value in the treatment of this hitherto very difficultly controlled disease, but also its limitations. It is to be hoped that when the investigations are finally completed the directors will also insist on controlling the advertising claims and methods of marketing, the fields in which the greatest abuses have crept in heretofore in connection with other proprietary substances. The conservative and scientific methods that have so far characterized the development of this new agent warrant the belief that the therapeutic claims will be so controlled.

#### THE DISAPPOINTMENTS OF HEXAMETHYLENAMIN

Hexamethylenamin, first introduced under various proprietary names, has at length joined the large and growing group of drugs of which much has been expected and still more promised in a therapeutic way, but which have failed to justify the hopes of their champions. It cannot be said that too little time has elapsed to permit a correct evaluation of the claims for hexamethylenamin, since a quarter of a century or more has intervened since the earliest announcement of its possible therapeutic significance. The drug owes its action entirely to the liberation of the antiseptic formaldehyd, a reaction now known to occur only in acid solutions. Hexamethylenamin itself is not actively antiseptic. The use to which it is still devoted with apparent scientific justification is in preventing the growth of micro-organisms in the urinary tract, and in destroying them when they are present in the urine during infectious diseases, such as typhoid fever. The drug is recommended as an antiseptic in cystitis, and as a prophylactic prior to operations on the urinary tract. In any event, its possible efficacy depends on the elimination of the drug through the kidneys with a urine that remains distinctly acid in reaction; otherwise, no benefit is to be expected. Such acidity may often be insured by simultaneous administration of substances like acid phosphates, which promote the secretion of an acid urine.

As it has been shown that antiseptic effects cannot occur in the body tissues and fluids that have a neutral or slightly alkaline reaction,<sup>1</sup> the hope that hexamethylenamin might function to destroy dangerous germs within the tissues themselves has been shattered. Contrary to what was at one time proposed, it has no material antiseptic value in the cerebrospinal fluid during spinal meningitis. Hexamethylenamin has been recommended as a solvent for uric acid, and has met the fate of most of its competitors for favor in the attempted execution of an almost impossible task.

And now it has been shorn of another reputed property, that of diuretic potency, by the studies of Ruh and Hanzlik.<sup>2</sup> These involved careful measurements of intake and output of fluid, not mere bedside guesses. Hexamethylenamin, whether used in small or in larger doses, is not a diuretic. The duration of the excretion of hexamethylenamin in the urine ranged from twenty-four to forty-one hours, being somewhat longer with larger doses used, but independent of fluid intake and diuresis. This, too, is contrary to current conceptions.

To complete the story of failure, it may be added that hexamethylenamin is said to be liable to produce

1. Hanzlik, P. J., and Collins, R. J.: Hexamethylenamin, *Arch. Int. Med.* **12**: 578 (Nov.) 1913. Hanzlik, P. J.: The Liberation of Formaldehyd from Hexamethylenamin in Pathologic Fluids, *J. A. M. A.* **72**: 295 (Jan. 24) 1914.

2. Ruh, H. O., and Hanzlik, P. J.: Hexamethylenamin as a Diuretic, *J. A. M. A.* **79**: 1980 (Dec. 8) 1922.



renal irritation when the dosage is unduly large or its use protracted. The trade names under which the drug has been widely advertised are numerous. Various compounds of the substance also have been added in recent years to the list to be exploited. They simply possess the actions of hexamethylenamin and the salts of the acid with which it may be combined.<sup>3</sup> The long story of this drug, lauded alike legitimately and fraudulently, filled with promise by the facile pen of advertising writers, and stripped of much of this vaunted glory by the tests of critical investigators, should be a wholesome lesson to those in whom great expectations are easily awakened. It is a lesson often repeated in the history of therapeutics—and the drug business.

#### INFANT MORTALITY IN RELATION TO INFANT FEEDING

Medical science is something more than a reconstructive force that heals the sick; it has become prophylactic in the broadest sense. The medical profession must watch the public health and protect it against unexpected attack or other avertible disaster; it must also teach the nation how best to rear the generation that is next to bear the burden. Viewed from the momentous consequences entailed by such a program, it is obvious that the information imparted should be sound—unbiased in its formulation and defensible in its precepts. There is a widespread belief that the simplest and at the same time the best way to feed an infant is to nurse it. "Happy the baby who enjoys his inalienable right to Nature's food supply—his own mother's milk," writes Mrs. Rose.<sup>4</sup> "His chances of a long and healthy life are immensely greater than those of the poor child who has to be artificially fed. In case of misfortune depriving him of his natural food supply, the best substitute is the milk of some other healthy woman with a baby of approximately the same age, but unfortunately this kind of substitute is not readily commanded by the average family."

If such pronouncements are to be made the basis of a nation-wide or even internationally applicable "appeal to reason," they must be based on incontrovertible facts rather than the traditions of the textbook writers. Usually, statistics of infant mortality are called on to substantiate the claim for the pronounced superiority of breast feeding. It has often been pointed out, however, that the artificial feeding of infants may be accompanied by unfavorable environmental conditions among the less well-to-do, and that a variety of such factors need to be evaluated carefully before any indisputable generalizations about diet alone are made.

Furthermore, many of the statistical data belong to earlier times, when living conditions among the families in which artificial feeding of infants prevailed were less

satisfactory than today, and when the science of nutrition had not begun to make itself felt as a factor in the welfare of all classes. The place assumed by food regulating agencies in many countries during the World War attests the new era.<sup>5</sup> Has the newer knowledge served sufficiently to change current food habits and practices and thus to make the older views untenable in their application to present day conditions? The importance of up-to-date information is emphasized in a still different way by a recent statement of the director<sup>6</sup> of statistical research in the Children's Bureau, U. S. Department of Labor, insisting that, in view of the importance of the subject, statistical evidence of the relative influence of artificial and breast feeding on infant mortality seems surprisingly meager. According to this government expert, most of the data that are available relate to foreign cities or districts where special censuses of the kind of feeding received by the infant population have been taken and used in connection with records of the kind of feeding received by infants who died, or where other types of special inquiries have been made to ascertain the type of feeding prevailing.

The Children's Bureau has obtained information, soon to be issued in detail, regarding the influence of feeding on the mortality of more than 22,000 live born infants in eight representative cities of the eastern United States. The records extend from birth to the first birthday. They show that artificial feeding, as actually practiced in typical American city populations, is associated with a mortality between three and four times as high as the mortality among breast-fed infants. According to Woodbury,<sup>6</sup> this outcome is not to be explained either by the slight overweighting of the group of artificially fed infants, with infants in certain groups characterized by high mortality rates; and it appears in all nationality and in all earnings groups, though with variations depending probably on the particular conditions prevailing in the groups. Such facts are telling, and they give added support to current teachings of the continued importance of breast feeding. It is instructive and impressive to learn that, restricting the figures to the first nine months of life, during which the type of feeding is of greater importance than in the last three months of the first year, of the 192,212 months lived by the infants studied, 57 per cent. were lived by those while breast fed, 18 per cent. while partly breast fed, and 25 per cent. while artificially fed. Or, again, during the first nine months, 870 deaths of artificially fed infants occurred, as compared with only 181 that would have been expected at the rate of mortality prevailing among the breast-fed infants.

As an aid to the solution of these problems, THE JOURNAL begins, in this issue, a series of articles on

3. Hexamethylenamine and Hexamethylenamine Compounds, New and Nonofficial Remedies, 1922, p. 131.

4. Rose, Mary S.: Feeding the Family, New York, the Macmillan Company, 1916, p. 98.

5. Food and the War: U. S. Food Administration, Houghton, Mifflin Company, 1918.

6. Woodbury, R. M.: The Relation Between Breast and Artificial Feeding and Infant Mortality, Am. J. Hyg. 2: 668 (Nov.) 1922.



"The Care and Feeding of Infants." The series is addressed particularly to the general practitioner, and it is hoped that it will be of service in rendering advice regarding feeding problems in infancy. The great value of breast feeding is proved; but such trenchant facts as have been cited should not lead to pessimism in infant nutrition. No one can defend the position that science cannot greatly improve the artificial feeding of infants if it cannot actually provide the equivalent of the secretion of the human mammary gland. Science must strive to equal the perfections as well as to correct the imperfections of Nature.

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### Current Comment

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#### GENERAL REACTIONS FOLLOWING TRANSFUSION OF BLOOD

After the transfusion of blood, unfavorable general reactions may arise, sometimes apparently in spite of the fact that preliminary tests have shown that the blood of the donor and that of the recipient are compatible. The results of recent experiments by Dyke,<sup>1</sup> who studied the iso-agglutinative power of human serum by comparative methods, may help to explain why such unfavorable reactions sometimes ensue. Dyke found that the serum of Group 1 according to the Jansky classification may vary not only in iso-agglutinative strength in different persons but also in the same person at different times; furthermore, that the corpuscles from different persons of Group 4 may vary in their agglutinability by the serums of Groups 1, 2 and 3; hence corpuscles of Group 4 may be placed wrongly, especially in cases in which the agglutinating power of the serum for Groups 2 and 3 is low, and Dyke suggests that only those serums of Groups 2 and 3 should be used for testing that are able to cause definite agglutination when diluted 1:10. According to Levine and Segall,<sup>2</sup> prolonged etherization may cause a temporary change in iso-agglutinative phenomena. In three cases the serum of patients, previously compatible by direct tests with the blood of prospective donors, was found to agglutinate the corpuscles of the donors in question, the most likely cause for this change being a prolonged ether anesthesia in each case. This change in agglutination was only temporary, but the observation, which should be extended, suggests that ether, being a lipoid solvent, may change the state of the blood in such a way as to modify the action of the iso-agglutinins present. Ottenberg<sup>3</sup> points out that a source of error in testing for blood compatibility is using deteriorated or weak serums, and that all tests should be made in duplicate with active test serums. In all cases of doubt both serum and cells of the patient should be tested. It will be recalled that some time ago a special committee, appointed by the American Association of Immunologists, the Society of

American Bacteriologists, and the Association of Pathologists and Bacteriologists, recommended that the Jansky classification of persons according to iso-hemagglutination be adopted generally, in order to avoid the confusion and the possibility of accident due to the use of both the Jansky and the Moss classifications.<sup>4</sup> Confusion, with serious results, is almost certain to occur when prospective donors are grouped now according to the one particular classification, now according to another. The growth of a special class of persons who offer their services as professional donors, and who may travel about and announce themselves as belonging to this or that group, undoubtedly may prove a source of danger unless the grouping claimed is verified with special care. All danger from such sources will be removed by the adoption everywhere of the Jansky grouping.

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#### MILD SMALLPOX (?)

On more than one occasion, recently, THE JOURNAL has drawn attention to the virulent trend of smallpox. The situation cannot be overemphasized, in view of the recent experience of Denver. That the remotest community is not immune, and that the cloak of mildness may hide for a time the real nature of the disease already present, is exemplified in the report of the county health officer of Biloxi, Miss., noted in *Public Health Reports*, Dec. 29, 1922:

We have had nine cases of chickenpox reported. Chickenpox makes us think of smallpox, so I went to investigate and located a genuine case, confluent in type, resulting fatally. The victim, Dr. Fetters, a chiropractor, of Biloxi, recently from Denver, had never been vaccinated. Biloxi has had a number of mild cases of smallpox during the past few years, and some citizens are not being vaccinated as they should. A few cases like the one mentioned above would help to persuade them of the effectiveness and necessity of vaccination.

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#### NEW REGULATIONS ON MARKETING OF MEDICINAL WHISKY

Bottled-in-bond whisky will from now on gradually replace bulk whisky for medicinal use, under a decision recently issued by the Commissioner of Internal Revenue (see page 44 of this issue). This decision is the outcome of the resolution adopted by the House of Delegates in St. Louis, last May, recommending that provision be made for the marketing of whisky in bottled-in-bond containers, so that physicians who prescribe whisky may have some assurance that their patients will receive the genuine article. Throughout the conferences that have been carried on, the officers of the Association have met with cordial cooperation on the part of government officials. All agreed that, so far as it is necessary to use whisky for medicinal purposes, the supply should be of known purity. In the absence of any legal standard of purity, except that provided by the Bottled-in-Bond Act, it was generally conceded that any provision whereby bottled-in-bond whisky would be made available for medicinal uses to the patient in original sealed containers would go a

1. Dyke, S. C.: On Isohemagglutination, *Brit. J. Exper. Path.* **3**: 146 (June) 1922.

2. Levine, E. C., and Segall, H. N.: *Surg., Gynec. & Obst.* **35**: 313 (Sept.) 1922.

3. Ottenberg, Reuben: *Medicolegal Application of Human Blood Grouping*, J. A. M. A. **79**: 2137 (Dec. 23) 1922.

4. Isohemagglutination: Recommendation that the Jansky Classification Be Adopted for Universal Use, J. A. M. A. **76**: 130 (Jan. 8) 1921.



long way toward solving the problem. One difficulty has been to find some way in which this could be done; that difficulty has been largely overcome in the decision just issued.

#### THE CLEVELAND HOSPITAL AND HEALTH SURVEY, TWO YEARS AFTER

Nearly two years ago, THE JOURNAL<sup>1</sup> congratulated the city of Cleveland for submitting to a complete physical examination from a health point of view, and for a frank report of the findings. It was predicted that this would result in great saving of life, and in increased health and happiness; and that this has been the case is indicated in the recent report<sup>2</sup> of the hospital council. The hospital and health survey was begun in November, 1919. It is not claimed that all of the health improvements which have occurred should be credited to the survey, but credit seems due it for certain definite and far-reaching results: The sanitary code of the city, which had been under consideration for a number of years before the survey was made, has since become a law. The reorganization of the hospitals of the city and of the city hospital training school for nurses should be in part, at least, attributed to the survey, as should also the city hospital bond issue.

#### THE BUFF SUBSCRIPTION BLANK

Following the insertion of a special subscription blank in THE JOURNAL a few weeks ago, numerous subscribers availed themselves of the opportunity to aid the Association in the problem of securing the annual subscription and fellowship dues without sending special bills. At the same time numerous Fellows of the Association added to the check for THE JOURNAL subscription a subscription to *Hygeia*, the new publication on individual and community health to be issued by the Association in March. Since the blank inserted several weeks ago may have been overlooked, a new blank is inserted in this issue. The saving to the Association in postage and in clerical work is a considerable one and represents additional work which the Association is able to perform for its Fellows and subscribers, as well as for the public. Every Fellow who is personally interested in the progress of the Association may aid by availing himself of the opportunity to remit, using this blank.

1. The Cleveland Hospital and Health Survey, Current Comment, J. A. M. A. 76: 383 (Feb. 5) 1921.

2. The Cleveland Hospital and Health Survey, Two Years After, Cleveland, the Cleveland Hospital Council, 1921-1922.

**Economic Loss from Disease.**—Considering the economic loss due to a single disease, it is estimated that in 1922 the loss from tuberculosis will be \$521,000,000. In addition, we shall pay for the care of the tuberculous a total of \$663,000,000 or \$6 for every man, woman and child in the United States. If there was no tuberculosis, the average life of Americans would be lengthened two and a half years, and the consequent gain in the next fifty years would be \$27,000,000,000, or more than our total national debt. Experts say we can wipe out tuberculosis. Add to this the gain from the eradication of other preventable diseases, and the amount becomes stupendous.—Palmer, *Collier's Weekly*.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**Dengue in Montgomery.**—According to official statistics, 129 cases of dengue were reported up to December 15. No deaths have occurred, and while some cases were reported early in December, the disease is gradually subsiding.

**County Elections.**—Drs. Charles E. Ford and William W. Stevenson were elected president and secretary-treasurer, respectively, of the Randolph County Medical Association at Roanoke, December 14.—At the annual meeting of the Shelby County Medical Society, Dr. Claudius O. Lawrence was elected president and Dr. Willena Peck, secretary-treasurer.—Dr. John C. Bragg, Albany, was recently elected president of the Morgan County Medical Society.

### ARKANSAS

**Personal.**—The Sebastian County Medical Society elected the following officers for the ensuing year: Drs. Willis F. Rose, Fort Smith, president; Walter G. Eberle, Fort Smith, vice president; Hardy H. Smith, Fort Smith, treasurer, and Jefferson D. Southard, Fort Smith, secretary.—Dr. Leonidas Kirby, Harrison, was recently elected president of the state board of health.—Dr. Erasmus S. Baker and Dr. Felix M. Scott were recently elected president and secretary-treasurer, respectively, of the Green County Medical Society.

### CALIFORNIA

**Recent Election Summarized.**—Following are the results of the vote on medical measures in the recent state election: antivivisection, 226,339, for; 514,783, against; chiropractic measure, 481,000, for; 327,849, against; osteopathic measure, 439,775, for; 327,819, against.

### COLORADO

**Smallpox and Vaccination in Denver.**—The department of health and charity of Denver has issued a leaflet giving information regarding the outbreak of smallpox in that city. During the thirteen month period from Nov. 1, 1921, to Nov. 30, 1922, the cases of smallpox numbered 854, with 263 deaths. The leaflet contains the names of all those who died during September, October and November, 1922. In the fatal cases, 240 patients had not been vaccinated, and twenty-three had been vaccinated. Analyzing the vaccination histories available of those who had been vaccinated before contracting the disease, it was found that thirty-eight years was the average time which had elapsed between vaccination and contracting the disease. More than one half were vaccinated more than thirty-five years before the disease was contracted; 75 per cent. were vaccinated more than twenty-five years before, and 90 per cent. more than fifteen years before. In three cases, seven years had elapsed since vaccination, and one patient had been vaccinated five years before. These data, says *Public Health Reports*, Dec. 22, 1922, emphasize the fact that vaccination and revaccination are the most effective means for the control of smallpox, but they remind us that one vaccination does not (in all cases) protect the individual throughout his entire lifetime.

### CONNECTICUT

**University News.**—Yandell Henderson, Ph.D., professor of applied physiology at Yale University, has been elected an honorary member of the Coal Mining Institute of America in recognition of his contributions to resuscitation from mine gases.

**Public Health Association Meets.**—The annual meeting of the Connecticut Public Health Association will be held at the Hotel Garde, New Haven, at 11 o'clock, January 10. The subjects to be discussed are: the vaccination laws of Connecticut and the present danger of smallpox; the need of branch state diagnostic laboratories, and the present law governing the medical inspection of schoolchildren.



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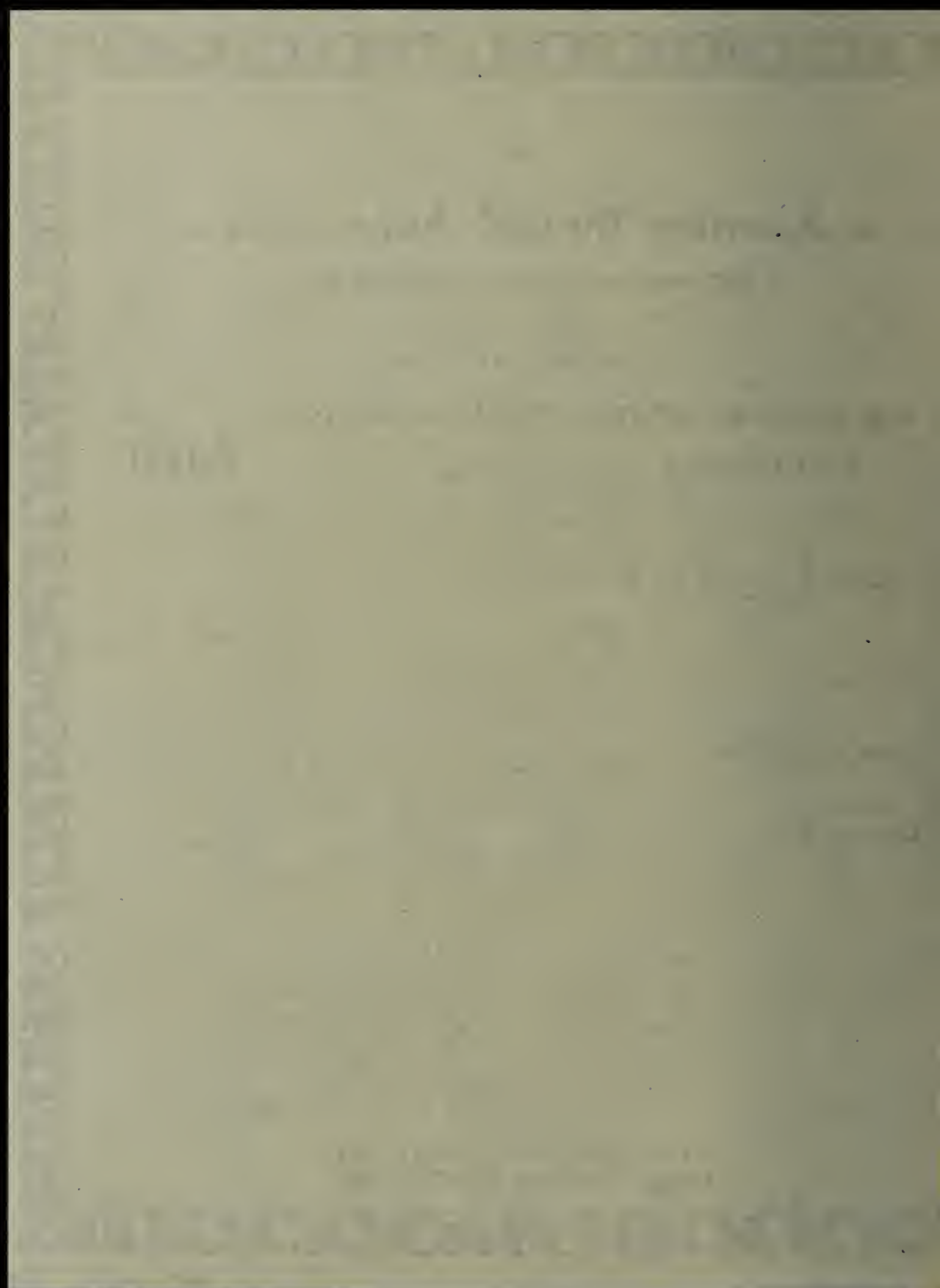
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## FLORIDA

**Mosquito Survey at St. Augustine.**—The state board of health has started a mosquito survey of St. Augustine. Assistance was given by the local troop of Boy Scouts, who made a house to house canvass with questionnaires which concerned the mosquito problem and general sanitary conditions.

## GEORGIA

**Wesley Memorial Hospital Opened.**—The new Wesley Memorial Hospital, erected by the Southern Methodists on the campus of Emory University, Atlanta, was formally opened with appropriate exercises, December 1. It is a six story, stucco building and has an initial capacity of 200 beds. The Lucy Elizabeth Candler Memorial Hospital is connected with the main building and contains sixty-five beds divided between the children's hospital and the maternity pavilion. Walker White, former treasurer of the university, is superintendent and secretary of the institution.

## ILLINOIS

**Physician Acquitted.**—Dr. Albert Willis, Christopher, was acquitted of the charge of having caused the death of Miss Mary Shifflett of Leroy, it is reported.

**Personal.**—Dr. Franklin A. Turner has been appointed director of hygiene of the Rockford public schools to succeed Dr. Dudley W. Day, who has resigned.

**Diphtheria Increases.**—It is reported that 180 cases of diphtheria were reported to the state board of health the first week in September, and the first week in October showed 340 cases. The first week of December, the total number amounted to 480.

**Smallpox at New Lenox.**—An outbreak of fifteen cases of smallpox at New Lenox in Will County was reported by a district health superintendent to the state department of public health, December 30. The cases were of a mild type and no effective quarantine had been established prior to the investigation by the district health superintendent.

**Medical Society Elects Officers.**—At the annual meeting of the Kane County Medical Society, at which Dr. Bertram W. Sippy gave an address on the treatment of gastric ulcer, the following officers were elected for 1923: Dr. Herman A. Brennecke, Aurora, president; Dr. Emmett L. Lee, Aurora, vice president, and Dr. Lawrence J. Hughes, secretary-treasurer.

**Rabbits Have Hemorrhagic Septicemia.**—A district health superintendent attached to the state department of public health, and a hygienic laboratory expert attached to the U. S. Public Health Service, have completed an investigation of the cause of a deadly infection which has recently spread among rabbits in the southern part of the state. Their report says that the rabbits are suffering from hemorrhagic septicemia.

**Physician Fined.**—It is reported that Dr. Carl A. Starck of Palatine was fined \$200 and costs for violating quarantine regulations. The specific charge against Dr. Starck was for terminating the quarantine of a diphtheria patient on his own initiative, without reference to local health authorities and in violation of the state regulations. The charges, which were the second of the kind within sixty days, were brought at the request of field men attached to the state department of public health.

**Diagnostic Laboratory Work Expanding.**—During November, 1922, a new monthly high record of tests was again established by the diagnostic laboratory of the state health department. The main laboratory made nearly 14,000 examinations, an increase of about 40 per cent. over those made in November, 1921. Most of this increase was in diphtheria examinations, although there was a smaller number of diphtheria cases reported from the state this year than last. One of the factors responsible for the increase in examinations is the greater number of cultures being taken before release from quarantine. This has been brought about through the activities of the district health superintendents and other educational agencies.

## Chicago

**Memorial Exercises for Dr. William E. Quine.**—On Wednesday evening, January 10, the regular meeting of the Chicago Medical Society will be devoted to exercises in memory of Dr. William E. Quine. The speakers will include Drs. William A. Pusey, Frank Billings, A. E. Wynekoop, Bishop Hartzell and Mr. John T. Richards. The regular meeting place in the Marshall Field Annex will be used for this occasion.

**New Hospital Building.**—Construction work on the new ten-story building for the Chicago Eye, Ear, Nose and Throat College and Hospital will be started in April, 1923. It will be located on the northeast corner of Market and Randolph streets. The first floor will be leased and the second and third floors will be for clinic and operating rooms. The upper seven floors will contain private rooms for patients. The estimated cost of the structure is \$400,000.

## INDIANA

**Personal.**—Dr. Thomas C. Dodds, Hartford City, was severely injured recently when the automobile in which he was riding was overturned and wrecked.

**Cornerstone Laid.**—The cornerstone for the new nurses' home and administration building at the City Hospital was laid with appropriate ceremonies, December 22. The estimated cost of the completed building is \$425,000.

**Physician Fined.**—Dr. Emmet E. Rose was recently fined \$25 and costs for failure to obey a traffic signal. It is said that Dr. Rose has been arrested three times within as many weeks for alleged violations of traffic ordinances. On the first occasion, he was sentenced to six hours in the city prison for contempt of court.

**Meat Inspection.**—Indianapolis has recently passed an ordinance prohibiting meats which have not been inspected by the city, before and after the killing of the animals, from entering the city. A state meat inspection system by the state board of health is contemplated, in view of the agitation arising since the ordinance was passed.

**A Twelve Hundred Dollar "Cancer Cure."**—The Anderson Bulletin reports that a warrant was issued for the arrest of "Dr." Ralph Williamson, said to be known locally as a "suggesto-therapist." Williamson, it is claimed, is charged with selling (for \$1,200) to a school teacher, "a secret prescription or formula for the cure of tumors and cancer." The complainant asserts that the remedy is of no value.

**New Medical Society Formed.**—At a banquet and meeting of the Northeastern Indiana Medical Society in Kendallville, December 15, a permanent organization of four counties was effected, with Dr. Martin E. Klingler, Garrett, as president; Dr. Harold O. Williams, Kendallville, vice president, and Dr. Amos J. Hostettler, La Grange, secretary-treasurer. Dr. Willis Stanley Gibson, professor of pediatrics, Northwestern University Medical School, Chicago, gave an address on "Diphtheria and the Schick Test."

## IOWA

**Personal.**—Dr. Frank N. Bay of Albia has been appointed county physician by the board of supervisors.

## KANSAS

**Hospital News.**—The Sabetha Hospital, Sabetha, has planned an addition to cost \$100,000.

## LOUISIANA

**Personal.**—Dr. Joseph M. Tolivar, New Orleans, has tendered his resignation from the U. S. Department of Justice, the resignation to be effective January 15.

**Practitioners Sentenced.**—Walter and Joseph Fife, who were tried and convicted at Lake Charles, October 21, of practicing medicine without a license, according to report, were recently sentenced to sixty days in jail.

## MAINE

**Physicians Indicted.**—It is reported that Dr. Frederick W. Tozer of Portland, and Dr. Erwin C. Ruth of Boston, formerly director of the New England division of the narcotic bureau, have been indicted by a federal grand jury on charges of conspiracy to defraud the government.

## MARYLAND

**University News.**—Dr. K. F. Wenckebach, professor of internal medicine at the University of Vienna, will deliver the twelfth course of Herter lectures in pathology at the Johns Hopkins University Medical School. Dr. Wenckebach will arrive in this country in April.

## MASSACHUSETTS

**Personal.**—Col. Walter B. Cannon, M.O.R.C., Cambridge, has been awarded the distinguished service medal "for exceptionally meritorious service as director of physiological



research for the American Expeditionary Forces in France."—Dr. Isolde Zeckwer of Philadelphia has been appointed resident pathologist at the Long Island Hospital, Boston.

**Fine for Practicing Without a License.**—A fine of \$100 on the charge of practicing medicine without a license, in violation of state laws, was imposed on J. Fred Balcourt, Haverhill, when he was arraigned before Judge Winn, it is reported.

**Upholds \$1,500 Verdict in Suit Against Physician.**—The supreme court yesterday decided, according to report, that Miss Georgianna Chesley, a Haverhill school teacher, is to retain the \$1,500 she obtained from an Essex jury in a suit against Dr. Charles E. Durant of Haverhill for leaving rubber tubing in the wound of an operation for appendicitis, performed July 25, 1916.

#### MICHIGAN

**Public Health Lectures.**—The joint committee on public health education has filled more than sixty engagements for public lectures on scientific medicine, recently. It is estimated that about 300 lectures will be given during the coming winter.

**Clubhouse for Medical Society.**—At the annual meeting of the Kent County Medical Society at Grand Rapids, December 13, it was proposed that a clubhouse be erected for the society, to include club rooms, library and amphitheater. A resolution was also passed opposing the removal of the University of Michigan nurses' training school. Dr. R. J. Hutchinson succeeded Dr. Alden Williams as president; Dr. R. C. Bruce was elected vice president, and Dr. Frank C. Kinsey, secretary.

#### MINNESOTA

**Hospital News.**—The Lyman Hurst Hospital, Minneapolis, recently opened a department for the examination of school-children for heart disease. The work is conducted by the board of education and city health department, and Dr. W. F. Reasner and Dr. Max Seham are the physicians in charge of the medical work.—The Mounds Park Sanitarium, St. Paul, announces the completion of a psychopathic department organized for the treatment of the milder psychoses.

**Trachoma Survey.**—Federal and state health officials are uniting in conducting a trachoma survey among the Indian and the white population in the northern section of the state. Trachoma, which is prevalent among the Indians on White Earth Reservation, it is feared may spread to the whites. Following the survey, Dr. A. J. Cesley, executive secretary of the state board of health, and Dr. Taliaferro Clark, U. S. Public Health Service, will outline a program for eradicating the menace, and present it to the state legislature. Numerous delegations in the past have waited on the Indian commissioner and Governor Preus, with the hope of obtaining the discarded hospital buildings on the White Earth Reservation for the use of trachoma victims among Indians, but no action has developed.

#### MISSOURI

**New High School to Commemorate Name of Dr. William Beaumont.**—The board of education of St. Louis adopted, December 12, the recommendation of its instruction committee to name the new high school on Natural Bridge Road in honor of Dr. William Beaumont, who, in addition to his well known services to the science of physiology, served as president of the St. Louis Medical Society in 1841.

#### MONTANA

**Personal.**—Dr. James L. Atkinson of Poplar, while making a professional call and attempting to cross the upper Missouri River, which was frozen, fell off an embankment and was seriously injured.—Dr. Ernest D. Hitchcock of Great Falls has been appointed director of the hygienic laboratory of the state board of health, to succeed the late Dr. Francis A. Coward, who succeeded Dr. Hitchcock in this office, August 1.

#### NEW HAMPSHIRE

**Personal.**—Dr. Samuel T. Ladd was elected mayor of Portsmouth, December 12.

#### NEW YORK

**Personal.**—Dr. Jacob Sobel was appointed a member of the medical advisory board of the board of health at a meeting, Dec. 13, 1922.—Dr. L. Duncan Bulkley has retired from the staff of the New York Skin and Cancer Hospital.

**Fourth Harvey Society Lecture.**—Dr. William T. Bovie, Ph.D., professor of biophysics, Harvard University, will deliver the fourth Harvey Society lecture at the New York Academy of Medicine, January 13. Dr. Bovie's subject will be "The Physiological Effects of Light Rays."

**University of Louvain Honors American Surgeon.**—The editors of the press of the University of Louvain have selected "The Cancer Problem," by Dr. William Seaman Bainbridge, as the first book to appear from the university's reconstructed press. The author brought the book up to date at the editors' request; it was then translated and printed.

**School for Health Nurses.**—Eighteen classes have been started in various parts of the state for the special instruction of public health nurses in the hygiene of maternity. More than 300 nurses are now receiving this instruction, and a considerable number are registered for a second series of classes to be started in the spring. Between now and March 1, 1923, classes in the first series will be held in Albany, Ithaca, Buffalo, Jamestown, Poughkeepsie, Canandaigua, White Plains, Gloversville, Kingston, Utica, Schenectady, Rome and Ogdensburg. The object of the course is to equip nurses with the information necessary in order that they may act as teachers of Mothers' Health Clubs.

**Health Officers Form Clearing House.**—Twenty-five health officers, representing cities and towns of the metropolitan district, met, December 18, at the office of Health Commissioner Copeland, and effected a temporary organization, in order that the metropolitan zone may be guarded by an exchange of information. Dr. Copeland was elected temporary president, and Dr. Louis I. Harris, director of the bureau of preventable disease of the health department, temporary secretary. The next meeting will be held Jan. 25, 1923, during the Health Show. A permanent organization will be effected, the purpose of which will be to unite the health offices in towns and cities in the metropolitan zone, for the purpose of establishing a clearing house of information, and for cooperation in all matters that concern public health.

#### New York City

**Sentenced for Practicing Without License.**—Dr. Fritz H. Hirschland of Flushing, L. I., has been sentenced to the penitentiary for from six months to three years for practicing medicine without a license, it is reported. Dr. Hirschland, who stated that he is a graduate of a German university, pleaded guilty to the charge.

**Hospital Ends Ambulance Service.**—The board of trustees of the Flower Hospital discontinued their public ambulance service, December 31. This action was taken after a conference with Bird S. Coler, commissioner of public welfare, who assured the board that arrangements could be made with other hospitals to take care of the ambulance calls that ordinarily are sent by police to Flower Hospital.

**A Part-Time Service for Physicians.**—The Bureau of Part Time Work, a noncommercial bureau for finding part-time work for the higher grade of women, has just completed its first year. It makes a specialty of supplying physicians' secretaries and nurses, laboratory technicians, clinic assistants and hourly nurses. The centralization of part-time work is a new experiment, financed by a New York philanthropist, and seems to fill a definite need. The headquarters of the bureau are at 105 East Fortieth Street.

**Students' Health Association Meets.**—The third annual meeting of the American Students' Health Association was held at Columbia University, December 28 and 29. The association represents fifty institutions of higher learning in the United States, and is interested in improving methods of teaching hygiene because "Society's investment in the relatively small number of men who reach college is too great to be wasted in educating individuals not physically equipped to meet the world after leaving college." Dr. John Sundwall of the University of Michigan, in addressing the meeting, said "The college course in hygiene should aim to instill an impelling desire in the student for physical efficiency, to acquaint him with the means of such efficiency, and to make him feel his responsibility to himself and the community in maintaining it." Dr. J. C. Raycroft of Princeton University was reelected president of the association.

**Supervision of Commercial Laboratories.**—The committee on civic policy of the Medical Society of the County of New York has formulated recommendations for the supervision of commercial laboratories. These recommendations require that a commercial laboratory be directed by a physician and serve the profession only. They shall make no division of



fees and give no rebates. They shall not advertise a consulting staff unless that staff actually does the work of the laboratory. In advertising, they shall publish a list of their fees and submit to the committee on civic policy of the Medical Society of the County of New York a list of their personnel. They shall conform to the standards of work set forth by authoritative bodies and shall comply with the public health law as regards equipment, and reports. The committee further recommends that such laboratories as comply with these requirements be granted a certificate testifying thereto, so that the profession may have a guarantee of expert and ethical service, and the laboratory an incentive to furnish it.

**Committee Reports on Cornell Pay Clinic.**—A committee composed of representatives of the New York County Medical Society, the Eastern Medical Society, the New York Physicians' Association, the Yorkville Medical Society and the Harlem Medical Society, appointed to make an investigation of the Cornell Pay Clinic recently, made a report through the committee on civic policy of the Medical Society of the County of New York. Among the outstanding features of the report are the following: The committee believes that a better mutual understanding between the Cornell Pay Clinic and the profession is in process of formation. A multiplication of clinics on the style of the Cornell Pay Clinic would work to the disadvantage of both the practitioner and the specialist. The Cornell Clinic, for example, had 114,108 visits in one year; of these 22,536 were new cases. The cost of treating these patients was \$232,875.40. The majority of the patients were clerks, teachers, city employees and artisans. From this, it would seem that the clinic is doing unnecessary semicharity or modified charity work for patients who can as well be taken care of by the physicians at large without charity. The committee suggests that pay clinics be limited to the care of cases referred by practitioners for special diagnosis and consultation. All other cases, especially those of disgruntled or dissatisfied patients, or persons who are unacquainted with competent physicians within their economic needs, should be referred to the nearest hospital or clinic to secure the name and fee of a physician. A more cumbersome method consists in the organization of a reference bureau. The committee expresses the opinion that the group practice idea is on the wane and that there are signs of the rehabilitation of individualism in medicine.

#### NORTH CAROLINA

**Personal.**—Dr. Carl H. Verner has resigned the office of county health officer of Craven County, effective January 1.

**Hospital News.**—Work will be started at once on a new city hospital at Gastonia. The building will be erected on the highest point of land in the city on North Highland Street, and will cost \$103,000.

**Schools Closed Because of Influenza.**—The City Council of Hickory ordered the schools closed, about December 5, on account of the prevalence of influenza. There were about 127 cases in the schools for white children, and it was said the situation in the colored schools was worse. The disease was in a mild form, and it was expected the schools would reopen in a few days.

**Charges Against Physician Withdrawn.**—Charges, which have been pending since last June, of violation of the Harrison Narcotic Law, against Dr. John R. Lowery, have been removed from the docket of the federal court. Three of the government's witnesses failed to appear, and it is said the judge stated that, in view of the circumstances, the ends of justice would be met by taking a nolle pros with leave, the district attorney agreeing to that course.

#### NORTH DAKOTA

**Personal.**—Dr. Louisa E. Boutelle, Grand Forks, has been appointed a member of the state board of health.

#### OHIO

**Hospital News.**—The St. Francis Hospital at Columbus has obtained ground for the erection of a five-story addition.

**Physician Loses Appeal.**—The court of appeals in the case of the state against Dr. Joseph J. Boone of Mount Victory, who was convicted in the mayor's court of violation of the Crabbe Law, reversed the finding of the common pleas court, which had reversed the finding of the mayor's court, it is reported. This decision remands the case to the mayor's court for execution.

#### PENNSYLVANIA

##### Philadelphia

**Dr. Penniman Succeeds General Wood.**—The trustees of the University of Pennsylvania have elected Dr. Josiah H. Penniman, who has been acting provost during the absence of Dr. Leonard Wood in the Philippines, as provost of the university. General Wood will remain in Manila.

**Dr. Hawk No Longer with Jefferson Medical College.**—Under date of December 26, the dean of Jefferson Medical College of Philadelphia announced that Dr. Philip B. Hawk was no longer connected with that institution either as professor of physiologic chemistry or in any other capacity.

**College of Physicians Elect.**—The section on general medicine of the College of Physicians of Philadelphia elected the following officers for 1923: Dr. Herman B. Allyn, chairman, and Dr. Edward J. G. Beardsley, clerk. The executive committee of the section, as appointed by the president of the college, consists of Dr. David Hiesman, chairman, Oliver H. Perry Pepper and Dr. John H. Musser, Jr.

#### SOUTH CAROLINA

**Smallpox.**—Dr. Augustus H. Hayden, state epidemiologist, recently conducted an investigation of the smallpox situation in Orangeburg County, where, it is said, he found forty cases in the Providence community.

**Influenza Epidemic.**—Influenza appeared in epidemic form early in December, and rapidly spread throughout the state. A total of 1,176 cases, with sixteen deaths from influenza and pneumonia, had been reported in the city of Columbia up to December 15, on which date a marked improvement in the situation was reported by the state health department.

**Drastic Measure Proposed to Eradicate Rabies.**—Compulsory inoculation of all dogs in the state has been approved by the state board of health; and announcement has been made that a bill covering this requirement will be prepared for introduction in the next general assembly. Three persons have died from rabies this year, and 725 have taken the Pasteur treatment.

**Rural Health Work.**—The annual report of the officer in charge of rural sanitation and county health work of the state board of health indicates that interest among the rural citizens in this work is increasing. This department conducted 13,155 examinations of schoolchildren in 1922; of this number, 6,951 had physical defects, and of the latter number 2,341 had the defects remedied. There were 31,351 typhoid inoculations; 5,181 children under 10 years of age were immunized against diphtheria, and 403 Pasteur treatments were administered.

#### TENNESSEE

**Personal.**—Dr. George T. Wilhelm, Memphis, has been appointed director of the department of hygiene and students' health service of the University of Tennessee.

**Physician Gets Mistrial.**—Having secured a reversal in the court of civil appeals following his conviction and sentence to the penitentiary in the federal district court in 1920, Dr. Lemuel B. McWhorter was given a second trial, December 5, which ended in a mistrial, owing, it is said, to a remark by a juror that Dr. McWhorter had made a fortune in the drug business. A third trial will probably take place in January or February.

**Grand Jury Fails to Indict Physician.**—The grand jury refused to indict Dr. Woodruff A. Banks, Chattanooga, who, it was reported, was charged with performing a criminal operation. Dr. Banks' conduct was recently under investigation by the local medical society, and the investigating committee reported him guilty of unethical conduct. However, Dr. Banks, after a vote by the society, was permitted to retain his membership.

#### TEXAS

**Personal.**—At a recent meeting of the Dallas County Medical Society, the following officers were elected: Dr. C. M. Rosser, president; Dr. Franklin A. Pierce, vice president, and Dr. William West Fowler, secretary.—Dr. William T. Largent, McKinney, has been reappointed health officer of Collin County for the third term.

**North Texas Medical Association Elects Officers.**—At the eighty-fourth semiannual meeting of the North Texas Medical Association, held recently in Dallas, the following officers were elected: Dr. Murphy M. Morrison, Denison, president; Dr. David M. Higgins, Gainesville, vice president, and Dr.



William S. Horn, Fort Worth, secretary-treasurer. The next meeting will be held in the spring, at Bonham.

#### UTAH

**Personal.**—Dr. Wilford W. Barber has been appointed director of the bureau of child hygiene of the state board of health.

#### VIRGINIA

**Virginia Society of Oto-Laryngology and Ophthalmology.**—At the annual meeting of the society in Norfolk, in November, the following officers were elected for the ensuing year: president, Dr. Elbyrne G. Gill, Roanoke; vice president, Dr. Joseph A. White, Richmond, and secretary-treasurer, Dr. Emanuel U. Wallerstein, Richmond. Hereafter, meetings will be held once a year. The next is scheduled for April, 1923, at Richmond.

**Bronze Bust of Dr. Hunter McGuire.**—A bronze bust of Dr. Hunter H. McGuire was recently presented to the medical College of Virginia by members of the family. Dr. McGuire, who was president of the American Medical Association in 1893, founded the University of Virginia College of Medicine, and was president of the college and chief surgeon of the army of northern Virginia during the Civil War. The bust, which was made by Dr. John W. Brodnax, associate professor of anatomy at the medical college, was presented with fitting ceremonies.

#### WEST VIRGINIA

**Measles Epidemic.**—There were eighty-one cases of measles in Wheeling, December 15, sixty-two in Warwood, and the others scattered over the remainder of the city. It is said that the spread of the disease has been checked.

#### WISCONSIN

**Hospital News.**—The Wausau Memorial Hospital, which is erecting a \$750,000 building, took over the Wausau Hospital, January 1.

**Course in Colloid Chemistry.**—The department of chemistry of the University of Wisconsin announces a course in colloid chemistry to be conducted by Professor Svedberg of the University of Upsala, who will be in residence from Feb. 1 to Aug. 5, 1923. Professor Svedberg will give two lectures a week on the general theory of colloids and will direct the experimental researches of a number of graduate students during the second semester. A seminar in colloid chemistry will also be conducted during the second semester, the first half being devoted to theory and the second half to biologic applications of colloid chemistry. From June 12 to 15, a national symposium on colloid chemistry will be held at Madison, to which all scientists are invited. Those desiring to work under Professor Svedberg's direction, either during the second semester or during the summer session, should communicate promptly with Prof. Joseph H. Mathews, Ph.D., chairman of the department, since only a limited number can be accommodated.

#### CANADA

**Hospital Donation.**—Under the will of the late William Scott, of Egmondville, Ont., the sum of \$40,000 has been donated to the town of Seaforth, Ont., for the erection and maintenance of a hospital.

**Hospital News.**—Ste. Justine's Hospital, Montreal, Quebec, was opened recently for inspection. A new wing has been added, making it possible to accommodate more than 150 children, where eighty were previously taken care of. The cost of the new building was \$300,000.

**University News.**—Lord Byng, resident governor-general of Canada, Sir Robert Falconer of the University of Toronto and Dr. Herbert Gray of Toronto addressed the opening meeting of the National Student Conference which was held in Toronto recently. Students from nearly every country in the world were represented at this conference.

**Special Instruction for Mental Defectives.**—Owing to the large number of mentally deficient children attending the public schools in Toronto, Dr. C. J. O. Hastings, city health officer, has recommended that the board of education place in the estimates for next year an item to make provision for the separate teaching of mentally defective pupils.

**The American Biochemical Society.**—The society held its annual convention in Toronto, December 27-29. Dr. Frederick G. Banting of the University of Toronto was paid high tribute by the members of the society for his discovery of

"insulin," a proposed treatment for diabetes. Dr. Banting's discovery was the chief topic of the concluding session of the convention, no less than nine papers being read by prominent scientists on this subject. Interest was added to this phase of the convention by the announcement of Dr. J. B. Collip that a new source of insulin had been discovered by him, in clams, and that the material is to be manufactured in Winnipeg, Man., his place of residence.—Officers of the society for 1923 were elected as follows: president, Philip A. Schaffer, Washington University; vice president, H. C. Sherman, Columbia University; secretary, Victor C. Meyers, New York Medical School, and treasurer, W. R. Bloor, Rochester, N. Y.

#### GENERAL

**Phi Delta Epsilon Elects National Officers.**—At the nineteenth annual convention of the Phi Delta Epsilon fraternity, held at Chicago, December 26-28, the following officers were elected for 1923: grand consul, Louis Bothman; vice grand consul, James W. Smith; chancellor, Monroe E. Greenberger; scribe, Henry B. Boley; historian, Charles Englander; marshal, Isidor Pilot; editor, Aaron Brown, and officers of trustees, Aaron Brown, Jacob Braun, A. J. Beller, and Leo S. Schwartz.

**Western Society of Engineers Discuss Preventive Medicine.**—At a meeting of the Western Society of Engineers, to be held January 5 in their rooms at 1735 Monadnock Building, Chicago, Dr. C. A. Kofoed, professor of zoology, University of California, will give an address on "Preventive Medicine and Sanitation in Relation to Human Efficiency." In addition, two films will be shown: "Unhooking the Hookworm" and "Exit Ascaris," loaned for the occasion by the Rockefeller Foundation and the U. S. Department of Agriculture, respectively. Members of the American Medical Association are cordially invited to attend, and to take part in the discussion following the address.

**New Regulation on Medicinal Whisky.**—Commissioner D. H. Blair of the Internal Revenue Department, just issued Treasury Decision 3418 governing the issuing of whisky for medicinal purposes:

In the interest of the public health, and to prevent the use of impure, harmful and poisonous liquors, the withdrawal, for medicinal purposes, from distillery warehouses, general bonded warehouses, special bonded warehouses, concentration warehouses, or other warehouses in which untaxed spirits are held, of only such spirits, not including alcohol, as are bottled-in-bond, will be permitted on and after April 1, 1923, and special permits may be given to the owners of spirits in customs-bond and in free warehouses to bottle such spirits under the supervision of the Commissioner of Internal Revenue and upon the owner's giving sufficient bond against the unlawful diversion of such spirits while in transformation.

**Administration of Maternity and Infancy Act.**—The chairman of the federal board of maternity and infant hygiene, which under the Sheppard-Towner act must pass on the state's plans for use of the federal funds allotted them, reports that the board has not laid down any plan of work which a state must follow, "nor has it made approval of plans contingent on complying with certain conditions, each plan being considered on its merits." It intends, the report adds, that the plan of work shall originate in the state and be carried out by the state; and the plans which have been submitted and approved by the board differ widely, according to local conditions. Altogether forty-two states have accepted the terms of the act, twelve acceptances being by legislatures and the remaining thirty by governors, pending the next regular session of the legislature. Yearly statistics from 1915 to 1920 show an increase rather than a decrease in the mortality rate among mothers in connection with childbirth, and in 1920 the rate was higher in the United States than in any other country for which recent figures were available. Infant mortality has decreased, but the rate here is still not as low as in five other countries.

**Principal Causes of Death, 1921.**—The Department of Commerce announces that the compilations made by the Bureau of Census show that 1,032,009 deaths occurred in 1921 within the death registration area of the continental United States, representing a death rate of 11.6 per thousand population, as compared with 13.1 in 1920. The rate for 1921 is the lowest recorded in any year since the beginning of the annual compilations, in 1900. The death registration area (exclusive of the territory of Hawaii) in 1921 comprised thirty-four states, the District of Columbia, and sixteen cities in nonregistration states, with a total estimated population on July 1 of 88,667,602, or 82.2 per cent. of the estimated population of the United States. The death rate from cancer increased from 83.4 per hundred thousand in 1920 to 86 in



1921. Some of the other diseases for which the rates increased are diphtheria, typhoid fever, appendicitis, scarlet fever, diabetes and puerperal fever. The fatalities caused by automobile accidents and injuries show an increase from 10.4 per hundred thousand in 1920 to 11.5 in 1921. A marked decrease is shown in the death rate from tuberculosis, which was 99.4 in 1921 as compared with 114.2 in 1920; also in the death rate from influenza and pneumonia (all forms), which was 99.5 in 1921 as against 208.3 in 1920. The rates for measles, bronchitis, nephritis, whooping cough, heart disease, and diarrhea and enteritis also declined.

### LATIN AMERICA

**Hookworm Campaign in Brazil.**—Most striking and effective is the hookworm poster recently issued by the S. Paulo health authorities. The different illustrations in color, picture the appearance of the blood in health and disease; a healthy peasant, properly clad and wearing boots, standing straight and ready to work, and a barefooted sick peasant, bending over and unable to do his task; coffee plantations with their red berries, healthy people with ruddy faces and hookworm patients with pale, sunken cheeks. The legends point out that a healthy farmer can do twice as much work as a hookworm patient.

**Chair of Biologic Chemistry at Havana.**—The chair of medical chemistry in the faculty of pharmacy at Havana has been abolished and the teaching of this branch has been transferred to the medical faculty and the name of the course changed to biologic chemistry. Dr. L. Plasencia, professor of microscopy and clinical chemistry, has been entrusted with the teaching of biologic chemistry, and in his inaugural lecture he announced that he has founded a special annual prize of 50 pesos, to be known as the Carlos Findlay prize in biologic chemistry, to be awarded to the student making the best record in this branch of study. The *Vida Nueva* reproduces his inaugural lecture in full.

**Personal.**—Dr. Gabriel Malda, head of the national public health department of Mexico, has been appointed vice president of the National Academy of Medicine. Dr. Malda was also recently made vice president of the American Public Health Association and head of the organizing committee of the seventh Latin American Medical Congress. —Dr. L. Rivero Borrell, a Mexican urologist, has returned to his country, after spending three years in Europe. —On the fiftieth anniversary of his entering medical practice, Dr. J. Ramón Icaza was tendered a banquet by his friends and pupils. A souvenir album was presented to him. Dr. Icaza is now president of the Mexican Medical Association and was formerly professor of surgical therapeutics.

### FOREIGN

**The Seventh Centenary of the University of Naples.**—A committee has been formed to arrange for the celebration of this septicentennial in 1924.

**Japanese Pharmacists Separate.**—A movement to separate the pharmacists' profession from that of the medical practitioners in Japan is being conducted in the country on a large scale.

**Personal.**—Prof. S. Winogradsky, former director of the imperial institute for experimental medicine in Petrograd, has been recently appointed chief of a newly organized division of soil microbiology at the Pasteur Institute.

**Officers of Spanish Society.**—Officers were appointed by the Spanish Medico-Surgical Academy as follows: president, José Sánchez Covisa; vice presidents, Manuel Arredondo and Pedro Cienfuentes; secretary general, Santiago Carro; treasurer, Baldomero Castresana; accountant, Antonio Piga; librarian, José Sanchis Banús.

**Scientific Congresses to Be Held Abroad.**—The Second Pan-Pacific Scientific Congress will be held in Australia from August 13 to Sept. 3, 1923. The first session will be held at the University of Melbourne and the second session (August 21 to September 3) at the University of Sydney. —The tenth annual meeting of the Indian Science Congress will be held at Lucknow, Jan. 8-13, 1923, under the auspices of the Asiatic Society of Bengal. Sir M. Visvesvaraya will preside. Lieut.-Col. C. A. Sprawson is chairman of the medical section.

**Far Eastern Red Cross Convention.**—The Far Eastern conference of representatives of Red Cross societies was held in Bangkok, Siam, November 29-December 7. The purpose of the conference was to lay before the organizations in the

Orient the peace program of the Red Cross as adopted by the general council of the League in March, 1921. Delegates from Japan, China, India, Siam, the Philippine Islands, the East Indies, the Federated Malay States, French Indo-China, Australia and New Zealand were in attendance at the conference.

**Memorials to Physicians.**—A memorial tablet with bas-relief portraying the late Professor Maffucci of Pisa was recently unveiled by the provincial and military authorities of the province of Avellino. —A tablet has been placed on the wall of the town hall of the place where the late professor Grocco of Florence was born, and a statue erected on a public place. —An imposing memorial meeting was held recently at Rome to pay tribute to the late Dr. G. Fabbri, who initiated the work of protecting railroad employees against malaria, and devoted himself in recent years to helping the war blinded.

**Scholarships in Neurologic Research.**—The *Informateur* of Paris relates that the Laan Endowment, the seat of which is at Amsterdam, offers a scholarship of 250 florins a month to a research worker of either sex of any country, studying the nervous system along the lines specified by the R. A. Laan Endowment or suggested by the Netherlands Neurologic Society. Prof. C. Winkler of Utrecht is president of the endowment, and Dr. C. C. Delprat is secretary. The latter's address is Jan Luykenstraat 98, Amsterdam. The stipend is to be continued not longer than six or nine months to the same person. The committee passing on the applications includes the director of the central institute for the study of the brain at Amsterdam and one of the members of the committee for control of this institute appointed by the Netherlands Academy of Sciences.

**The Swedish Institute of Eugenic Biology.**—The *Informateur* relates that the government has appropriated 60,000 crowns toward the expenses of Dr. H. Lundborg's institute for biologic research on heredity and racial characteristics. Dr. Halkrantz has been appointed professor of research on heredity, and Dr. Nilsson-Ehle, professor of statistics. An experimental section for biopathology is planned, and a museum for the collection of data on hereditary factors. The settled character of the population in Sweden, generation after generation, affords unusual facilities for such research. Lundborg and his staff have published a number of studies along these lines, which have appeared mostly in the publications of the Swedish Medical Association. Lundborg is professor of psychiatry and neurology at the University of Upsala.

**Radium in Belgian Congo.**—The *Scalpel* of Brussels publishes an open letter from Dr. Matagne which was sent to all the members of the legislature of Belgium, pleading to have the radium found in the Belgian Congo kept for the benefit of Belgium, and not to be marketed. He cites the action of the French government in prohibiting the exportation of the radium found in Madagascar. The Austrian government before the war had also prohibited exportation of the Joachimstal radium or radium ore, and the Czechoslovakian government, he says, has confirmed this. The Oolen works are nearly ready with the first output of radium produced from the Katanga deposits in the Congo, and he urges prompt action by the government to prevent its being sold out of the country. He pleads for the foundation of a radium institute, to be the richest and finest in the world, with the radium from the Congo.

**Public Health Matters in Syria.**—The *Presse médicale* of Nov. 29, 1922, published an account of the organization of the public health and hospital system in Syria and Lebanon by the French high commissioner representing the French mandate in Syria since 1919. Beyrouth and Aleppo were crowded with refugee orphans and the first efforts were, of necessity, to found asylums for 10,000 waifs. These asylums are all maintained by the French commissioner except thirteen in Lebanon. In December, 1921, and March, 1922, about 30,000 refugees arrived from Cilicia. Their transportation and care were in charge of the French commissioner. The campaign against malaria, smallpox and venereal disease has been carried on vigorously, as also has the medical inspection of schools, and maintenance of the already established hospitals and dispensaries and organization of many new ones. The French medical school which has been at work for twenty years at Beyrouth proved of inestimable assistance, as its graduates were called on for their services. Of 140 physicians and pharmacists engaged in this public health service in the Near East, only about ten are native French. The article is signed by the inspector general of the medical department of the colonial troops.



**Health Insurance in Spain.**—In connection with the national conference on work, health and maternity insurance, held at Barcelona in November, there have been many discussions in the Spanish medical press as to the advantages and drawbacks attached to medical participation in the proceedings. At the recent conference of municipal physicians, one of the resolutions approved declared that compulsory sickness, injury and maternity insurance were detrimental to the medical profession. All in all, physicians have favored representation at the meeting in order to have their interests duly protected. The organizing committee granted the right to send delegates to the academies of medicine of Madrid and Barcelona, the superior board of health, the director general of public health, the president of the federation of medical societies and regional medical societies. The Physicians' Syndicate and other local societies of Madrid voted in favor of compulsory insurance provided physicians' rights are safeguarded. They argue that there are already in Madrid more than forty private insurance societies, with a membership of more than 120,000 families, paying four million pesetas (about \$560,000) a year. These societies do not fulfil their purpose, since they are run for gain and in the end exploit both physicians and members.

**Prizes Awarded by the Swedish Medical Association.**—At the annual meeting of the Swedish Medical Association, the Jubilee prize for 1922 was awarded to Dr. J. Forssman for his works "Origin of the Anaphylactic Shock" and "A New Clinical Picture from Injection of Serum." They were published in the *Biochemische Zeitschrift*. The Alvarenga prize was not awarded. The Regnell prize was given to Prof. Ivar Broman for his work "The Evolution of Mammals." The Retzius gold medal for 1922 was presented to Prof. Charles Sherrington of Oxford for his research on the physiology of the nervous system. This medal is awarded alternately every four years for work on anatomy and physiology. The previous recipients have been A. von Koelliker, Carl Voit, G. Schwalbe, John Newport Langley, and O. Hertwig. The Retzius traveling scholarship in anatomy for 1922 was given to the prosector, Carl Hesser. A stipend from the Pasteur fund was given to Prof. A. Pettersson for his research on pneumococci in corneal ulcer, and to continue his attempts to transmit leukemia from man to monkeys. The Lennander lecture in 1922 was delivered by Prof. G. Ekehorn on "Tuberculosis of the Urinary Apparatus." The lecturer in 1923 will be Prof. B. Gadelius, whose subject is "Psychic Hygiene in Schoolchildren." A Gullstrand fund has been recently founded from the surplus after presenting Professor Gullstrand with a gold medal on the occasion of his sixtieth birthday. The *Förhandlingar* of the association states that there are now 1,456 members, including eleven foreign honorary and 145 foreign regular members, and eleven Swedish honorary members. The foreign members who died during 1922 were Erb, Carøe, O. Schaumann, Holsti, Kolster, Ranvier and Sivé. There are a large number of other endowments but in 1922 only 9,970 crowns were paid out in prizes.

#### Deaths in Other Countries

Dr. C. W. Broers, director of the central laboratory of the Netherlands public health service since its foundation at Utrecht in 1909.—Dr. Baudet of Paris succumbed to malignant scarlet fever contracted in his hospital service. The government sent the "epidemics gold medal" to his family.—Dr. E. A. Fontana of Empoli, Italy.—Dr. P. Casciano, professor of medical hydrology at Rome and deputy for four terms.—Dr. E. Zuccaro of Naples.—Dr. Alexandrino Pedroso, professor of microbiology at S. Paulo, Brazil.—Dr. Pacifico Pereira, professor at the University of Bahia.—Dr. Pablo Galli of Buenos Aires.—Dr. A. Bing, professor of otology at the University of Vienna, aged 78.—Dr. E. Sidler-Huguenin, professor of ophthalmology at the University of Zurich.—Dr. O. Hösel, psychiatric expert in the ministry of the interior for Saxony.

#### CORRECTIONS

**Appointment to Norman, Okla., Institution.**—In THE JOURNAL for December 23 appeared an announcement that Dr. J. C. Mahr had been appointed superintendent of the hospital at Norman, Okla. We are informed by Dr. Claude Thompson, secretary of the Oklahoma State Medical Society, that this is an error.

**Infant Feeding and Infant Mortality.**—In THE JOURNAL, December 30, p. 2251, in the abstract entitled "Infant Feeding and Infant Mortality" the last two lines should read: The ratio is much higher (6.3) in the group with earnings under \$550 than in the group with earnings of \$1,250 and over (4.1).

## Government Services

### Distinguished Service Medal Awarded Col. T. S. Wilson

Col. James S. Wilson, M. C., U. S. Army, has been awarded a distinguished service medal for "exceptionally meritorious and distinguished service as chief surgeon of the American Expeditionary Forces in Siberia." Colonel Wilson recently retired from active service after twenty-seven years in the Medical Corps. The presentation of the medal was made by Major Gen. J. H. McRae, Fifth Area Army Corps commander.

### Hospital Evacuation Started

The U. S. Veterans' Bureau announced recently that evacuation of the Fort McHenry Hospital at Baltimore had been started. Patients now confined in the institution are being admitted to hospitals throughout the country to which they prefer to be sent.

### House Favorable to Bursum Bill

The House of Representatives before adjournment for the Christmas holidays adopted the conference report on the Bursum bill, which would increase pensions of Civil and Mexican War veterans from \$50 to \$72 a month and those of widows of veterans from \$30 to \$50, with \$6 additional for each dependent child. Nurses who served during either conflict would receive \$50 monthly instead of the present \$30 pension.

### Pay Increased for Veterans' Attendants

President Harding signed this week the bill which had previously passed both houses of Congress increasing the pay of nurses and attendants of blinded ex-service men. The increases ranged from \$20 to \$50 a month.

### School for Psychiatrists at St. Elizabeth's

Dr. W. A. White, superintendent of the Government Hospital for Insane at Washington, D. C., announced this week the establishment of a school at St. Elizabeth's early in January, for the instruction of physicians in the treatment of mental and nervous diseases. Dr. White stated that, at the time an appropriation of \$35,000,000 was being considered for the construction of hospitals throughout the country for disabled veterans, he suggested to the U. S. Veterans' Bureau that, as half of the soldiers were tuberculous and the other half mental and nervous patients, something should be provided for the latter. He was authorized to organize an institution to train physicians, and, with his staff of forty-five men, has about completed all arrangements. Lecture courses numbering from two to eight will be given by prominent neuropsychiatrists.

### Dickman Board Completes Task

The demotion of Army officers and separation from the service of 1,858 commissioned personnel ordered by Congress in effecting a reduction in the officer complement has been completed by the War Department. The elimination included 101 officers in the Medical Corps, sixty-four from the Dental Corps; twenty-three from the Veterinary Corps, and fifty-six from the Medical Administration Corps. In announcing completion of the reduction program, Secretary Weeks paid high tribute to the work of the Dickman board, to which the task of selecting officers for separation and demotion was delegated. The work was done, he declared, on a high plane without favor to any and strictly on a basis of merit. Surg. Gen. M. H. Ireland of the Medical Corps was a member of the board.

### Annual Physical Examinations in January

The annual physical examination of commissioned officers and warrant officers of the U. S. Army will be conducted during the month of January, 1923, according to instructions issued by Surg. Gen. M. H. Ireland to the Medical Corps. Medical officers making the examinations have been ordered by the Surgeon General to exercise care and judgment in the defect or combination of defects of officers examined as



to whether they are incapacitated for field service; and, before arriving at a definite decision, they must carefully consider the age and rank of the officer concerned and the duties which he will be called on to perform while in active service. All immunization data of each officer in the Army will also be compiled by the commissioned personnel of the Medical Corps during the examinations, as well as descriptions of the reaction to all prophylactic vaccinations.

#### Encouraging Report on Narcotics

Col. L. G. Nutt of the narcotic division of the prohibition unit has reported that there has been a marked decrease in the number of drug addicts in the United States in recent years. While drug peddlers still constitute a national menace, he reported, their illicit traffic is more nearly under control today than it ever has been. Colonel Nutt asserted that reports circulated in Chicago to the effect that the number of drug addicts increased about "1,400 per cent." were without foundation.

#### General Ireland Recommends Changes

The Surgeon General of the Army, Major Gen. M. H. Ireland, has recommended to the War Department that the following legislation be presented to Congress for enactment as necessary to the Medical Corps of the Army:

An Act to Modify the Provisions of the Army Elimination Law: That any officer, irrespective of his age when appointed, who has been or is to be eliminated from the active list, either by discharge or retirement, in accordance with the acts aforesaid, and who has had prior service as an enlisted man or prior service in the military establishment under other governmental appointment which under existing law is now counted for purposes of retirement, pay or promotion, shall be credited with all such service.

An Act Granting Retirement to Members of the Army Nurse Corps: That members of the Army Nurse Corps who shall have had active service of twenty years, including for the purpose of computation former service as contract nurse prior to February 2, 1901, and all active service in the Navy nurse corps, shall on application therefor to the Secretary of War, be placed on a retired list, and shall thereafter receive 75 per cent. of the pay they were drawing at the time of such retirement.

An Act Designated to Extend the Period Under Which Decorations May Be Accepted from Foreign Governments: That the eleventh paragraph under the caption "Medals of Honor, Distinguished Service Crosses, and Distinguished Service Medals," Army Appropriation Act, approved July 9, 1918, to the extent that it establishes limitations of time as a condition of acceptance, by any and all members of the military forces of the United States who served in the World War, of decorations or medals from foreign governments, is amended so as to extend such limitation for a period of one year from and after the approval of this act.

#### New Army Medical School Started

The cornerstone of the Army Medical School building in Washington, D. C., has been laid. Brig. Gen. Walter D. McCaw, commandant of the school and also a member of the staff of the Surgeon General, was present at the ceremonies held recently, as were officers of the Army and patients from the Walter Reed General Hospital. In the receptacle of the stone were placed extracts from the annual reports of the Surgeon General of the Army for 1862, and from 1893 to 1921: a photograph of the architect's drawing of the building; a photograph of Brig. Gen. George M. Sternberg, organizer and founder of the Army Medical School, and photographs of Generals Ireland and McCaw, and Colonel Glennan.

#### Annual Conference of District Sanitary Engineers

The annual conference of district sanitary engineers of the U. S. Public Health Service was held in Washington, D. C., Jan. 2-6, 1923. Among the invited guests were Dr. J. A. Omyot, deputy minister, department of health of Canada; Dr. W. S. McCullough, chief officer of health, provisional board of health, Ontario, and F. A. Dallyn, director, sanitary engineering division, provincial board of health, Ontario.

#### Test Suit Launched Against Sheppard-Towner Act

A suit against the enforcement of the Sheppard-Towner maternity act was launched in the District of Columbia Supreme Court, this week, when Mrs. Harriett A. Frothingham of Boston became the plaintiff and named Andrew Mellon, Secretary of the Treasury; Grace Abbott, chief of the Children's Bureau of the Department of Labor; Hugh S. Cumming, Surgeon General of the U. S. Public Health Service, and John J. Tigert, United States commissioner of education, in an injunction to prevent their carrying out the provisions of the act. According to the act, Congress is to

appropriate \$430,000 annually for a period of five years to carry on the work. Mrs. Frothingham, who lives at 113 Commonwealth Avenue, Boston, declares in her petition that this act violates the provisions of the fifth amendment to the Constitution. She declares the \$430,000 provided for annually by the appropriation is paid into the United States Treasury by the taxpayers of this country and that taxation of this character is confiscatory in nature. In this, the complaint says, it violates that amendment to the Constitution. Mrs. Frothingham further charges that the act invades the sovereign rights of the states.

#### The Navy Medical Corps

There are at present several vacancies in the medical corps of the Navy. Successful candidates, after being commissioned, will be ordered to one of the larger naval hospitals pending the beginning of the next session of the Naval Medical School, at which time they will be ordered to duty in attendance on a course of instruction. On completion of the course of instruction at the Naval Medical School, Washington, D. C., they will again be ordered to a naval hospital for approximately one year, at the end of which they will be transferred to sea duty.

Lieut. Commanders F. E. Sellers and E. P. Huff will shortly be ordered to the Naval Hospital, Boston, for the purpose of taking a special course in internal medicine at the Massachusetts General Hospital. Lieut. L. H. Williams has been assigned to duty in attendance on a course of instruction at the Mayo Foundation, Rochester, Minn.

#### Fleets Change Hospital Ships

Announcement was made by the Surgeon-General of the Navy that while the fleet is combined at Panama in February for maneuvers, there will be an exchange of hospital ships. The *Relief*, which has been with the Atlantic fleet will go to the Pacific, and the *Mercy*, which has been with the Pacific fleet, will come to the Atlantic. The commander-in-chief of the fleet has been given authority to transfer officers and men between the two hospital vessels in case some desire to remain in the localities where they have been serving. Changes in the stations of naval medical officers follow: Commander J. D. Manchester has been transferred from duty at the naval hospital, Mare Island, Calif., to the Naval Training Station, San Francisco, and Commander C. N. Fiske from the training station to Mare Island hospital for duty. Commander W. A. Angwin has been ordered transferred from the *Relief* to the battleship *Nevada* for duty, being succeeded on the hospital ship by Lieut. Commander R. M. McDowell from the naval hospital at San Diego, Calif.

#### The Public Health Service

The advisory committee to the Surgeon-General on the education of sanitarians and the future of public health in the United States met in the office of the Surgeon-General, Washington, D. C., January 3. The object of this meeting was to confer with the Surgeon-General and officers of his staff for the purpose of definitely shaping policies of the Public Health Service. Many of the recommendations submitted by a conference on this subject, which was held under the auspices of the Public Health Service in March, 1922, are already being put into effect. The annual conference of the public health workers in Virginia was held at Richmond, December 27 and 28. The personnel of this conference consisted of state and local health officials, including physicians, nurses, inspectors and other sanitarians. Governor Trinkle made an address, as did Surg.-Gen. H. S. Cumming, Dr. J. A. Hayne, state health officer of South Carolina, and Asst. Surg.-Gen. W. F. Draper. In 1908, Virginia had no full-time county health work in operation. In 1912, the first full-time health officer went on duty. In 1917, there were five counties having full-time health officers, and in 1922 the number of counties employing full-time health workers had reached thirty-two. This statement, perhaps more than any other, indicates the progress which Virginia is making in developing her health organization. There will be a public health exhibit in the city of New York, January 22-27, at the Grand Central Palace, under the auspices of the city health department, in cooperation with the state department of health. Senator-elect Royal S. Copeland is chairman of the exhibit committee, and arrangement is being made for an intensive instructive exhibit.



## Foreign Letters

### PARIS

(From Our Regular Correspondent)

Dec. 8, 1922.

#### Use of Preservatives in Foodstuffs

The food preserving industry has not as yet made any extensive researches in the domain of asepsis, which is difficult of accomplishment on a large scale, but has confined its attention chiefly to easier methods, with a view to utilizing chemical substances, more or less bactericidal, in order to produce a medium unfavorable to the development of bacteria. Such bactericidal preservatives, however, have serious disadvantages. From the practical standpoint, producers will always have a tendency to employ as preservatives strong chemical substances that are effectual when used in very small amounts, and they overlook the fact that the results desired cannot be secured without grave danger to the consumer. In another sense, the preservative or disinfectant seems to authorize, or at least to excuse, all forms of negligence. In view of the presence of the preservative that is supposed to conserve the foodstuff in an undeteriorated state, the industry seems to think that there is no need of using care to have the food to be preserved in as fresh a condition as possible, nor of taking any special precautions during the course of the preserving process; hence, the numerous cases of intoxication of more or less obscure origin but doubtless due to preserved foodstuffs, that have been observed of late. All the recent congresses on public health have passed resolutions disavowing the use of preservatives or disinfectants in foodstuffs, but this fact does not prevent certain states from authorizing, under the cover of commercial freedom, the use of various disinfectants or preservatives, on the sole condition that the label on the original package shall state the nature and the amount of the preservative used.

Another important matter to which Dr. F. Bordas has recently called attention is the fact that, in the countries where there is an abundance of everything, considerable impetus has been given to the food preserving industry by the increased demand for such produce in the regions that suffered profoundly during the World War. In view of this state of affairs, it is incumbent on us to consider the necessity of establishing safeguards with reference to the enormous stocks of merchandise that have been accumulating for months in the warehouses of the world. These safeguards are indispensable from the standpoint of public health and the point of view of securing honest goods for honest money. Foodstuffs preserved by heat sterilization or by freezing or refrigeration may have been manufactured a long time previously without the buyer or the consumer being in a position to know the facts in the case. It is important, therefore, as has already been demanded with reference to certain kinds of canned fish, that the date of manufacture be plainly stamped on the container, no matter what method of preserving was employed. In the case of foodstuffs enclosed in tin containers, the problem presents no particular difficulties; but the same information should be furnished the buyer when he purchases products preserved by freezing. Frozen meats and cold-storage butter might have the date of origin stamped on the package; also certain marks indicating the cold storage plant where the products have been stored.

#### The Disinfection of Glassware in Public Establishments

I mentioned in a previous letter the researches of Drs. L. H. Dejust, Wibaux and L. Dardel on the presence of pathogenic bacteria on table utensils, and the various meth-

ods of disinfecting them (THE JOURNAL, July 22, 1922, p. 314). Dr. Dejust has of late carried on his researches in collaboration with Mlle. G. Bigourdan. He was able to show that the drying of dishes with a towel, while more or less efficacious at first, becomes rapidly less so, since, as a rule, the same towel is used to dry a large number of dishes, before it is discarded. Particularly, in many restaurants and cafés when a towel has become too damp to be utilized further, it is merely hung up to dry and is used again, a few hours later, when it is dry. It is discarded only when it bears all too apparent signs of being soiled. There results a sort of methodical enrichment of bacteria, which, after twenty or more operations, renders the towel capable of contaminating sterile objects with which it comes in contact.

As for the use of concentrated solutions of strong acids (a 10 per cent. solution of hydrochloric acid, for example), which are said to kill instantly all the bacteria, Dejust and Mlle. Bigourdan are not inclined to recommend them. The use of such solutions presupposes a material that acids will not attack; the majority of the drinking vessels, however, are of metal. Furthermore, if acids are used, rubber gloves must be worn. The use of such solutions would necessitate the organization of a special dish-washing service. The proprietors of cafés and restaurants will never, of their own accord, go to this expense. However, during an epidemic of a disease that is transmissible by buccal secretions, the disinfection of the glassware of public establishments might be reasonably demanded. Under such circumstances, the inconveniences associated with the use of solutions of strong acids would be borne without complaint.

A different attitude toward the question should be taken in establishments where the risks of contamination are particularly great (sanatoriums, hospitals). For such establishments the solution of the problem is very simple. All that need be done is to replace the ordinary glassware with receptacles sterilizable by heat, so that they can be washed and disinfected in the dish-washing machines, at the same time as the rest of the tableware. This is the solution of the problem that was reached some time ago in the Hôpital Pasteur, where the patients are provided with metal cups. Certain glasses of special composition will not break when immersed in boiling water, even though they are immediately transferred to cold water; this type of glassware commonly used in laboratories is unfortunately too easily broken and also too high priced to be used habitually in the form of drinking glasses. However, the manufacturers might perhaps take into account this eventual application of their product. In the meantime, the use of cups, goblets and bowls (made of faience or porcelain) that can be sterilized by heat is to be recommended. Those in charge of hospital management ought to carry out this precaution—at least in the services where patients suffering from affections transmissible by the buccal secretions are being treated.

#### Society of Friends of the Faculté de Médecine of Paris

The Société des amis de la Faculté de médecine de Paris has for its *raison d'être* the improvement in the medical school of the methods of instruction, the facilities for work available to the students, and the laboratories of scientific research; the expansion of French medicine in foreign countries, and the advancement of medical science in general. It consists at present of 182 members. In 1920, the society published a large edition of a prospectus setting forth the advantages and chief features of the Faculté de médecine of Paris, and sent copies to all the medical centers of the world. This year it proposes to put up in the halls of the university a commemorative tablet in honor of the students and doctors of the Faculté de médecine who died for France. Furthermore, the society plans to organize at the Faculté de



médecine, during the winter semester, a series of twelve lectures to be delivered by professors and instructors of the university. These lectures are intended to afford the professors an opportunity of presenting a summary of their own individual researches, thus giving an idea of their particular field of scientific activity.

#### Victims of Roentgen Rays

Dr. Vaillant, roentgenologist in the Lariboisière Hospital, whose left arm had already been amputated following an injury caused by roentgen rays, has just undergone an amputation of the right forearm for the same reason. On this occasion he received expressions of sympathy from the municipal council, the prefect of the department of Seine, the president of the republic and the minister of public health. The commission charged with the administration of the Carnegie Hero Fund met recently under the chairmanship of M. Emile Loubet, former president of the republic, at which time it considered the activities of several roentgenologists who have become the victims of their devotion to science; more especially Drs. Leray, Vaillant and Bergonié. It awarded a gold medal to Bergonié.

#### LONDON

(From Our Regular Correspondent)

Dec. 11, 1922.

#### Causes and Prevention of Blindness

In 1920, the minister of health appointed a committee to investigate and report on the causes of blindness, including defective vision sufficient to impair economic efficiency, and to suggest measures of prevention. The committee, which included ophthalmic surgeons, a neurologist and other experts, has now presented a report. In 1921, there were, in England and Wales, 34,894 persons too nearly blind to perform work for which eyesight is essential. The ages at which persons become blind are 21 per cent. in the first year of life, and thereafter about 10 per cent. for each decade up to 70 years. In the order of importance, the causes of blindness were: ophthalmia neonatorum; syphilis; congenital malformations; surface inflammations in childhood; trachoma; myopia; glaucoma; industrial disease and accident; accidents in civil life; war conditions, and sympathetic ophthalmia. For the prevention of ophthalmia neonatorum, the committee recommends that arrangements be made for pupil midwives to visit ophthalmic hospitals for the purpose of gaining experience as to the disease. For prophylaxis, Credé's method (with not stronger than 1 per cent. of silver nitrate) in skilled hands is recommended, but not as a routine for midwives, under whom its use would lead to the risk of neglecting the more important scrupulous cleansing. The disease should be diagnosed and notified at the earliest possible moment, that nursing facilities may be supplied or the patient admitted to a hospital. If physicians had facilities provided for consultation with an ophthalmic surgeon and for bacteriologic investigation, there would be less delay in treatment. For the latter, the midwife's care is inadequate: irrigation by a trained nurse must be performed at frequent intervals, day and night.

The committee found evidence that some physicians fail to recognize the disease early, because of limited training in ophthalmology. It therefore recommends that, to determine his qualification, every student should be examined in ophthalmology. Syphilis is given as the cause of from 10 to 15 per cent. of the cases of blindness. Trachoma, once so terrible in this country and still so in others, is now rare. The most important step is to prevent its importation by immigrants. As the determining cause of primary glaucoma is unknown, the disease cannot be prevented; but blindness can, by early treatment. The point is emphasized that, in the

early stages, glaucoma may appear to be relieved by frequent changes of glasses; hence, the grave risk of treatment by opticians. The principal industrial diseases that affect eyesight are various forms of poisoning, cataract in glass and iron workers, pitch ulceration, and miners' nystagmus. Lead poisoning has almost ceased to be a factor, in consequence of exhaust ventilation, the use of leadless or low solubility glazes and labor-saving devices, and periodic medical examination of workers. Rare causes are trinitrotoluene and carbon bisulphid poisoning. No authentic case of poisoning by wood alcohol is known in this country; which appears to be due to the fact that methyl alcohol is not produced in a refined and drinkable form.

#### Advertising by Physicians

At the General Medical Council, Dr. R. A. Bolan brought forward an important motion to consider oblique or indirect advertising by physicians in the lay press. His object was to elicit a pronouncement on certain developments of journalistic advertising that had arisen in the last few years. He considered that, if these were not checked, there would be danger that some of the cherished traditions of the profession would be undermined. It was rare now that blatant advertisements, such as handbills heralding the attainments of a physician, were encountered. But more subtle and insidious methods had come into being. Brief notices of physicians were inserted in a column of the newspaper, sometimes called the "Court Circular" column, at the foot of which might be found the statement that advertisements were inserted there at a special rate. The notices were sometimes obituary paragraphs concerning persons related to a man who was referred to as "that well-known physician." Again, in notices of engagements or marriages, it should be sufficient to indicate the persons so that they would be known to their friends without seizing the opportunity to announce the qualifications and professional address of the bridegroom or of the father of one of the parties.

Physicians, wittingly or unwittingly, were advertised in the lay press by the publication of their opinions on matters of the moment. Sometimes, they contributed to the correspondence column. Some took the precaution of appending only their names; but, when the professional qualifications and address followed, one could only conclude that advertising was intended. Another method was to announce that a prominent person, being in ill health, had consulted such and such an "eminent physician," or had been operated on by such and such a surgeon, although the names were of no public interest. There was a large class in which advertisement took the form of press interviews on subjects which ranged from experiences on liners to fighting epidemics or performing operations by wireless, and the expression of opinions as to the spread of cancer or its treatment. Portraits were sometimes published of men who were described as experts on the particular subject. A more serious matter was a series of articles in which the writer used some such phrase as "my vast and varied experience." If the object of a physician was to instruct the public in some matter that was quite proper, it would be sufficient for the editor to say that the writer had the requisite position, without mentioning his name. The following motion was adopted by the council: "That it be remitted to the executive committee in consultation with the legal advisers to consider and report on the expediency of amending the council's warning notice with respect to canvassing and advertising so as to make it more clear and comprehensive."

#### Sir Norman Moore

Sir Norman Moore, late president of the Royal College of Physicians and physician to St. Bartholomew's Hospital, has died, at an advanced age. Born in Lancashire in 1847, the



son of an Irish barrister, he was educated at Owens College, Manchester, and at Cambridge. From the beginning of his medical studies he showed a literary bent. He finished his course at St. Bartholomew's Hospital, where he passed through the various posts up to that of physician, which he held from 1902 to 1911. Though painstaking and an excellent teacher and writer, he made his mark as a historian rather than as a physician. He was devoted to the Royal College of Physicians, where he filled most of the offices of importance, becoming president in 1918. Widely read in all branches of literature, he was especially attracted to history and biography. For the "Dictionary of National Biography" he wrote no fewer than 459 biographies, chiefly of medical men. These he composed with great accuracy of detail. Before writing the biography of a person, he read everything that the person had written. Long before the history of medicine was thought worthy of attention, he urged the importance of its study, and through his influence the Fitzpatrick lectures on the history of medicine were established at the Royal College of Physicians. He was president of the Section of the History of Medicine at the International Congress of Medicine in 1913, and president of honor at the congress this year. His opus magnum was a history of St. Bartholomew's Hospital, which appeared in 1919. Its preparation occupied him for more than thirty years. With great wealth of detail and high literary skill, he traced the history of the hospital from its foundation in Norman times to the present day.

#### Insanity and Crime

The difficulties that are constantly arising as to criminal responsibility have been discussed in previous letters. A criminal responsibility committee has been appointed by the Medico-Psychological Association, to determine the question of criminal responsibility of the criminal insane. The committee consists of twenty-eight members, and includes leading alienists. It hopes to find some kind of formula which will be accepted by judges and juries in cases in which the plea of insanity is made. The committee is expected to take several months to consider its findings. It may be remembered that this question was brought into prominence by the case of Ronald True, who murdered a courtesan and decamped with her jewelry. The jury refused to accept the plea of insanity, and convicted him of murder, notwithstanding undisputed medical evidence that he was insane. But before executing him, the home secretary, according to law, had to submit the question of his sanity to experts. They decided that he was insane and he escaped the gallows, though guilty of a brutal and cold-blooded murder.

#### Birth Control Attacked

Birth control has extended in this country, and a society has been formed. A journal is published and propaganda takes the form of public meetings also. Dr. Louise McIlroy, professor of obstetrics and gynecology at the London School of Medicine for Women, delivered the inaugural address of the session of the York Medical Society on the subject. She complained that psychoanalysis had attracted charlatans, who used methods of the muck-raker as to sex and frequently suggested sex to patients in cases in which it was not in question at all. History showed that the downfall of Greece and Rome was due to the practice of race suicide, and if the practice obtained headway here, it would mean the downfall of our empire. Birth control methods would make venereal disease more prevalent, increase prostitution, and turn women in the home more or less into the line of prostitution, making them slaves of their husbands. The methods would not be confined to the married but would be an inducement to immorality among the unmarried. She had never met an obstetrician or gynecologist who advocated them, for

they knew how harmful were the results. Their supporters in the profession were among physicians and health officers who favored them for economic reasons. But the remedy was to teach the young of the community what life and marriage really meant, and it must be insisted that sex union was not a physiologic necessity in the male—the most degrading doctrine women had ever accepted. If they got that idea out of their heads, they would have done much for the moral education of the race.

#### BERLIN

(From Our Regular Correspondent)

Dec. 9, 1922.

#### Significance of the Abderhalden Reaction in the Field of Psychiatry and Nervous Diseases

It was formerly thought possible to distinguish defect psychoses from other psychoses by means of the dialyzation method; dementia praecox, especially, was regarded as being diagnosticable in this manner, but more recent investigations tend to disprove this assumption. Kastan refuses to accept the theory of a special dysglandular psychosis. The notion of dysfunction is not clear clinically. The Abderhalden reaction does not prove that the organ which gives evidence of perverted metabolism is the one in which the pathologic changes first occurred; for the former may have been damaged by psychic influences. The results Kastan has reached through his own researches may be summed up thus: Eleven per cent. of his cases of manic-depressive insanity were found to be due to psychic enfeeblement and deterioration of the gonads; in eighty-seven cases of dementia praecox he found twenty-seven instances of deterioration of the thyroid gland, sixty instances of deterioration of the gonads and thirty examples of cerebral deterioration; in twelve cases he found deterioration of the brain, the thyroid and the gonads, and in nine cases no positive results were secured. He found cerebral deterioration in 33 per cent. of the epileptics examined, but noted no wealth of peculiar (*eigen*) dialyzable substances. In paresis he observed cerebral deterioration in 40 per cent. of the cases. Following the Steinach operation in dementia praecox there were no changes in the Abderhalden reaction. However, the reaction has had a theoretical value. It has led to viewing from a common angle all processes in the body associated with psychoses.

#### Topography of the Cerebral Cortex

At a meeting of the Gesellschaft deutscher Nervenärzte, Goldstein of the Frankfort Neurologic Clinic, Pfeifer of the Halle Psychiatric Institute, and Förster of the Breslau Neurologic Clinic read papers on the topography of the cerebral cortex. According to Goldstein, the processes that take place in the sensomotor area are never distinctly separate from the processes of the central apparatus. In every cerebral performance, the functions of a large, uniform apparatus which comprises the whole cerebral cortex are brought into play. To the various divisions of the cerebral cortex are delegated only certain special functions, which are, however, dependent on the whole. What are regarded as local symptoms is only the change that the function of a local focus produces in the whole performance. If one portion of the brain is injured, another portion of the same or the other hemisphere takes over the impaired function. The uninjured portion of an apparatus will endeavor, as far as possible, to take over the complete function of the intact apparatus. On the basis of psychologic tests carried out on 300 patients who had suffered brain injuries during the World War, Pfeifer showed that the reduction of the capacity for bodily and mental performance depends, qualitatively and especially quantitatively, to a great extent on the localization of the brain injury. Persons who have suffered



occipital injuries were found, on being tested for light sense, space sense and perception of depth and distance, to be twice as much affected as those who had suffered injuries of other portions of the brain. In injuries of the temple, a special diminution of function in the realm of acoustics was noted. In frontal injuries, the greatest damage to the higher intellectual functions was observed, especially as regards the processes of thought, logical thinking, power of judgment, forming of conclusions and power of concentration. On the other hand, those in whom the central convolutions were damaged were the least affected as far as intellectual qualities are concerned. In doing sums, those who had suffered occipital or temple injuries worked the slowest and the least accurately. In tests of the power of attention, those with occipital injuries showed the worst results. In tests of the emotions during work done amid disturbances, those with frontal injuries showed the greatest cerebral impairment, while those with occipital injuries showed the least. Disturbances of the emotions in general are most frequent and the strongest in those with frontal injuries. Injuries of the left hemisphere in right-handed persons show greater damage to the memory and intellect than injuries of the right hemisphere—especially in those who have suffered frontal injuries.

#### Personal

Dr. Iwan Bloch, the dermatologist and sexologist, has died at the age of 50. Besides various contributions to dermatology and the etiology of sexual diseases, Bloch has written a number of works on the history of medicine which are valuable for the history of civilization. Worthy of special mention is his "History of Prostitution." Under the pseudonym Eugen Dühren, he published a monograph on the Marquis de Sade, which is an instructive contribution to the history of sexual perversions and to the history of morals in the eighteenth century and the period of the revolution in France. He took an active part in the founding of the Berlin Aerztliche Gesellschaft für Sexualwissenschaft. The London society for research in sexual science made him an honorary member, two years ago, which was the first honor of this nature accorded since the war to a German scientist. He was also a member of the Gesellschaft für Bibliophilen, and secured the publication of an unprinted letter of Kant and the posthumous works of Heinrich Lautensack. Several months ago Dr. Bloch contracted a severe influenza infection, which was the beginning of a long illness, during the course of which he had to undergo the amputation of first one leg and then the other.

#### Marriages

AUBIN TILDEN KING, Captain, M. C., U. S. Army, Carlisle Barracks, Pa., to Miss Louise Antoinette Smith of Richmond Hill, N. Y., December 16.

WILLIAM LANDON BRENT, Colonial Beach, Va., to Miss Lucille Lewis of Birmingham, Ala., in November.

GUSTAVE B. DUDLEY, JR., Danville, Va., to Miss Priscilla Humbert of Lowmoor, Va., December 6.

WALTER L. STRANBERG to Miss Margarette A. Timmons, both of Milwaukee, December 17.

JOHN E. EVANS, Wilmington, N. C., to Miss Sara Shepherd of Chatham, Va., November 28.

CARL H. ILL, to Miss Jeannette R. S. Seymour, both of Newark, N. J., November 27.

JAMES P. HENNESSY, New York, to Miss Helen M. Hendrix of Baltimore, December 23.

CHARLES F. RINKER to Mrs. Louisa D. Hall, both of Upper-ville, Va., November 15.

JAMES HERBERT MITCHELL to Miss Marion Strobel, both of Chicago, December 6.

#### Deaths

**Marshall Calkins**, Springfield, Mass.; Dartmouth Medical School, Hanover, N. H., 1868; member of the Massachusetts Medical Society; professor of physiologic and microscopic anatomy at the University of Vermont College of Medicine, Burlington, 1873-1897; formerly attending physician to the Springfield City Hospital and the Springfield Home for Friendless Women and Children; member of the board of pension examining surgeons; corresponding member of the Boston Gynecological Society and member of the American Association for the Advancement of Science; died, November 26, aged 94, from senility.

**Robert Arnot Sempill** ☉ Chicago; College of Physicians and Surgeons, Chicago (University of Illinois), 1891; professor of dermatology, Loyola University School of Medicine, Chicago, and professor of dermatology and syphilology at the Chicago Polyclinic; served during the World War in the M. C., U. S. Army, with the rank of captain; died, December 19, aged 58, from acute dilatation of the heart.

**Daniel Olin Leech** ☉ Washington, D. C.; Medical Department of Columbia University, 1887; member of the American Therapeutic Society; formerly connected with the Florence Crittenton Hope and Help Mission, Eastern Dispensary and Casualty Hospital, the Sibley Memorial Hospital and the Garfield Memorial Hospital, where he died, December 14, aged 60, following an operation.

**Henry Hodgen Kirby** ☉ Little Rock, Ark.; Washington University Medical School, St. Louis, 1906; clinical professor of gynecology at the University of Arkansas Medical Department, Little Rock; surgeon to St. Luke's Hospital; member of the Southern Medical Association; died suddenly while on a hunting trip, December 9, aged 39.

**John Martin Maloney**, Springfield, Mass.; Georgetown University School of Medicine, Washington, D. C., 1907; member of the Massachusetts Medical Society; served in the M. C., U. S. Army, during the World War; on the staff of the Mercy Hospital; aged 37; died, December 16, from pneumonia.

**Archibald Cheatham**, Durham, N. C.; University of Maryland School of Medicine, Baltimore, 1888; member of the Medical Society of the State of North Carolina; at one time superintendent of the Durham Board of Health; aged 58; died, December 10, from cerebral hemorrhage.

**Henry Richings** ☉ Rockford, Ill.; Medical Department of the University of the City of New York, 1864; Civil War veteran; formerly member of the state board of health; at one time on the staff of the Rockford Hospital; aged 82; died, December 12, from heart disease.

**John Benjamin Latham**, Abilene, Texas; Memphis Hospital Medical College, Memphis, 1893; member of the State Medical Association of Texas; served in the M. C., U. S. Army, during the World War; on the staff of the State Epileptic Colony; aged 50; died, November 26.

**Lee Arbor Scace**, Centralia, Wash.; University of Minnesota Medical School, Minneapolis, 1907; member of the Washington State Medical Association; superintendent of the Scace Hospital; aged 42; died suddenly, November 21, at Hot Lake, Ore., from heart disease.

**Albert J. Scholl** ☉ Los Angeles; Rush Medical College, Chicago, 1880; Medical Department University of California, San Francisco, 1890; formerly on the staff of the Los Angeles Orphan Home; aged 63; died, December 9, at the Pacific Hospital, following an operation.

**Daniel Hutson Arthur**, State Farm, Mass.; New York Homeopathic Medical College and Hospital, New York, 1887; member of the American Psychiatric Association; on the staff of the Bridgewater State Farm, Gowanda, N. Y.; aged 61; died, December 19.

**Homer E. Griswold**, Erie, Pa.; Cleveland Homeopathic Medical College, Cleveland, 1903; member of the Medical Society of the State of Pennsylvania; on the staff of the Hamot Hospital; aged 43; was found dead in bed, December 14, from heart disease.

**Albert Harlow Pratt**, Oakland, Calif.; Cooper Medical College, San Francisco, 1872; Bellevue Hospital Medical College, New York, 1878; formerly member of the board of education; aged 78; died, December 12, at the Merritt Hospital, from senility.

☉ Indicates "Fellow" of the American Medical Association.



**Walter Everett Whitney**, Bangor, Me.; Jefferson Medical College, Philadelphia, 1893; member of the Maine Medical Association; member of the American Academy of Ophthalmology and Oto-Laryngology; aged 57; died, November 28, from uremia.

**Frederick Eugene Leonard**, Oberlin, Ohio; College of Physicians and Surgeons (Columbia University), New York, 1892; professor of physiologic and physical training at Oberlin College; aged 56; died, December 10, following a long illness.

**Walter Marshall Dake**, Denver; Hahnemann Medical College of Philadelphia, 1877; formerly professor of diseases of lungs at Denver Homeopathic College; aged 67; died, December 14, at La Jolla, Calif., from heart disease.

**Jesse Raymond Burdick** ⊕ Tulsa, Okla.; Hahnemann Medical College and Hospital of Chicago, 1900; member of the Central States Pediatric Society; aged 44; died suddenly, December 8, from cerebral hemorrhage.

**Eugene Aloysius Moore** ⊕ Philadelphia; Jefferson Medical College, Philadelphia, 1908; served in the M. C., U. S. Army, during the World War; aged 39; died, November 27, at the Anderson Hospital, from tuberculosis.

**Patrick Clabon Nunn**, Davisboro, Ga.; University of Georgia Medical Department, Augusta, Ga., 1886; member of the Medical Association of Georgia; aged 60; died, December 14, from acute indigestion.

**Melville Skidmore** ⊕ East Moriches, N. Y.; Bellevue Hospital Medical College, New York, 1879; aged 64; died, December 19, at Deal, N. J., from hemorrhages of both wrists, presumably self-induced.

**Philip Edward Arcularius**, East Orange, N. J.; Medical Department of Columbia College, New York, 1868; formerly lecturer on dermatology at his alma mater; died, December 5, from bronchopneumonia.

**Columbus Drew** ⊕ Jacksonville, Fla.; Washington University School of Medicine, Baltimore, 1869; Medical Department of the University of the City of New York, 1879; aged 76; died, December 13.

**Charles Everett Hall**, Freehold, N. J.; Medical Department of Columbia College, New York, 1863; Civil War veteran; formerly president of the Freehold Banking Company; aged 85; died, December 5.

**John Freeman Stanbery**, Newport, Tenn.; Tennessee Medical College, Knoxville, Tenn., 1896; member of the Tennessee State Medical Association; aged 49; died, November 29, from cerebral hemorrhage.

**Albert A. Campbell** ⊕ Ogema, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1909; also a druggist; aged 54; died, December 18, from pleurisy and pneumonia.

**Henry L. Moffatt**, Arpin, Wis.; Rush Medical College, Chicago, 1890; member of the State Medical Society of Wisconsin; aged 70; died, November 24, at Marshfield, from heart disease.

**Jinkens L. Schley** ⊕ Homer, La.; University of Tennessee College of Medicine, Memphis, 1909; aged 38; died, December 14, at a sanatorium in Shreveport, from organic disease of the heart.

**George S. Turner**, Krebs, Okla.; Missouri Medical College, St. Louis, 1895; member of the Oklahoma State Medical Association; aged 52; died in November, from cerebral hemorrhage.

**William Viney Clark** ⊕ Springfield, Ill.; St. Louis College of Physicians and Surgeons, St. Louis, 1908; aged 51; died, December 19, from a fracture of the skull when he was struck by a train.

**Charles Busby Conaway**, Torrington, Wyo.; Drake University College of Medicine, Des Moines, Iowa, 1907; aged 39; died, November 15, at Colorado Springs, Colo., from tuberculosis.

**Benton Brengleman Dunn**, Perry, Ill.; Rush Medical College, Chicago, 1891; served in the M. C., U. S. Army, during the World War; aged 54; died in December, from appendicitis.

**Albert L. Converse**, Springfield, Ill.; Chicago Medical College, 1864; for two terms member of the state legislature; chairman of the board of supervisors; aged 80; died, December 7.

**Thomas Pack Vann**, Eva, Ala.; Chattanooga Medical College, Chattanooga, Tenn., 1905; aged 48; was killed, December 8, when the car in which he was driving was wrecked.

**Samuel Renwick Wills McCune** ⊕ New Castle, Pa.; Jefferson Medical College, Philadelphia, 1906; served in the M. C., U. S. Army, during the World War; aged 47; died, December 9.

**Joseph Henry Hull**, Washington, Iowa; Bellevue Hospital Medical College, New York, 1875; member of the Iowa State Medical Society; aged 72; died, December 17, from paralysis.

**Leon Vasco Parker**, Minot, N. D.; Rush Medical College, Chicago, 1920; member of the North Dakota State Medical Association; aged 39; died in December, from diphtheria.

**Rufus F. Blount**, Wabash, Ind.; Chicago Medical College, 1865; Civil War veteran; aged 91; died, December 15, at the home of his daughter in North Manchester, from senility.

**John Barclay Laidley**, Carmichaels, Pa.; Western Reserve University School of Medicine, Cleveland, 1856; Civil War veteran; aged 92; died, December 15, from pneumonia.

**Emmett E. Gray**, Quincy, Ind.; American Health College, Cincinnati, 1893; aged 65; died, November 19, at St. Mary's Hospital, Roswell, N. M., from bronchopneumonia.

**D. W. Cowan**, Sandstone, Minn.; University of Manitoba Faculty of Medicine, Winnipeg, Man., Canada, 1888; formerly state senator for Minnesota; died recently.

**Joseph B. Du Rant**, Lake City, S. C.; University of the South Medical Department, Sewanee, Tenn., 1900; aged 46; died, December 8, from influenza and pneumonia.

**J. Whitney Barstow**, Flushing, N. Y.; Dartmouth Medical School, Hanover, N. H., 1852; for forty years in charge of the Sanford Hall; aged 96; died, December 16.

**Massie L. McCue**, Greenwood, Va.; University of Virginia Department of Medicine, Charlottesville, Va., 1873; aged 74; died, November 15, from cerebral hemorrhage.

**William Tonkin**, Reading, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1886; aged 66; died, December 9, from cerebral hemorrhage.

**Henry Marcellus Smith**, Lee, Mass.; University of Vermont College of Medicine, Burlington, Vt., 1885; formerly city physician; aged 70; died recently.

**John Karagiozian**, Louisville, Ky.; Louisville Medical College, 1907; formerly a medical missionary in Armenia; died, December 6, aged 62.

**William Philander Walker**, Mason City, Ill.; Rush Medical College, Chicago, 1879; aged 66; died, December 11, from cerebral hemorrhage.

**James J. McNulty**, Philadelphia; Medico-Chirurgical College of Philadelphia, 1903; aged 43; died, December 15, from cerebral hemorrhage.

**Jesse Beale Gallaspy**, Newton, Miss.; University of Nashville Medical Department, 1907; aged 40; died, December 14, from heart disease.

**Leroy A. Ellis** ⊕ Van Wert, Ohio; Cleveland University of Medicine and Surgery, 1896; aged 58; died in December, from heart disease.

**Matthew Hill Grimmet**, Greenvale, Tenn.; Vanderbilt University Medical Department, Nashville, Tenn., 1878; aged 74; died, December 12.

**Felix R. Collard**, Wheelock, Texas; Medical College of Louisiana, New Orleans, 1869; Civil War veteran; aged 78; died, December 13.

**David W. Farnsworth**, Cherokee, Iowa; State University of Iowa College of Medicine, Iowa City, 1885; aged 71; died, December 16.

**Charles O. Jenison**, Greenville, Mich.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1877; aged 83; died, December 8.

**Curtis Allen Lambert**, Chicago; Miami Medical College, Cincinnati, 1871; aged 76; died, December 28, from acute indigestion.

**William Dynes Starkey**, Zionsville, Ind.; Indiana Medical College, Indianapolis, 1875; aged 85; died suddenly, December 3.

**Stephen W. Cox**, Chicago; Rush Medical College, Chicago, 1889; aged 65; died, December 24, from valvular heart disease.

**Callie S. Walker**, Kansas City, Mo.; Woman's Medical College, Kansas City, Mo., 1901; died, December 9, aged 69.

**Robert Cofer Barrett**, Philadelphia; Medical College of Virginia, Richmond, Va., 1914; aged 37; died, December 5.

**George F. Garinger**, Asherton, Pa.; Jefferson Medical College, Philadelphia, 1873; aged 72; died, December 2.

**Aretus Kent Norton**, St. Paul; Chicago Medical College, 1872; aged 72; died, December 10, from heart disease.



## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

### SOME SOUND FINANCIAL ADVICE FOR PHYSICIANS AND MEDICAL ADVICE FOR LAYMEN

In an excellent little publication put out by *McClure's Magazine* and entitled "McClure's Financial Booklet," Paul Tomlinson, its author, gives some sage advice on "How to Avoid Worthless Stocks" and on many other financial subjects. Helen M. Davis, who is not a physician, but who, evidently, has a broad and intelligent outlook on things medical, has paraphrased Mr. Tomlinson's financial Don'ts so as to make them applicable to the medical, instead of the financial world. We give below both Mr. Tomlinson's original advice on "How to Avoid Worthless Stocks" and Mrs. Davis' paraphrase thereon. The latter contains information of especial value to the general public, the former is of value equally to the public and to the medical profession.

*Avoid stocks whose promoters in their pamphlets show any of the following tendencies:*

1. Ridiculing of conservative savings banks.

2. Denouncing Wall Street (which may or may not be a very bad place, but is invariably denounced by stock promoters for their own purposes and to throw a blind over their own operations).

3. Failure to state conspicuously the par value of the stock, or the fact that it has no par value, if that be the case.

4. Selling the stock at some absurdly low price, such as two cents a share.

5. Promise of enormous dividends.

6. Attempts to work the hurry-hurry game.

7. Advancing the price of the stock by vote of the directors. This is sometimes done by legitimate concerns, but they do not make a hue and cry of it in their circulars, as the swindlers do.

8. Offering a limited number of shares to one person.

9. Declaring that the present allotment of stock will soon be exhausted. Even if it is, which is unlikely, there are literally thousands of other good investments, and probably five thousand legitimate, reputable brokers, bankers, banks and trust companies ready to sell them to you.

10. Calling attention to the profits of some other company instead of their own. This is the surest sign of an illegitimate stock. Especially beware of any concern that calls attention to the profits of the Bell Telephone Co. Practically every swindler in the country uses this company as an illustration.

*Avoid medical treatments whose promoters in their advertisements show any of the following tendencies:*

1. Ridiculing of conservative medical treatments.

2. Denouncing the American Medical Association (which may or may not be a "trust" and an "octopus," but is invariably denounced by quacks for their own purposes and to throw a blind over their own operations).

3. Failure to state conspicuously the scientific tests by which the value of the treatment has been measured, or the fact that no such tests have been made, if that be the case.

4. Selling the treatment at some absurdly high price, so that its practitioners make \$1,000 to \$2,000 a week.

5. Promise of miraculous cures.

6. Attempts to scare the patient into the belief that he has some terrible disease, especially cancer or syphilis.

7. Decreasing the price of the treatment for those who do not bite at once. The sliding scale of prices is one of the earmarks of medical mail-order quackery.

8. Offering an unlimited number of minor ailments as symptoms of disease.

9. Declaring that their own system is the only sure cure that has ever been discovered. There is no sure cure of disease except that made by nature, and only those with a thorough knowledge of the body are in a position to be able to help nature make the cure.

10. Calling attention to the failure of scientists to recognize some discovery fifty or a hundred years ago. This is the surest sign of a quack. The attitude of scientists is more open-minded now than ever before to new discoveries of provable value.

11. As a general principle, stocks in mining and oil companies, with a few notable exceptions, in companies promoting new inventions, or a single proprietary or patented article, in fruit and nut orchards, land companies, in the great bulk of moving-picture companies, should be left severely alone unless there is special, careful investigation. As for nearly all the new stocks, remember they are at best speculations. They may turn out well, but can you afford the risk? New stocks, "maiden offerings," may hold out great possibilities, but you should be a close student of such opportunities before venturing into them.

12. *Use common sense.* Ninety-nine times out of a hundred you will not be "let into" a fake proposition if you consult your banker or any reputable newspaper or magazine. Losses are of constant occurrence in every business; but at least be sensible enough to avoid the stock that is worthless at the start and never has a chance of success.

11. As a general principle, pseudo-electrical or pseudomagnetic treatments, "patent medicines," freak diets and all treatments characterized by mystery should be left severely alone unless there is special, careful investigation. As for new treatments, remember that those brought out by obscure doctors with shady records are at best speculations. They may not kill you, but can you afford the risk? New scientific treatments are always thoroughly tried out on animals before they are even experimentally tried on people. Contrary to the impression which quacks try to give, modern physicians do not make a mystery of their treatments to people who desire to study such treatments before taking them.

12. *Use common sense.* Ninety-nine times out of a hundred you will not be "let into" a fake proposition if you consult your family physician about the "symptoms" which the quack declares mean his pet disease (even while he rants against wrong diagnosis). Diseases are constantly occurring; but at least be sensible enough to find out whether you really have them before you start having them "cured"; and if you have, avoid the treatment that is worthless at the start and never has a chance of success.

### MORE MISBRANDED NOSTRUMS

#### Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

**C. J. C. Regulator and C. J. C. Liniment.**—Chester J. Czarnecki who traded as C. J. Czarnecki at South Bend, Ind., shipped in April, 1920, a quantity of "C. J. C. Regulator" and "C. J. C. Liniment" which were misbranded. Analysis of a sample of *C. J. C. Regulator* by the Bureau of Chemistry showed the product to contain iron chlorid, a small amount of plant material, a trace of oil of tansy and 18 per cent. of alcohol. The preparation was declared misbranded first, because it was labeled as containing 28 per cent. alcohol when it only contained 18 per cent. and further because it was falsely and fraudulently claimed as an effective remedy, treatment and cure for painful menstruation, hysteria, diseases peculiar to women, etc. The *C. J. C. Liniment*, according to the federal chemists, contained camphor, menthol, 5.2 grains of chloral hydrate to each fluid ounce, ether, ammonia and 63 per cent. of alcohol. The liniment was declared misbranded first, because, while it contained chloral hydrate, the quantity or proportion of this drug was not stated on the label. Neither did the label contain a statement of the quantity or proportion of alcohol and ether present in the liniment. Furthermore it was declared that the therapeutic claims were false and fraudulent, the liniment being described as an effective remedy, treatment or cure of rheumatism, influenza, neuralgia, colds, sore throat, pneumonia, etc. In May, 1922, Chester J. Czarnecki pleaded guilty and was fined \$800 and costs.—[*Notice of Judgment No. 10553; issued Nov. 4, 1922.*]

**Allan's Red Wash and Parrott Mixture.**—The Allan-Pfeiffer Chemical Co., East St. Louis, Ill., shipped in July, 1920, a quantity of "Allan's Red Wash and Sandalwood Emulsion Compound" and also "Parrott Mixture" which were misbranded. The federal chemists reported that analysis showed "Allan's Red Wash" to contain zinc sulphate, boric acid, a phenol, eucalyptol, a trace of alkaloid and water; the "Sandalwood Emulsion Compound" contained santal oil, mineral oil, methyl salicylate, copaiba, small amounts of magnesium and calcium salts and water; the "Parrott Mixture" was reported to consist of an emulsion of turpentine oil, methyl salicylate, camphor, copaiba, gum and water. These products were all falsely and fraudulently labeled as

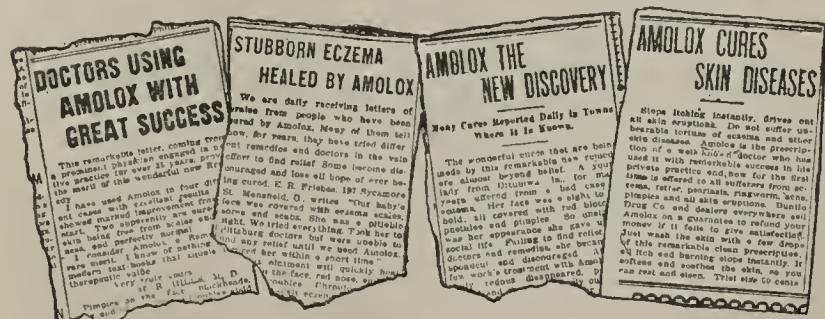


effective remedies for gonorrhea and gleet. In August, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 10627; issued Nov. 8, 1922.*]

**Parrott Sexual Pills.**—The Allan-Pfeiffer Chemical Co., St. Louis, Mo., shipped in April, 1921, a quantity of this product, which was misbranded. The Bureau of Chemistry reported that analysis showed the pills to contain strychnin, and a compound of iron and phosphorus. They were falsely and fraudulently recommended for hysteria, dizziness, nervous prostration, nervous debility and general weakness. In June, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 10648; issued Nov. 8, 1922.*]

**Am-O-Lox Ointment and Am-O-Lox Prescription.**—The Am-O-Lox Co., Youngstown, Ohio, shipped in September, 1918, and June, 1919, a quantity of "Am-O-Lox Ointment" and "Am-O-Lox Prescription" which were misbranded.

**Am-O-Lox Ointment**, when analyzed by the federal chemists, was reported to consist essentially of zinc oxid, sulphur, phenol, methyl salicylate and a small amount of dye in a base composed of petrolatum and paraffin. The preparation was falsely and fraudulently represented as an effective treatment, remedy and cure (when used with "Am-O-Lox Prescription") for eczema and all skin diseases, salt rheum, tetter, eczema of the hands, psoriasis, dandruff, all diseases of the scalp, barber's itch, ring worm, pimples, blackheads, piles, ulcers, boils, burns, red nose, hives and several other things.



"Am-O-Lox Prescription," the federal chemists reported, consisted essentially of glycerin, carbolic acid, salicylic acid, methyl salicylate, alcohol and water with coloring matter. It was falsely and fraudulently represented as a treatment, remedy and cure (when used with "Am-O-Lox Ointment") for all the conditions that Am-O-Lox Ointment was said to be good for. In September, 1921, the defendant company entered a plea of *nolo contendere* and was fined \$25 and costs.—[*Notice of Judgment No. 10360; issued July 26, 1922.*]

**Vigoron.**—The Sydney Ross Co. of New York City, in November, 1919, and April, 1920, shipped from the State of New York to the State of California forty-two dozen bottles of "Vigoron" which were misbranded. The Bureau of Chemistry reported that analysis showed this product to consist of sugar-coated pills containing compounds of iron, manganese, zinc, arsenic, phosphorus and strychnin. Some of the claims made for the preparation were:

"A Blood Making and Purifying Tonic for . . . Neurasthenia."  
"The Supreme Blood and Nerve Tonic. Recommended for . . . Neurasthenia, Nervous Irritability . . . Impotence, Irregular Menstruation . . . and General Conditions of Debility."  
"The woman who expects to become a mother should not use Vigoron until the fourth month."

The therapeutic claims made for this nostrum were declared false and fraudulent and in May, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 10633; issued Nov. 8, 1922.*]

**The Enemy Within the Gates.**—"The Profession of Physic has been openly Assaulted, or secretly Undermined, by all the Quacks and ignorant Unlicen'st Practicers. But it has suffer'd much more from the Impudence, or Ignorance, or Imprudence of many of the Physicians."—The Craft and Frauds of Physic Expos'd. By R. Pitt, M.D., London, 1703.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### TAENIA SOLIUM—TAPEWORM OF PORK

**To the Editor:**—The specific name *solium*, used in connection with the tapeworm of pork, seems to be a mystery; I am unable to make out its origin or its significance. If it were from *solus*, meaning "the lone tapeworm," the letter "i" has no business in the word. Moreover, the adjective ought then to agree with its substantive in gender, i. e., the name should be *Taenia sola*.

JOHN W. SHUMAN, M.D., Beirut, Syria.

Professor, American University  
of Beirut

**ANSWER.**—Much time has been used by various persons in trying to trace the origin of the word *solium* in the technical name *Taenia solium*, and the sum total of the result is the conclusion that the origin of this word is not known. One view is that it comes from the Syrian word *schuschl*, which signifies a chain. The Arabs are supposed to have changed this word into *susl* or *sosl*, which became *sol* in the romance languages. By adding the ending *ium*, the word *solium* has been obtained. This, however, is not the only explanation of the possible origin of the word; for instance, it is entirely possible, and has been suggested, that *solium* is a popular rendition of the word *solus* (alone); one author, Villeneuve, who lived about 1300, and who wrote in Latin, states that "some say these cucurbitini are generated in the stomach of a very large earthworm which is sometimes passed longer than one or two arms and which is called a 'solium' or a 'cingulum'" (quidam dicunt quod isti cucurbitini generantur in ventre cuiusdam maximi lumbrici qui aliquando emittitur longior uno vel duobus brachiis, qui *solium* sive *cingulum* dicitur). An early French author (Andry) inclined to the view that *solium* is so called because it is usually alone, namely, there is usually only one of its species in the intestine.

From the standpoint of zoological nomenclature, zoological names begin with 1758, and we do not have to go back of this date for the specific combination *Taenia solium*. Linnaeus, in 1758, published the name *Taenia solium*, but did not give its derivation; accordingly, since its derivation is now in dispute, we can view it under Article 8k of the International Rules of Nomenclature as a barbarous name without known Latin derivation, and this is the usual interpretation that is now accepted. It is entirely possible that *solium* is a vernacular for *solum*; it is entirely possible that it may have some other derivation. Whatever its derivation is, it now stands under the rules as a barbarous name, and is hence not subject to emendation or correction of any kind. The International Rules (Article 19) demand that in order to justify the emendation of a name, the point must be clear that an error of transliteration, a typographic error or a *lapsus calami* is present. In the case of *solium* this is not evident; hence the name cannot be changed, and we continue to use the name *Taenia solium*.

### NUMBER 10 PROTEIN SUBSTANCES

**To the Editor:**—Have you any definite information as to the reliability of Horovitz Protein No. 10 for syphilis? Is it a reliable product? My attention was called to it and I wrote the Horovitz Bio-Chemic Laboratory for figures and proof. I received circulars and a letter assuring me, but no proof. Can you give me any definite information?

R. C. ADAMS, M.D., Bird Island, Minn.

**ANSWER.**—We know of no scientific evidence to indicate that Number 10 Protein Substances of the Horovitz Bio-Chemic Laboratories Co. is a product which will cure syphilis. The product is essentially secret in composition. The claims made for it are unwarranted and may lead physicians to use the product unwisely. A. S. Horovitz, president of the Horovitz Bio-Chemic Laboratories Co., was referred to in connection with the asserted cancer cure "Autolysin" (The Horovitz-Beebe Treatment for Cancer, THE JOURNAL A. M. A., July 24, 1915, p. 336). Later he was connected with the Wm. S. Merrell Co. and appears to have been largely responsible for this firm's line of "Proteogens" which the Council on Pharmacy and Chemistry declared inadmissible to New and



Nonofficial Remedies (Proteogens of the Wm. S. Merrell Company, *THE JOURNAL A. M. A.*, July 12, 1919, p. 128), and the marketing of which *THE JOURNAL* characterizes as "another attempt to foist on our profession a series of essentially secret preparations whose therapeutic value has not been scientifically demonstrated." In the claims advanced for them, the products marketed by the Horovitz Biochemic Laboratories Co. bear a striking resemblance to the Merrell Proteogens. As in the case of the Proteogens, the Horovitz Laboratories have a list of "Protein Substances," each of which is claimed to be more or less specific against a given disease or condition.

TREATMENT FOR TAPEWORM

To the Editor:—Please describe the most satisfactory treatment for tapeworms infesting an 8 year old boy. INQUIRER, Virginia.

ANSWER.—An excellent tapeworm remedy for a child is pelletierin tannate, because its taste is more easily disguised than that of the oleoresin of aspidium. The dose for an 8 year old child, according to Young's rule, would be two fifths of the adult dose, or from 0.08 to 0.12 gm. (the adult dose being given at from 0.20 to 0.30 gm.). This remedy is best administered dissolved in 30 c.c. of a syrup, for instance, syrup of citric acid, or in one of the aqueous elixirs of the National Formulary, such as the aqueous elixir of glycyrrhiza.

The oleoresin of aspidium, which is more difficult to disguise, would be administered in a dose of 3 gm., which is approximately two fifths of the adult dose of 8 gm. This might be given in the form of an emulsion, or mixed with honey or fruit preserves. It is almost hopeless, however, to render this dose palatable.

On the day preceding, it would be best to give a liquid diet, with mild mercurous chlorid (calomel), solution of magnesium citrate and colonic flushing to secure as clean an alimentary tract as possible. On the morning of the treatment the patient should stay in bed and be given a full dose of the remedy selected. If the patient is in bad physical condition or has considerable irritation of the alimentary tract, a smaller dose is preferable for the sake of safety, to be increased in case of failure at the next administration, for which it is best to wait a few weeks.

From one to two hours after the dose, the patient is given a wine-glassful of solution of magnesium citrate every hour until profuse evacuation has been secured.

ARGYRIA

To the Editor:—I have a patient who treated his throat with local application of silver nitrate for several years. Later his skin gradually became quite dark and has remained so ever since. He is in perfect health and has no renal trouble. Do you know of any remedy to remove the effects of the silver nitrate? Please omit my name.

PHYSICIAN, Iowa.

ANSWER.—The patient evidently has argyria as a result of the persistent use of silver nitrate locally in the throat. The pigmentation is due to the actual deposit of the silver in the tissues, and it is irremediable.

USE OF PERTUSSIS VACCINE

To the Editor:—Please allow me to ask whether the period of contagion in pertussis is shortened by the treatment of the disease with pertussis vaccine. I have in mind a child, aged 18 months, in whom the disease came on abruptly. Vaccine treatment was started at once, and after four treatments of vaccine there is apparently a clinical cure: Vomiting, whooping, paroxysmal coughing have all ceased; the lungs are clear; the cough now is single or in couplets, and occurs only three or four times a day. Under these conditions would it be proper for a brother who has had preventive vaccine treatment to attend school, he being free of all symptoms of whooping cough after two weeks of exposure? If answered in *THE JOURNAL*, please do not publish my name.

M.D., Indiana.

ANSWER.—Regulations as to quarantine of cases of whooping cough vary in different places. It has been customary to extend the quarantine until the paroxysmal stage has terminated. The regulations of the Illinois department of health require quarantine "until five weeks after the development of the characteristic whoop or paroxysmal cough, or until one week after the characteristic whoop has disappeared."

There is much evidence that the danger of spread of infection is slight by the time that the characteristic whoop has well developed. This is indicated by the experience of hospitals and institutions for children, in which whooping cough is usually introduced by children who have the disease in the catarrhal stage, and rarely by those who have well developed paroxysms.

There appear to be no data at hand by which the effect of vaccines on the period of contagion of whooping cough can be estimated. The same rules would probably be valid as in unvaccinated cases.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

- ALABAMA: Montgomery, Jan. 9. Chairman, Dr. Samuel W. Welch, Montgomery.
- DISTRICT OF COLUMBIA: Washington, Jan. 9. Sec., Dr. Edgar P. Copeland, Stoneleigh Court, Washington.
- HAWAII: Honolulu, Jan. 8. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.
- ILLINOIS: Chicago, Jan. 9-11. Supt. of Registration, Mr. V. C. Michels, Springfield.
- INDIANA: Indianapolis, Jan. 9. Sec., Dr. W. T. Gott, Crawfordsville.
- KANSAS: Topeka, Feb. 13. Sec., Dr. Albert S. Ross, Sabetha.
- NATIONAL BOARD OF MEDICAL EXAMINERS: Written examination in Class A medical schools. Part I and II, February 12-14 and February 15-16. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for the February examination must be sent in by January 1.
- NEW MEXICO: Santa Fe, Jan. 8-9. Sec., Dr. R. E. McBride, Las Cruces.
- OKLAHOMA: Oklahoma City, Jan. 9-10. Sec., Dr. J. M. Byrum, Shawnee.
- PENNSYLVANIA: Philadelphia, Jan. 30-Feb. 3. Sec., Mr. C. D. Koch, Professional Credentials Bureau, 422 Perry Bldg., Philadelphia.
- SOUTH DAKOTA: Pierre, Jan. 16. Director, Dr. H. R. Kenaston, Bonesteel.
- VERMONT: Burlington, Feb. 13. Sec., Dr. W. Scott Nay, Underhill.
- WEST VIRGINIA: Charleston, Jan. 9. State Health Commissioner, Dr. W. S. Henshaw, Charleston.
- WISCONSIN: Madison, Jan. 9-11. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

Georgia October Examination

Dr. C. T. Nolan, secretary, Georgia State Board of Medical Examiners, reports the written examination held at Atlanta, Oct. 10-12, 1922. The examination covered 10 subjects and included 100 questions. An average of 80 per cent. was required to pass. Of the 6 candidates examined, 5 passed and 1 failed. Five candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per
			Cent.
University of Michigan Medical School.....	(1922)		92.7
Eclectic Medical College.....	(1922)		90.9
Ohio State University College of Medicine.....	(1921)		90.6
Medical College of the State of South Carolina.....	(1922)		94.7
University of Virginia.....	(1920)		94.5
FAILED			
Meharry Medical College.....	(1915)		72
College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity
			with
Tulane University.....	(1922)		Louisiana
Johns Hopkins University.....	(1918)		Maryland
University of Pennsylvania.....	(1914)		Minnesota
Meharry Medical College.....	(1917)		Tennessee
University of Zurich.....	(1917)		Dist. Colum.

Montana April Examination

Dr. S. A. Cooney, secretary, Montana State Board of Medical Examiners, reports the written examination held at Helena, April 4-6, 1922. The examination covered 10 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 5 candidates examined, 4 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per
			Cent.
Northwestern University.....	(1921)	78.3, (1922)	78
Washington University.....	(1910)		80.8
Medical College of Virginia.....	(1918)		80.1
FAILED			
Ensworth Medical College.....	(1909)		67



## Medical Economics

### THE PROBLEM OF PERSONAL MEDICAL ADVERTISING

M. L. HARRIS, M.D.  
CHICAGO

Advertising seems to be one of the most popular occupations of a constantly increasing percentage of the medical profession today. It may be of interest to physicians to be brought face to face with an iniquity which, unchecked, is certain to bring disgrace to the profession. "To advertise" is practically defined in the dictionary "to consist in publishing in a newspaper or in some similar way statements generally designed to promote the financial or other interests of the person concerned." It is perfectly evident from this definition that the motive which underlies advertising is one of selfish acquisitiveness, and that it is not based on the desire to impart information.

It seems to be difficult or impossible for some persons to distinguish the difference between imparting useful information concerning health matters to the public, and advertising their own particular abilities. In the practice of medicine, which from its very essence must forever be impregnated with humanitarianism, self-exploitation can find no justification if one has due regard for the imperfections of medical science and for the ability of others. There is no man, no group of men, so possessed of medical knowledge that they should be blinded to a realization of their own insufficiency.

The extent to which individual members as well as groups of members of the profession under various high-sounding titles are soliciting patients by methods of advertising which are flagrant violations of the principles of ethics as well as of ordinary decency is growing at an alarming speed. Scarcely a day passes that some new form of advertising is not brought to the attention of the Judicial Council of the American Medical Association, and during the last six months an extraordinary number of matters of this kind have been presented to the Council. Some of these advertisements are camouflaged under the guise of bulletins or announcements, the bulletin of the ——— group or the ——— clinic; others are just plain out and out advertisements in the newspapers. Some of the bulletins which are issued periodically are distributed quite freely throughout the territory supposed to be tributary to the particular group. They often contain two or three pages of short clippings from medical journals to give them the appearance of having been sent out for the purpose of distributing useful knowledge; then follows the little ad., such as:

Dr. So and So, of our group, has just returned from a visit to such a center, or clinic, and has brought with him some wonderful knowledge, or method, or device, which will enable this group to do something which no one else in that vicinity is prepared to do.

Or there may be reported in brief a case, somewhat as follows:

CASE 41144.—Mrs. Blank suffered many years; consulted several physicians in the neighborhood without relief; referred to our "academy" or "clinic." An examination by our group of experts resulted in a correct diagnosis being made for the first time, and the patient was cured, etc.

In detailing these examinations, many tests are frequently mentioned for the purpose of impressing the readers with the great knowledge and thoroughness of the group examinations, it being immaterial whether all of the tests mentioned were necessary to the making of a correct diagnosis or not.

Another method of advertising is to publish in the newspaper an extensive write-up of the group or clinic, contain-

ing an elaborate description of the offices, of the wonderful paraphernalia and equipment, and last, but by no means least, a complete and unexpurgated pedigree of each and all of the members of the group, with their pictures. The character of these write-ups is such as to make it perfectly evident that they must have been written by the physicians themselves.

I should like to present a few excerpts from some of these advertisements which have been received recently.

Dr. A has had the most extensive and thorough medical training of any doctor in ———.

Dr. B is the premier surgeon of this community. ———'s position as a surgical center of this territory is due largely to his successful practice of surgery.

More than 1,000 residents of ——— were assisted into the world by Dr. C. In the course of so extensive obstetrical practice it necessarily follows that he has encountered almost every kind of difficult labor, and his results have demonstrated his ability to cope with these emergencies as they arise.

Training that comes of the examination of more than 10,000 patients is brought to the ——— clinic by Dr. D, the clinic roentgenologist.

Dr. E has had the most extensive and varied medical practice of any doctor in ———.

Dr. F is the Nestor of the medical profession of the city of ———. The extent of his practice is indicated by the fact that his prescription number on ——— date of the current year was 126959. In the course of his many years of practice there is hardly a disease or ailment flesh is heir to that the doctor has not been called upon to treat.

I am sorry that time does not permit me to quote more of these interesting and instructive excerpts. These are all taken from newspaper ads of the pedigrees of these group doctors, each one being accompanied by a picture of the doctor. I am sure you will agree with me that none of these doctors is liable to fall dead of modesty. I will read a few more excerpts from a newspaper advertisement of a recent group in another city:

"The general practitioner must depend upon his reputation for skill and his personality to draw patronage to his office." This particular group is to do away with this old fogey idea, as it is evidently going to depend on advertising to get its patients. It is certainly amazing and something novel in the history of medicine for medical men to deplore the fact that the physician should be obliged to secure his patients by reason of his professional skill and pleasing personality.

Has it come to pass in the practice of medicine that knowledge and skill and ability and personality are to be rated below printers' ink and audacity in advertising? Are we to return to the days of the blatant quack extolling his own wonderful virtues in printed prose and hawking them from the street corners? Have we arrived at a time when the physician's ability and skill are to be gaged by the number on his last prescription?

Another quotation—and this is a sub headline in a newspaper—"Eliminates competition." "It has been said that the profession of medicine is highly competitive, especially in the smaller cities, each physician being a competitor of every other physician." This clinic states it is going to do away with competition because every doctor in the group is to share in the profits of the business. Do the physicians of this group think for a minute that group practice is going to do away with competition? Does the group imagine that it is going to secure all of the medical business of that community? How absurd. We already have the disgraceful spectacle of two groups in the same town, each advertising its superiority over the other. How long can physicians making use of such tactics hope to retain the respect and confidence of the people?

Just a few more excerpts: "The physicians of the clinic are 'physicians first,' devoting their entire time to caring



for patients, while an entirely separate department looks after all matters of a business nature, such as the settling of accounts. . . . The troublesome relationship concerning payment of fees and bills is largely eliminated, as the physician is concerned only with the patient's sickness. The business manager must look after all else." What has become of the humanitarian spirit in the practice of medicine, the cherished inheritance of the ages, when physicians announce in the daily press that hereafter they will be so occupied in caring for the physical welfare of their patients that they have turned over to a business agent all business matters, such as all charges, fees, bills, etc., and then incidentally mention in the same announcement that patients will please see the business manager before making an appointment with the doctor? This is prostituting an altruistic profession to plain, outright commercialism. What a mockery are the Principles of Ethics when physicians pledged to support and follow them deliberately and openly trample them in the dirt. If the medical profession is to save itself from everlasting disgrace, something will have to be done to prevent its degenerating into vulgar commercialism by way of newspaper advertising and similar methods.

### Book Notices

HANDBUCH DER GESAMTEN MEDIZINISCHEN ANWENDUNGEN DER ELEKTRIZITÄT INSCHLIESSLICH DER RÖNTGENLEHRE. In drei Bänden bearbeitet von zahlreichen Fachgelehrten des In- und Auslandes. Herausgegeben von Prof. Dr. med. H. Boruttau, Privatdozent der Physiologie an der Universität Berlin, und Prof. Dr. med. L. Mann, Privatdozent der Nervenheilkunde an der Universität Breslau. Mitherausgeber für den Röntgenband: Prof. Dr. med. M. Levy-Dorn, Leitender Arzt am Rudolf-Virchow-Krankenhaus in Berlin, und Prof. med. P. Krause, Direktor d. medizinischen Universitätspoliklinik in Bonn. Band III, Lieferung I: Das röntgentherapeutische Instrumentarium. Von Dr. Heinrich Martius, Privatdozent und I. Assistent der Univ.-Frauenklinik in Bonn a. Rh. Band III, I. Teil, Lieferung I: Die Röntgenphysik, die allgemeine Röntgentechnik, das diagnostische Röntgenverfahren (allgemeiner Teil). Von Prof. Dr. M. Levy-Dorn, Leitender Arzt am Rudolf-Virchow-Krankenhaus. Band III, 2. Teil, Lieferung 2: Grundlagen der Dosimetrie der Röntgenstrahlen. Von Dr. med. Hans Th. Sehreus, Privatdozent und Assistent an der Universitätsklinik für Hautkrankheiten in Bonn o. Rh. Leipzig: Dr. Werner Klinkhardt, 1922.

This is the third volume of a handbook dealing with the application of electricity to medical work and with the physics of roentgen rays. In the introductory pages an outline is given of the modern conceptions of the fundamental electric theories, restricted to the points that are necessary for an understanding of the genesis and nature of the roentgen rays. The electron theory is touched on, and the terms volt, milliamperes and ohm are explained as to their meaning and application. Electric induction and electromagnetism are defined and elucidated. It is demonstrated how the electric current is not only likely to produce heat but also to furnish chemical action. In the second subdivision, general roentgen technic is taken up. After the principles of the function of a roentgen-ray tube are explained, the various tubes are described. The difference between gas and ion tubes, and tubes of high vacuum and electron tubes are set forth. Half schematic drawings and complete pictures facilitate the understanding of the text, which in its contents is held down to the physical necessities, without putting too high demands on the reader's education in physics. The Coolidge and Lilienfeld tubes are dealt with in a special chapter. Of great value to the roentgenologist are the rules given for the selection of tubes for the various purposes in roentgen-ray photography and treatments. Instruction is furnished concerning prolonging the life of the tubes, and their maintenance at the highest efficiency. Measuring of the hardness and quality of the roentgen rays is explained, and the pertinent apparatus are described as far as practical purposes are concerned. The intention of the author to furnish complete practical information is again demonstrated in the chapters dealing with the appliances that are used for the

holding of the tubes in action and for the placing of the patient, and the fixation of those parts of the body that are the object of examination or treatment. The closing chapter is devoted to the discussion of the making of roentgenograms. The merits of the various plates and films and the method of development are elaborated on, and practical hints are given. In order to facilitate the discussion, the three capital parts of every therapeutic outfit are taken up separately: the generator, which furnishes the high tension currents, producing the cathode rays; the roentgen-ray tubes, in which the cathode rays are transformed into roentgen rays; and the auxiliary implements, the various staves and filters, the roentgen-ray table and all the protective arrangements. The author compares the merits of the self-hardening boiler tubes, the high vacuum tubes, and the tubes whose construction is based on the producing of roentgen rays by thermionization, the Coolidge and Lilienfeld tubes. He appreciates the fact that the Coolidge tube has the advantage that intensity and hardness may be regulated independently, and recommends the use of storage batteries, in preference to any other heating device, for heating the glowing spiral. The last pages are devoted to the discussion of the accessory apparatus, staves, compression tubes, ray collector and tables for appropriately placing the patient. As a whole, the book gives the reader a complete survey of the present status of roentgenology, and is an excellent guide and a fruitful source of information for the physician engaged in practicing roentgen-ray diagnosis and therapy.

CLINICAL MEDICINE. I: Tuesday Clinics at the Johns Hopkins Hospital. By Lewellys F. Barker, M.D., LL.D., Visiting Physician to Johns Hopkins Hospital. Cloth. Price, \$7 net. Pp. 617, with 66 illustrations. Philadelphia: W. B. Saunders Company, 1922.

The chief fault with this book is that it contains too many puerile questions and answers, unnecessary repetitions, and irrelevant facts as to history and physical findings. In the actual clinical conference, many of these things may be admissible and of value. In the edited lecture that is to be read, they are wearisome, time consuming and disconcerting. All the advantages of the clinical lecture—and we agree with Barker that the amphitheater clinic has its place and its advantages—will be retained in the lecture that is rewritten from the stenographic notes and printed, as were Trousseau's lectures, with unnecessary verbiage cut out. Dr. Barker has the learning, the easy command of English, and the clinical material that would enable him to write most entertainingly and instructively. Even as it is, with this fault just mentioned, he has given a volume that will be welcomed by many a practitioner who will find in these thirty-two lectures much helpful, up-to-date information. The reader will appreciate, too, the bibliographies that are appended to each lecture. These are not intended to be complete; but they will stimulate to further study.

UNTERSUCHUNGEN ÜBER DIE KÖRPERLICHEN STÖRUNGEN BEI GEISTESKRANKEN. Von Dr. Otto Wuth, Privatdozent an der Universität München. Paper. Price, \$3.20. Pp. 113. Berlin: Julius Springer, 1922.

This is No. 29 of the monograph series edited by Foerster and Wilmanns. It contains an account of original biochemical investigations, and a review of those of others, in parietic dementia, manic-depressive insanity, epilepsy and dementia praecox. Ten subjects were investigated: the serum albumin content, the albumin globulin quotient, coagulability and the antitryptic titer of the blood, the precipitation of blood corpuscles by sodium citrate, the morphology of the blood, and the sugar, residual nitrogen, creatinin and uric acid in the serum. Those interested in such investigations will find data of value in this work. The author is very sober and cautious in his conclusions.

TASCHENBUCH DER RÖNTGENOLOGIE FÜR AERZTE. Von Dr. Med. Henri Hirsch, Facharzt für Strahlentherapie in Hamburg, and Dr. Med. Rud. Arnold, Facharzt für Röntgenologie in Hamburg. Paper. Price, 90 cent. Pp. 107, with 62 illustrations. Berlin: Julius Springer, 1922.

This little book is intended for the physician who is not a roentgenologist but who desires an insight into what the use of the roentgen ray can offer. The first half deals with diagnosis, the second with the mechanics, technic of appli-



cation and the indication for roentgen-ray therapy. As a little compend or, better yet, as a means of obtaining a short and concise review of the subject, it fills the bill admirably. The outstanding objections, in view of the purpose for which it appears, are that too much is attempted in a small space, and that the illustrations, instead of being reproductions of plates, are diagrammatic in character. Any one who has taught for any length of time knows that diagrams in this important department of diagnosis can never impress the beginner as thoroughly as reproductions of plates. If diagrams accompany the plates, the result is still better. The section dealing with therapy is presented in a much more convincing manner. The general rules to be observed, a few words as to the type of tube, the current, technic, and choice of method are given in fair detail. The author is optimistic as to the value of this form of treatment.

## Medicolegal

### Competent Testimony of Alienist

(*State v. Cerar (Utah)*, 207 Pac. R. 597)

The Supreme Court of Utah, in affirming a conviction of murder, says that it was insisted that there had been error in admitting in evidence the statements of a physician who testified as an expert alienist on behalf of the state with regard to what he had learned from making an examination of the defendant some months after the homicide and about six weeks before the trial. The statements of the physician respecting the defendant's mental condition were full, fair, and explicit in every particular. The court hardly grasps the force of counsel's contention that, in permitting the physician to testify concerning the defendant's mental condition, both past and present, some constitutional right was invaded, because, in stating the result of the physician's examination, the defendant was compelled to give evidence against himself. It certainly would be strange doctrine to permit one charged with a public offense to put in issue his want of mental capacity to commit the offense, and in order to make his plea of want of capacity invulnerable prevent all inquiry into his mental state or condition. The physician frankly stated that, in determining the mental state of the defendant at the time the latter was alleged to have committed the offense, he took into consideration only the facts stated in the hypothetical question. He, however, also said that the defendant's physical and mental condition at the time he made the examination were necessary factors in determining whether the defendant at the time the alleged offense was committed was in fact afflicted with the mental infirmity asserted by his counsel and which had been testified to by a physician who was a witness for the defendant. No one disputed the statements of the state's witness. The court is clearly of the opinion that no error was committed in admitting his statements in evidence.

### Permanent Loss of Member and Total Disability

(*Heaps v. Industrial Commission et al. (Ill.)*, 135 N. E. R. 742)

The Supreme Court of Illinois, in affirming a judgment that confirmed an award of the industrial commission in favor of one Betow, who had been injured while in the employ of Heaps, says that Betow had been blind in his left eye for five years when the injury in question occurred, which was to his right eye. The evidence showed conclusively that, by the injury to his right eye, he was reduced to total blindness, except when his eye was propped open by plasters or other artificial means. If further showed that he was practically blind and unable to do his work when his eye was kept open, and that keeping it open was very injurious to it, because it was not protected from dust and other flying particles by tears and other natural processes. There was no hope of improvement, and very little, if any, of his ever again seeing out of his left eye, even if it was operated on for cataract; and there was every prospect that his right eye would con-

tinue to grow worse and give him less vision. It was not questioned that he was entitled to compensation for his injury, but it was contended that he had not sustained complete loss of use or vision of his eye, and that it was error to award compensation for total disability. But the supreme court thinks that the evidence sustained the claim of Betow that he had suffered the loss of both eyes, or the permanent and complete loss of use thereof, within the meaning of the workmen's compensation act. It was not necessary, to sustain the award in this case, to show total and complete loss of sight under all circumstances. Betow was entirely blind at all times, except when he used artificial means to keep his eye open. When this was done, he had only 12/200 vision, which amounted practically to blindness, and that condition was morally certain to grow worse.

"Permanent loss," as used in the compensation act concerning the loss of an eye, limb, etc., means the taking away of the normal use of the member. The loss of a member is complete when the normal use of the member has been taken away. Ability to do some work by aid of a mechanical device is not inconsistent with complete loss of the use of an eye or a hand. It is now a well-established rule, in Illinois and other states, that where an employee, who previous to his employment has lost an eye, loses the other eye as the result of an injury, or who has lost an arm, and loses a leg as the result of an injury arising out of and in the course of his employment, he is entitled to compensation for total permanent disability. The reason for this rule is that, by the destruction of the one remaining eye, the employee loses all the capacity to see that he has, and an injury causing such a loss of the remaining eye necessarily causes total disability to see.

### Refreshing the Memory—Exhibition of Umbilical Hernia to Jury

(*Walsh v. Chicago Rys. Co. et al. (Ill.)*, 135 N. E. R. 709)

The Supreme Court of Illinois, in affirming a judgment in favor of the plaintiff for damages for personal injuries, says it was urged that there was error in overruling a motion to exclude the testimony of a physician that he had been the examiner for certain insurance companies and in the course of that work had examined the plaintiff, in May, 1914, and that the plaintiff did not then have a hernia. On cross-examination, it was shown that the witness had no independent recollection of so examining the plaintiff; that to refresh his recollection he had read memorandums kept by the company, a part of which he himself had made. It was objected that all of the memorandums were not made by the physician himself, and therefore he should not have been permitted to refresh his recollection therefrom. It has been held by this court, in accordance with standard authorities, that it is not necessary that the writing used by the witness to refresh his recollection be made by the witness himself, or that it be his original writing, provided that, after inspecting the record, he can speak of the facts from his own recollection. Neither is it necessary that the writing thus used be admissible in evidence. It was obvious, from a reading of this physician's testimony, that he was testifying according to his recollection as to the plaintiff's condition in May, 1914, after refreshing his memory from the memorandums made at the time and kept by the company.

It was also urged that error was committed on the trial of this case, in allowing the plaintiff to exhibit the umbilical hernia; that this exhibition of his person could have no other result than to arouse the prejudice of the jury. In view of the character of the injury, and the question whether it was caused by the accident, as the jury found, this court is of the opinion that it could not be fairly held that, in allowing damages of \$2,500, the jury were influenced by passion or prejudice. On the trial of a case, the question whether the injuries to the person shall be shown to the jury is left largely to the discretion of the trial court. When the question bears on the extent of the wound or injury, it is the common practice to exhibit it to the jury, so they may see for themselves its nature and extent. This court finds no error committed by the trial court in its ruling on this point.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Diseases of Children, Chicago

December, 1922, 24, No. 6

- \*Vital Capacity of Lungs of Children in Health and Disease. C. A. Stewart, Minneapolis.—p. 451.
- \*Dehydration in Newly Born. I. H. Bakwin, New York.—p. 497.
- Dehydration Fever in Newly Born. II. H. Bakwin, New York.—p. 508.
- Treatment of Accessory Nasal Sinus Disease in Children. H. B. Lemere, Omaha.—p. 520.
- \*New Eruptive Fever Associated with Stomatitis and Ophthalmia. A. M. Stevens and F. C. Johnson, New York.—p. 526.
- Congenital Duodenal Obstruction: Malrotation of Intestine. Report of Case. B. S. Denzer, New York.—p. 534.

**Vital Capacity of Lungs of Children.**—From Stewart's study it appears evident that the determination of the vital capacity of patients having diseases of the heart and lungs is of distinct clinical value. It is stated that it is inadvisable to use the determination of the vital capacity to the exclusion of other means of making a diagnosis, for occasionally this measurement is very misleading, and might easily lead to serious error if relied on alone. However, with the exercise of proper judgment and care, one usually is able to use the information gained through the measurement of the vital capacity safely and profitably in determining not only the presence but also roughly the extent and progress of disease of the heart and lungs.

**Dehydration in the New-Born.**—Dehydration was studied by Bakwin in newly born babies by correlating weight changes, skin elasticity and serum protein concentration (plasma water). Usually a marked weight loss in the newly born baby is accompanied by a loss of skin elasticity and an increase in the serum concentration (indicating a diminution in skin and plasma water). There are babies, however, who, despite relatively large weight losses, show no evidence of dehydration of the skin or plasma. In these babies, presumably, the water reserve of the tissues at birth is large. On the other hand, there are babies who show evidence of dehydration at birth. The skin alone may be desiccated (loss of skin elasticity without increase in the serum protein concentration) or both skin and plasma may be involved (loss of skin elasticity and increase in serum protein concentration). Since the water content of the baby varies so widely at birth it is impossible to tell from the weight curve alone whether or not a baby is dehydrated. The plasma water per cent. may increase even though there is no increase in weight. Impairment of skin elasticity may, and often does, occur without increase in the plasma concentration. Increase in the plasma concentration is usually, but not always, accompanied by an inelastic skin.

**New Eruptive Fever.**—Stevens and Johnson report two cases of an extraordinary, generalized, eruption with continued fever, inflamed buccal mucosa and severe purulent conjunctivitis. The first patient was seen on the tenth day of illness and followed to recovery. The second patient did not come under observation until the twenty-second day after onset of the illness; but the skin lesions at that time corresponded exactly with those of the first case at the same stage of the disease, and a careful description of the eruption as seen in the first week establishes its identity with that in the first case. No diagnosis could be made to correspond with the symptoms and course of the eruption in these two cases and no description was found of a skin condition in any degree comparable. Both cases occurred in boys, one aged 7, the other 8, coming from widely separated parts of a city, with no possibility of contact. Both cases manifested a purulent conjunctivitis, in the second case going on to panophthalmitis and total loss of vision, and in the first case responding to treatment, but leaving a severe corneal scar. The pus showed pyogenic organisms only, no gonococci. A high and continuous fever was present in both cases, explainable in the second case by a lobar pneumonia, but in the first case without apparent cause other than the skin condition.

#### American Journal of Ophthalmology, Chicago

December, 1922, 5, No. 12

- Opaque Canal of Cloquet with Persistent Hyaloid Artery. H. W. Scarlett, Philadelphia.—p. 941.
- Clinical Observations on Cornea. R. Von der Heydt, Chicago.—p. 943.
- Two Cases of Retinitis Proliferans of Syphilitic and Diabetic Origin. V. L. Raia, Providence, R. I.—p. 946.
- Some Facts About Salicylate Therapy. S. R. Gifford, Omaha.—p. 948.
- Ocular Manifestations in Case of Hypophyseal Syphilis. F. P. Calhoun, Atlanta, Ga.—p. 952.
- Hypophyseal Disease Probably of Syphilitic Origin. B. W. Key, New York.—p. 956.
- Consideration of Cataract Procedures. W. F. Hardy, St. Louis.—p. 961.
- Intra-Ocular Malignant Tumors in Young Children. C. J. Adams, Kokomo, Ind.—p. 967.
- Impressions of Cuban Ophthalmologist. C. B. Welton, Peoria, Ill.—p. 970.
- Infected Corneal Ulcer. E. C. Moulton, Fort Smith, Ark.—p. 972.
- Auto-Ophthalmoscopy. Subjective Examination of Retina. S. I. Eber, Pittsburgh.—p. 973.

#### American Journal of Roentgenology, New York

November, 1922, 9, No. 11

- Foreign Bodies in Bronchus and Esophagus. C. F. Bowen, Columbus, Ohio.—p. 705.
- \*Roentgenologic Study of Pathologic Gallbladder. B. R. Kirklin, Muncie, Ind.—p. 713.
- \*Roentgen Ray in Diagnosis of Scoliosis. F. W. Lamb, Portland, Me.—p. 723.
- Unusual Foreign Body (Lead, Pencil) in the Arm. C. F. Baker, Newark, N. J.—p. 727.
- \*Report of Three Unusual Cases. T. A. Groover, A. C. Christie and E. A. Merritt, Washington, D. C.—p. 729.
- Two Tables Pertaining to Incidence of Bodily Habitus and Time of Complete Gastric Motility in Different Type of Habitus. R. W. Mills, St. Louis.—p. 731.
- Roentgen-Ray Laboratory of University Hospital, Philadelphia. E. P. Pendergrass and W. R. Jamieson, Philadelphia.—p. 735.
- Roentgen-Ray Therapy in Dentistry. J. L. Garretson, Buffalo.—p. 740.
- Van Zwailuwenberg Type of Stereoscope. S. W. Donaldson and E. F. Merrill, Ann Arbor, Mich.—p. 742.
- New Safety Device (Circuit Breaker). H. W. Van Allen, Springfield, Mass.—p. 745.
- Time-Saving Devices for Roentgen-Ray Treatment of Ringworm and Favus of Scalp. G. M. Mackee and G. C. Andrews, New York.—p. 746.
- Marker for Identifying Right and Left Eye Images in Stereoscopic Chest Films. P. C. Hodges, Peking, China.—p. 751.
- New Method of Simultaneous Stereoscopic Observation of Both Mastoids. P. C. Hodges, Peking, China.—p. 753.
- New Radium Applicator for Treatment of Cataracts. B. Allen, Iowa City, Ia.—p. 755.
- Case of Tuberculous Gingivitis Treated with Apparent Success by Radium. G. E. Pfahler and B. P. Widmann, Philadelphia.—p. 756.
- Technic and Statistics in Treatment of Carcinoma of Bladder by Radium. B. S. Barringer, New York.—p. 757.
- Results of Treatment of Carcinoma of Cervix with Statistics and Technic. C. F. Burnam, Baltimore.—p. 765.

**Roentgen-Ray Study of Diseased Gallbladder.**—Kirklin has made a complete roentgenologic gallbladder study of 712 patients, and reported "roentgen-ray evidence of gallbladder pathology, with or without stones in 251 cases. In 214 of these cases in which data could be obtained, the surgeons reported that the gallbladder was normal to palpation in seven cases in which Kirklin had reported positive roentgenologic findings, and in six of the cases in which he had reported negative roentgenologic findings the surgeons reported gallbladder pathology of some form. In other words, the roentgen-ray conclusions were confirmed in all but fourteen cases, or approximately 93.5 per cent. Kirklin urges that a careful roentgenologic investigation should be made of the gallbladder region of every case that is referred for abdominal study.

**Roentgen Ray in Diagnosis of Scoliosis.**—Lamb asserts that a correct diagnosis of scoliosis, even in the earliest stages, may be made by the use of roentgen rays, but only if the operator recognizes the fact that the old positions produce misleading roentgenograms. In making a roentgen-ray diagnosis of scoliosis, the extreme right and left scoliotic position must be used. If the roentgenograms taken in these two positions show the lateral bending and the rotation equal and symmetric there is no deformity. On the other hand, if the roentgenograms are asymmetric there is a fixed deformity.

**Anomaly of Left Lobe of Liver.**—In examining thirty-five cases by the pneumoperitoneum method, Groover, Christie and Merritt have noted an anomaly of the left lobe of the liver in two patients. This lobe was larger than the normal



spleen, but occupied the splenic area, and the spleen was markedly enlarged and displaced downward. In the third case a perinephritic abscess communicated with the pelvis of the kidney.

### American Journal of Syphilis, St. Louis

October, 1922, 6, No. 4

- \*Transmission of Syphilis to Second Generation. J. V. Cooke and P. C. Jeans, St. Louis.—p. 569.
- Practical Observations on Syphilis. IV. Syphilis of Nervous System. H. H. Hazen, Washington, D. C.—p. 586.
- Symmetrical Synovitis of Knee in Congenital Syphilis (Clutton's Joints). J. E. Lane, New Haven, Conn.—p. 611.
- \*Incidence of Syphilis: Analysis of 1,088 Necropsies. W. W. Hala, Brooklyn.—p. 616.
- From Fracastorius to Ehrlich. A. Ravogli, Cincinnati.—p. 623.
- Standard of Cure in Syphilis. A. R. Fraser, Cape Town, S. Africa.—p. 633.
- Standardization of Wassermann Reaction, XXIX. Methods for Establishing Uniform and Standardized Unit of Antigen. J. A. Kolmer, Philadelphia.—p. 651.
- Id. XXXI. New Complement Fixation Test for Syphilis Conducted with Antihuman, Antichicken and Antiox Hemolytic Systems. J. A. Kolmer, Philadelphia.—p. 667.
- Id. XXXII. Comparative Study of New Complement Fixation Test for Syphilis with Other Methods. J. A. Kolmer, Philadelphia.—p. 680.
- Fibroid Subcutaneous Syphiloma; Report of Case Associated with Syphilitic Bursitis; Review of Literature. H. Goodman, New York.—p. 687.
- \*Diffuse Syphilitic Mastitis. W. N. Taylor, Columbus, Ohio.—p. 696.
- Study of Wassermann Reaction in Large Group of Supposedly Nonsyphilitic Persons Including Groups of Diabetics and Nephritics. J. R. Williams, Rochester, N. Y.—p. 703.
- \*Syphilis Complement Fixation Reaction in Pregnancy with Special Reference to Kolmer Reaction. F. C. Smith, Philadelphia.—p. 705.
- Clinical Value of Wassermann Reaction: Comparison of Cholesterinized and Noguchi Antigens (Acetone Insoluble). R. C. Jamieson and H. Ainslee, Detroit.—p. 708.

**Transmission of Syphilis to Second Generation.**—Experience extending over a period of ten years and based on the observation of many hundreds of cases has strengthened the confidence of Cooke and Jeans in the value of the Wassermann reaction in the hereditary form of the disease. It is highly probable that all mothers of syphilitic children are infected, although occasionally mothers of syphilitic infants have negative Wassermann reactions, and more often mothers of older syphilitic children have weakly positive or negative reactions. In all such instances the maternal infection is latent. A strongly positive Wassermann reaction in the mother does not mean that her infant will necessarily be infected and consequently a syphilitic mother may bear a healthy child. When the mother's Wassermann reaction is positive with the cholesterolized antigen only, the chances are about seven to one that the infant is not syphilitic. In most instances the father brings the infection into a family, although nearly 40 per cent. of the fathers of syphilitic children have negative Wassermann reactions (at the time the children are examined). The male may therefore transmit the disease after his infection has become latent. Transmission to the third generation is possible, but is incapable of proof. Identical or single ovum twins born to a syphilitic mother are both infected or both escape the disease; double ovum twins, on the other hand, have the same fate as children of two successive pregnancies, i. e., either, neither, or both may be infected. Adequate treatment of the syphilitic mother during pregnancy will result in a nonsyphilitic infant if the treatment is instituted before the fetus is infected. Subsequent pregnancies are not protected unless treatment is continued. Placentas of syphilitic infants show characteristic diffuse microscopic changes in 27 per cent. of cases. When such changes are present the infant later proves syphilitic in every instance. Syphilitic infants at birth have Wassermann reactions in the following proportion: 37 per cent. negative, 18 per cent. weakly positive and 45 per cent. strongly positive. After the first few weeks or months all syphilitic infants have strongly positive Wassermann reactions. Syphilitic infants over 2 months of age fail to show clinical evidence of the disease at one examination in 50 per cent. of instances. Nonsyphilitic infants may give weakly positive Wassermann reactions at birth which become negative later, but never give strongly positive reactions at birth or any other time. Hutchinson's triad of interstitial keratitis, enamel defects of the upper central incisors, and nerve deafness are rare. In older children with active manifestations

of syphilis the Wassermann reaction is positive in almost 100 per cent. Certain possible exceptions are noted, keratitis being present in each case. A diagnosis of active hereditary syphilis in a child with a negative Wassermann reaction is justifiable only when the clinical evidence of the disease is absolute and unmistakable.

**Incidence of Syphilis.**—The incidence of syphilis in 1,088 necropsies analyzed by Hala was 21.41 per cent. Cardiovascular diseases among the adults showed the highest degree of incidence. The percentage incidence of syphilis among patients of a large city hospital is estimated at 13.8 per cent.

**Diffuse Syphilitic Mastitis.**—Taylor reports a case of diffuse syphilitic infiltration of the whole breast, occurring in a woman, aged 40. The breast was three times the size of the companion breast. Its appearance was that of a red and blue mottled, glistening mass hanging from the chest wall. It was symmetrical, smooth to touch, and no nodules were palpable. The nipple protruded normally; the skin was not adherent and the mass was not adherent to the chest wall. It was of doughy consistency, but not edematous and no definite nodule or nodules could be palpated. On palpation the breast felt very much like a mass of cotton batting wadded under the skin, fat and superficial fascia. There were no painful areas, points of fluctuation, or increase in temperature of the mass. Palpation revealed the whole breast involved in the process. Under treatment with arsphenamin and mercury salicylate, the breast diminished in size rapidly and symmetrically, and at the end of the sixth week had returned to normal size. This patient has persistently had a two plus Wassermann reaction.

**Syphilis Complement Fixation Reaction in Pregnancy.**—In a series of ninety-four cases of pregnancy in which the bloods were examined by Smith during the last three weeks of gestation, falsely positive Wassermann reactions with the Kolmer complement fixation test for syphilis and with the ordinary routine technic were not observed. Smith suggests that the few cases of apparently falsely positive Wassermann reactions in pregnancy recorded in literature may be provocative Wassermann reactions in cases of syphilis.

### Boston Medical and Surgical Journal

Dec. 7, 1922, 187, No. 23

- \*Wassermann Tests in Boston Maternity Hospital. D. L. Belding and C. B. Adams, Boston.—p. 815.
- Changes That Have Occurred in Past 25 Years Having an Effect on Progress of Medicine. A. W. Marsh, Worcester, Mass.—p. 821.
- Backache. W. Dameshek, Boston.—p. 830.
- Case of Bilharziasis from U. S. Marine Hospital No. 2, Chelsea, Mass. W. P. Clare, Chelsea, Mass.—p. 834.
- \*Tuberculosis of Ankle Joint and Tarsus. H. J. Fitzsimmons, Boston.—p. 838.
- Accommodation to Anoxemia of High Altitudes. A. C. Redfield, Boston.—p. 841.
- Clinical Significance of Sudden Abdominal Pain. A. M. Rowley, Hartford, Conn.—p. 844.
- Erythema Multiforme Bullosum Caused by Arsenic. Report of Case. W. J. Macdonald, Boston.—p. 847.

**Wassermann Reaction in Pregnancy.**—In 5,198 routine cases in a maternity hospital, the Wassermann test showed some degree of positivity in 9.2 per cent., was definitely positive in 7.8 and strongly positive in 4.6 per cent. Only 9.8 per cent. of the positive cases gave definite clinical evidence of syphilis, although an additional 19.9 showed suspicious findings. Belding and Adams state that positive Wassermann tests, with cholesterolized antigens, in pregnant women are not comparable to similar tests in nonpregnant women owing to certain blood changes, and therefore do not either represent the actual incidence of syphilis in a community or the per cent. of positive tests in healthy nonpregnant women. Owing to longer exposure, the per cent. of positives increases with age and length of married life. The per cent. of positives increases inversely as the wealth of the patient, and also differs according to occupation. In Boston the urban rate is higher than the suburban and the highest class residential districts show the lowest per cent. of positives, which, in this instance, explains the lower suburban rate.

**Tuberculosis of Ankle Joint and Tarsus.**—From 1868 to 1910, the Orthopedic Clinic of the Children's Hospital of Boston, treated 7,474 cases of bone and joint tuberculosis.



Of these 7,474 cases 213 were of the ankle joint and bones of the foot. In the last ten years there have been treated 1,988 cases of bone tuberculosis; eighty-eight of these being involvement of the ankle joint and bones of the foot. From such comparisons, Fitzsimmons is impressed with the fact that tuberculous lesions in bones and joints are not as frequent as they were ten years ago. The results of various forms of treatment are discussed by Fitzsimmons. From a comparison of data, he feels that the operative treatment of tuberculosis of the ankle joint and tarsus in children is usually harmful. Time is not saved, deformity is not decreased, and motion is not preserved. When the infection is sharply localized so that a direct surgical procedure can be followed, it might be of distinct advantage to resort to careful excision. Unfortunately, at present this is not possible, and, therefore, most surgery is to be avoided. Incision of the soft parts in the direction of the supposedly affected bone or joint has not been of any benefit. The abscess which presents itself and which spontaneously ruptures generally protects the surrounding tissues from invasion and from overwhelming infection. The cases in the operative group that were followed by the quickest healing and usually by the best surgical results were those that had been submitted to small incisions of the fluctuating mass of an abscess about to spontaneously rupture. Tuberculosis of the ankle joint and tarsus in children should be treated conservatively. Local rest by fixation, protecting against the strain and mechanical pressures which the individual bones or points are subjected to, should be rigidly enforced. Heliotherapy definitely aids before as well as in the presence of sinuses. Operative interference should be resorted to only after careful consideration and then the plan of procedure should be definitely understood. There is a greater danger of secondary involvement and general tuberculosis following operations than without. A large proportion of cases of tuberculosis of the ankle joint and tarsus get good functional results with very little deformity, but are more likely to get these results in a shorter time by the nonoperative procedure.

### California State Journal of Medicine, San Francisco

December, 1922, 20, No. 12

- \*Speech Development in Orthopedic Cases. C. G. Stivers, Los Angeles.—p. 421.  
Sacral Anesthesia in Urology. A. J. Scholl, Jr., Rochester, Minn.—p. 423.  
Intratracheal Insufflation Anesthesia. M. Kavanagh, San Francisco.—p. 425.  
Bowel Obstruction Following Operations Occurring During Convalescing Period. A. Weeks and L. Brooks, San Francisco.—p. 428.  
Absence of Prostate Associated with Endocrine Disease. H. Lissner, San Francisco.—p. 430.  
Some Outstanding Features of Recent Progress in Surgery. G. Thomason, Los Angeles.—p. 431.  
Hemorrhoid Problem. S. Hyman, San Francisco.—p. 434.  
Necessity for Immediate and Thorough Roentgenologic Study of All Injuries to Spine. H. W. Chappel, Los Angeles.—p. 436.  
Outlook in Neuropsychiatry. W. F. Schaller, San Francisco.—p. 438.  
Posture in Its Relation to Nutrition. A. E. Meyers, San Francisco.—p. 440.

**Speech Development in Orthopedic Cases.**—In a study of all the admissions to the Orthopedic Hospital School in Los Angeles during four years Stivers found that out of the 1,044 cases there were eighty-two cases of speech defect in addition to the orthopedic troubles. These cases were found in children affected with spasm, incoordination, ataxia, poliomyelitis and faulty postures. Normal children of school age show from 1 to 2 per cent. of speech defects. Crippled children of Los Angeles showed nearly 8 per cent. of speech defects, an example of the well known fact that persons with one developmental defect, in the motor or expressional system, are apt to show other defects.

### Florida Medical Association Journal, St. Augustine and Jacksonville

October, 1922, 9, No. 4

- Aims of Gastro-Enterologist. E. B. Milam, Jacksonville.—p. 63.  
Some Methods of Delivery of Occiput Posterior. E. W. Ayers, Coconut Grove.—p. 67.  
Local Anesthesia Applied to Railway Surgery. J. E. Boyd, Jacksonville.—p. 69.  
Bodily Mechanics. L. F. Carleton, Tampa.—p. 72.

### Journal of Bacteriology, Baltimore

November, 1922, 7, No. 6

- Method for Isolation of Bacteria in Pure Culture from Single Cells and Procedure for Direct Tracing of Bacterial Growth on a Solid Medium. J. Orskov, Copenhagen, Denmark.—p. 537.  
Bacterial Autolysis. W. S. Sturges and L. F. Rettger, New Haven, Conn.—p. 551.  
Bacillus Hemoglobinophilus Canis (Friedberger). T. M. Rivers, Baltimore.—p. 579.  
Salt Effects in Bacterial Growth. III. Salt Effects in Relation to Lag Period and Velocity of Growth. J. M. Sherman, G. E. Holm and W. R. Albus, Washington, D. C.—p. 583.  
"Color Standards" for Colorimetric Determination of H-Ion Concentration. L. S. Medalia, Boston.—p. 589.  
Cause of Explosion in Chocolate Candies. J. Weinzi, Seattle.—p. 599.  
Micro-organisms Concerned in Oxidation of Sulphur in Soil. IV. Solid Medium for Isolation and Cultivation of Thiobacillus Thiooxidans. S. A. Waksman.—p. 605.  
Id. Bacteria Oxidizing Sulphur Under Acid and Alkaline Conditions. S. A. Waksman.—p. 609.

### Military Surgeon, Washington, D. C.

December, 1922, 51, No. 6

- Relations of United States Military and Public Health Service to Civil Practice. A. W. Boswell.—p. 609.  
Brief Summary of "Congrès International de médecine et de pharmacie militaires." W. S. Bainbridge.—p. 614.  
Use of Automatic Absorbable Metallic Sutures and Ligatures. J. S. Gomez.—p. 620.  
Military Surgeon as Specialist. D. N. Carpenter.—p. 624.  
Public Baths and Public Athletic Agencies as Factors in Raising Physical Standard of American Youths for Military Service. C. C. Demmer.—p. 632.  
Some Changes That Have Taken Place in Duties and Activities of Naval Medical Officers, Afloat. C. E. Riggs.—p. 639.  
Bronchopneumonia; Incidence and Diagnosis. W. A. Bloedorn.—p. 646.  
Emergency Treatment of Water for Drinking Purposes. A. P. Hitchens.—p. 657.  
Preventive Medicine and Its Relation to Military Medicine. R. F. Jones.—p. 663.

### New Jersey Medical Society Journal, Orange

December, 1922, 19, No. 12

- Concerning Headaches; This Symptom as an Aid to Diagnosis. A. Cramer, Jr., Camden.—p. 347.  
Public Health Administration in New Jersey. R. B. Fitz-Randolph.—p. 350.  
Newer Phases in Treatment of Asthma. G. P. Meyer, Camden.—p. 356.  
Unrecognized Syphilis. B. P. Thom, New York.—p. 363.

### New Orleans Medical and Surgical Journal

November, 1922, 75, No. 5

- Abdominal Trauma. R. O. Simmons, Alexandria.—p. 223.  
\*Blood Pressure Observations in Psoriasis, Lichen Planus and Erythematous Lupus. J. N. Roussel.—p. 228.  
Nonoperative Treatment of Urethral Stricture. H. W. E. Walther, New Orleans.—p. 231.  
When Diseased Gallbladder Becomes Surgical. L. C. Chamberlain, New Orleans.—p. 238.  
Fractures of Leg. I. Cohn, New Orleans.—p. 241.  
\*Radium in Treatment of Myelogenous Leukemia. A. Henriques and L. J. Menville, New Orleans.—p. 247.

**Blood Pressure in Psoriasis, Lichen Planus and Erythematous Lupus.**—In these three diseases Roussel has found almost a constant low pressure which seemed to drop as the disease progressed. In lichen planus the blood pressure appears to be low from the beginning, but in psoriasis and lupus erythematosus the pressure was generally lower in the old cases than in the early ones, mostly ranging in the old cases between 85 and 95 mm. In several cases of psoriasis of many years standing the eruption has disappeared entirely by simply raising the blood pressure from 85 to 120, only to see it reappear when the blood pressure dropped.

**Radium Treatment of Myelogenous Leukemia.**—Henriques and Menville report their observations in the treatment of chronic myelogenous leukemia by the surface application of radium over the spleen. One patient is in good condition eighteen months and another fifteen months since treatment began. A third patient shows a similar improvement in the past eight months. An enormous spleen, extending almost to the right lateral abdominal wall and almost to the symphysis pubis and protruding markedly both toward the front and the left, has been so reduced in size that it cannot be palpated fifteen months after treatment began. The white cells have shown a progressive decrease to the neighborhood of 20,000. The myelocytes have shown a marked reduction. The red cells in two cases increased from 2,000,000 to above



5,000,000 in about ninety days. The hemoglobin has shown a marked rise. These results were accomplished by a total dosage of from 2,200 to 2,400 mg. hours spread over four areas near the center of the spleen, through the skin, repeated monthly. The dosage employed at each sitting was from 550 to 600 mg. hours.

### New York Medical Journal and Medical Record

Dec. 6, 1922, 116, No. 11

- Peptic Ulcer with Deformities of Viscus, Evidenced by Roentgen Rays, Changes for Better by Treatment. M. Einhorn, New York.—p. 613.
- Phases of Gastrointestinal Infection, Pathology and Treatment. G. R. Satterlee, New York.—p. 619.
- Intestinal Infections and Toxemias and Their Biologic Treatment. N. P. Norman and A. A. Eggston, New York.—p. 623.
- \*Incidence of Pain in Upper Left Quadrant of Abdomen. J. Friedenwald and J. W. Martindale, Baltimore.—p. 627.
- Preoperative and Postoperative Treatment of Colon Malignancy. R. F. Carter, New York.—p. 630.
- Cancer of Stomach. A. W. Hammer, Philadelphia.—p. 634.
- Nonrecurrence of Gastric Cancer After Operation. S. Basch, New York.—p. 636.
- \*Study of Connective Tissue Changes in Gallbladder. N. D. C. Lewis and F. A. Reuter, Washington, D. C.—p. 640.
- Effect of Magnesium Sulphate on Liver and Biliary Apparatus. J. C. Hemmeter, Baltimore.—p. 645.
- Therapeutic Value of Duodenal Tube. C. D. Aaron, Detroit.—p. 648.
- Chronic Duodenal Obstruction. E. P. Quain, Bismarck, N. D.—p. 651.
- Experimental and Clinical Observations on Simplification of Intestinal Flora. C. Pope, Louisville, Ky.—p. 654.

**Incidence of Pain in Upper Left Quadrant of Abdomen.**—Observation of 1,134 cases in which an attempt was made to tabulate only those cases in which upper left quadrant pain might conceivably occur has shown Friedenwald and Martindale that splenic hypertrophy was comparatively rare and only in a small number of cases (1 per cent.) was it the cause of upper left quadrant pain. Of this group but 8 per cent. were accompanied with discomfort or pain in the upper left quadrant revealing the fact, that pain was a rather rare occurrence in this region of the abdomen, and that this area was usually comparatively free of organic disease. The character of pain varied from a slight discomfort to a severe distress; was constant or intermittent, and frequently occurred coincidentally with pain in other regions of the abdomen. Finally, the pain noted in the upper left quadrant of the abdomen may originate from lesions in various organs. It was most commonly produced by affections of the left kidney (twenty cases); of the colon (nineteen cases), less frequently of the female generative organs (sixteen cases), of the pancreas (eight cases) and of the spleen (fourteen).

**Sarcoma of Gallbladder.**—Lewis and Reuter report a case of sarcoma of the gallbladder in which a diagnosis of subacute appendicitis was made. The abdomen was entered and explored through a right rectus incision. The appendix was postcecal, rather long and fibrous in appearance, and firmly bound down by adhesions. The vessels were injected and stood out prominently. On examination the mobility of the stomach and duodenum was greatly reduced by bands running toward the liver, but otherwise there was nothing abnormal. The kidneys, spleen, and pelvis organs were negative, but in the region of the gallbladder a long firm mass was felt, decidedly of the consistency of liver tissue, attached to the under surface of the right lobe of the liver at about the point where one would expect to find the gallbladder. Further search failed to reveal a recognizable gallbladder. The appendix was removed by the usual method and a cholecystotomy was done. A single stone about the size and shape of a bantam egg was removed from the cavity. The patient had a severe epileptic convulsion. She died four hours afterward. The postmortem findings are reported in detail.

### Rhode Island Medical Journal, Providence

December, 1922, 5, No. 12

- Endocrine Glands. F. T. Fulton, Providence.—p. 347.
- General Principles of Treatment of Skin Diseases. R. Blosser, Providence.—p. 352.

### Southern Medical Journal, Birmingham, Ala.

December, 1922, 15, No. 12

- Nutrition: Most Important Public Health Problem of Today. S. Harris, Birmingham, Ala.—p. 955.
- \*Aneurysm of Heart Complicated with Chronic Mediastinal Pericarditis. E. Smith, St. Louis.—p. 962.

- Spontaneous Pneumothorax in Pulmonary Tuberculosis: Occurrence and Management. I. S. Kahn, San Antonio, Tex.—p. 972.
- Active Immunization Against Diphtheria. A. S. Root, Raleigh, N. C.—p. 980.
- Causes and Treatment of High Blood Pressure. B. W. Fontaine, Memphis.—p. 987.
- Some Evidences of Inadaptability in Ex-Service Psychoneurotics. G. H. Benton, Gulfport, Miss.—p. 992.
- Diagnosis of Sterility in Women. M. Y. Dabney, Birmingham, Ala.—p. 1001.
- Correlation of Pathology and Medicine and Surgery. K. M. Lynch, Dallas, Tex.—p. 1005.
- Correlation of Physiology and Surgery. F. K. Boland, Atlanta, Ga.—p. 1007.
- Use of Full Time Teachers in Clinical Medicine. G. C. Robinson, Baltimore.—p. 1009.
- Full Time Clinical Departments. G. Dock, St. Louis.—p. 1013.

**Aneurysm of Heart with Mediastinal Pericarditis.**—Smith believes that his case suggests the following points as important in the diagnosis of cardiac aneurysm: (1) careful attention to possible antecedent history of a more or less rapid occlusion of a coronary vessel through thrombosis; (2) finding of two separate points of cardiac impulse in the cardiac area; (3) determination of an abnormal cardiac outline through careful physical and roentgen-ray examination. It is important to determine a possible complicating chronic adhesive pericarditis through (1) the presence of fixation of heart dullness; (2) retraction in the region of the apex and Broadbent's sign; (3) finding through careful roentgen-ray study evidence of adhesions of the pericardium to the surrounding structures. Should cardiac aneurysm be found to be complicated with chronic adhesive pericarditis, then it may be justifiable after full explanation of the situation to the patient to recommend cardiolysis to lessen the strain on the cardiac muscles by the constant systolic pull of the harness of adhesions; for the persistent tugging of these adhesions will break down the cardiac compensation just as certainly as will a bad valve lesion or any similar cause of constant cardiac overwork. On the other hand, cardiac aneurysm may occasionally heal, especially if relieved of pericardial adhesions. If not the cardiac compensation will probably be maintained longer without than with the added strain of chronic mediastinopericarditis. Not any more danger is involved to life in this procedure than in that of wiring a thoracic aneurysm, though both procedures are, of course, largely palliative.

### Surgery, Gynecology and Obstetrics, Chicago

December, 1922, 35, No. 6

- Physician and Surgeon. H. Cushing, Boston.—p. 701.
- Anatomy and Identity of "Encysted" and "Infantile" Hernia. A. V. Moschcowitz, New York.—p. 711.
- Levator Hernia (Pudendal Hernia). H. C. Chase, New York.—p. 717.
- Nature and Significance of Renal Stasis. E. G. Crabtree, Boston.—p. 733.
- Recurrent Renal Calculi. J. D. Barney, Boston.—p. 743.
- \*Primary Tumors of Ureter. P. W. Aschner, New York.—p. 749.
- \*Elusive Ulcer of Bladder. H. L. Kretschmer, Chicago.—p. 759.
- \*Results of Operations for Cancer of Lip at Massachusetts General Hospital from 1909 to 1918. C. C. Simmons and E. M. Daland, Boston.—p. 766.
- \*Resuscitation, Intracardiac Injections. D. W. Crile, Chicago.—p. 772.
- Forward Dislocation of Both Bones of Forearm at Elbow. I. Cohn, New Orleans.—p. 776.
- Subastragaloid Dislocation of Foot; Three Cases. B. H. Moore, Chicago.—p. 788.
- Fractures of Both Bones of Forearm with Great Dislocation Treated with Pin Traction. R. A. Koopmans, Rotterdam, Holland.—p. 793.
- New Traction and Suspension Bone Tongs. E. J. Høglund, Chicago.—p. 800.
- Transsacral Nerve Block Anesthesia in Surgery of Pelvic Floor and Viscera. W. R. Meeker and E. B. Frazer, Rochester, Minn.—p. 801.
- Pelvic Measurements by Roentgen Ray. A. B. Spalding, San Francisco.—p. 813.
- \*Aseptic Method of Intestinal Anastomosis. W. C. Burket and W. B. McClure, Evanston, Ill.—p. 816.

**Primary Tumor of Ureter.**—Aschner found forty-seven cases of primary epithelial tumors of the ureter recorded in the literature. Of these only four were squamous cell carcinoma. One case is reported. It was a hydronephrotic, infected kidney with bifid pelvis, with leukoplakia, and squamous cell carcinoma of the upper ureter. The cases previously recorded are analyzed.

**Elusive Ulcer of Bladder.**—Fourteen cases are reported by Kretschmer. Of the eight patients operated on, one is having a relapse and another has pus and staphylococci in the urine.



The remaining patients consider themselves well; that is, they are free of symptoms. Of the remaining four cases, two are no longer under observation and in the other two there has been an improvement, without any treatment. However, these two cases are not entirely free of symptoms.

**Results of Operations for Cancer of Lip.**—One hundred and seventy-two cases of primary cancer of the lip were admitted to the hospital during a ten years period together with fifteen cases recurrent from previous operation. No attempt has been made to determine the end-results in the recurrent cases or those in which no operation was performed. Of the remaining 163 cases, the end-result is known in 122 instances. The radical operation was performed in 122 cases with the removal of the glands from one side of the neck in seventy-three and from both sides in forty-nine. There were three postoperative deaths in the series of 122 radical operations, an operative mortality of 2.5 per cent. In sixteen patients in whom the growth was extensive it was found impossible to close the defect in the lip in the usual manner without tension or without making the oral opening too small. Some form of plastic operation was performed to remedy the defect. Of the fourteen patients in this group who have been traced, ten have died of a recurrence of the disease, while only four (28.3 per cent.) are living and well. Of the 122 cases the end-result is known in 103, but in five cases the data are inconclusive, the patients having died of some other disease within the three-year limit without recurrence. Of the remaining ninety-eight cases, sixty-eight patients are living and well without evidence of the disease, or have died of other cause more than three years after operation, while thirty are dead; twenty-seven from a recurrence of the disease and three as a result of the operation. This gives 68.1 per cent. cures following the radical operation. The percentage of cures in the cases in which metastatic cancer was demonstrated in the glands removed was much smaller than in the cases in which no metastases were found. In nineteen traced cases in which the glands were involved by the disease, five patients are well (27.7 per cent.), while in the seventy-two conclusive traced cases in which no cancer was found in the glands, sixty-three patients are well (86.6 per cent.). Of the thirteen patients dying of a return of the disease, the site of the recurrence is known in nine. In four patients the recurrence was in the glands of the neck only, in four it was both glandular and local, and in one it was local only. If 27 per cent. of the cases in which metastatic cancer is demonstrable in the glands removed from the neck are cured by a radical operation, it is presumable that a certain number of cases in this group would have been cured if the more extensive operation had been performed. The average length of life of all patients dying of recurrence from the date of operation was 23.3 months. In cases in which the glands removed at operation showed cancer, the length of life was slightly shorter than the average (21.7 months). With one exception in all fatal cases the recurrence or death occurred within the three-year limit. One patient died of glandular recurrence seven years after the primary operation.

**Intraventricular Injection of Epinephrin in Cardiac Failure.**—Crile reports a case of cardiac and respiratory failure due to chloroform and shock in which direct cardiac massage and stimulation combined with artificial respiration failed to resuscitate. Intraventricular injection of epinephrin, 10 c.c. of a 1:1,000 solution (after at least fifteen minutes of complete cardiac failure) resuscitated cardiac function. Respiration returned after forty-five minutes. Four other cases are cited.

**Aseptic Method of Intestinal Anastomosis.**—The method described by Burket and McClure is dependent for success on an instrument formed of reciprocal male and female halves.

### West Virginia Medical Journal, Huntington

December, 1922, 17, No. 6

- Atropin and Hypertonic Infant. A. A. Shawkey, Charleston.—p. 201.  
Group Practice Menace. J. E. McDonald, Logan.—p. 204.  
Anorectal Infections. E. H. Terrell, Richmond, Va.—p. 206.  
Lueside. P. Seydel, Nitro.—p. 212.  
Treatment of Acute Melancholia. E. W. Fell, Cincinnati.—p. 222.

### FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Journal of Dermatology and Syphilis, London

November, 1922, 34, No. 11

- Question of Sensitiveness to Nonbacterial Toxins and Proteins. A. Whitfield.—p. 331.  
Exfoliative Dermatitis Following Administration of Arsenobenzol and Its Derivatives. D. Lees.—p. 339.  
Treatment of Psoriasis Vulgaris by Intravenous Injections of Sodium Salicylate. J. Bravo.—p. 353.

### British Medical Journal, London

Nov. 25, 1922, 2, No. 3230

- \*Diagnosis and Treatment of Cholelithiasis. R. Morison.—p. 1005.  
\*Id. F. Macrae.—p. 1008.  
Treatment of Nonmalignant Affects of Colon. I. W. A. Lane.—p. 1014.  
Id. G. Waugh.—p. 1016.  
Id. H. M. W. Gray.—p. 1020.  
Id. H. J. Paterson.—p. 1023.  
Id. A. J. Walton.—p. 1024.  
\*Operative Treatment of Difficult Hernias. H. S. Souttar.—p. 1024.  
Bacteria of Tonsils and Adenoids. N. Wall.—p. 1025.  
\*Clinical Thermometer in Prevention of Pulmonary Tuberculosis. E. Clark-Jones.—p. 1026.  
Acute Proctitis Causing General Peritonitis and Death. W. H. Du Pre.—p. 1027.  
Fibroids Complicating Septic Abortion. F. H. Wallace and G. Wilson.—p. 1028.

**Treatment of Cholelithiasis.**—Morison's present views are against cholecystectomy as the operation of election in gall-stone cases. He raises an objection to the various textbook descriptions of cholecystitis. The terminations of cholecystitis are the same as the end results of inflammation everywhere in the body. They may be catarrhal, or ulcerative, or phlegmonous, or suppurative, or gangrenous, or anything else adding to the difficulties of understanding them, but that should cease to be the teaching of writers who are to train the younger surgeons.

**Drainage Following Gallbladder Operations.**—Believing that the real danger in cholelithiasis lies in the infection accompanying it, Macrae has always arranged for drainage when cholecystostomy or cholecystectomy has been performed, and for the same reason he always hesitates to do the so-called "ideal" operation of cholecystomy.

**"Darning" a Hernia.**—Souttar uses a specially prepared mercurialized silk in his herniotomies because it is not absorbed, but is so far assimilated by the tissues as to become an integral part of them, providing a scaffolding around which fibrous tissue may be laid down, but preventing the stretching to which such tissue is liable. Microscopic sections show the strands of silk impregnated with fibrous tissue cells, the whole forming substantially a single structure. He uses the term "darning the hernia" for this operation.

**Use of Thermometer in Preventing Pulmonary Tuberculosis.**—Clark-Jones urges the claims of the clinical thermometer, understood and properly used, in the prevention of tuberculosis by demonstrating the slight persistent fever, and thereby ensuring rest. Pulmonary tuberculosis is manifested in its earliest inroads by a feeling merely of being below par, together with a slight degree of fever, which usually goes unrecognized.

Dec. 2, 1922, 2, No. 3231

- Degenerative Diseases of Liver. H. Rolleston.—p. 1055.  
Prognosis and Treatment of Chronic Renal Disease. H. Maclean.—p. 1067.  
Acute Myelogenous Leukemia: Aplastic Anemia. R. A. Fleming and J. Davidson.—p. 1074.  
\*Case of Intrapericardial Aneurysm of Aorta. B. T. Parsons-Smith.—p. 1075.  
\*Present Value of Widal Reaction in Inoculated Subject. A. G. Shera.—p. 1076.  
\*Laparotomy for Intestinal Obstruction on Board Ship. V. Moxey.—p. 1077.  
"Hemorrhagic" Chicken-Pox. W. F. Shanks.—p. 1077.  
Acute Meningitis Following Influenzal Mastoiditis. F. Muecke and W. H. Sarra.—p. 1077.

**Intrapericardial Aneurysm of Aorta.**—In arriving at a diagnosis in this case Smith was largely guided by the following considerations: (1) The punctate heaving quality of the pulsation, which to palpation appeared synchronous with the



arterial pulse. (2) The presence of aortic reflux, which, in view of the positive complement fixation test, would suggest syphilitic disease of the aortic stem, and the conduction of the diastolic murmur from its seat of production over the entire region of the tumor and upward into the cervical vessels. (3) The fact that the aortic root and the first 2 inches of its ascending arch were situated within the confines of the pericardial sac. (4) That the direction of least resistance to the spread of a dilatation aneurysm proceeding from the aortic root would be downward within the cavity of the pericardium. (5) The fluoroscopic appearances which identified the shadow of the tumor with that thrown by the heart and great vessels, and the distinct line of continuity which connected the marginal extremity of the tumor with the right-hand border of the ascending aorta; also the definite character of the expansile pulsation which seemed to warrant the exclusion of new growth or encapsulated pericardial effusion. (6) The absence of pressure signs, which, moreover, would be hardly likely to complicate the early stages of an aneurysm originating within, and governed in the matter of the direction of its spread by, the pericardial investments.

**Value of Widal Reaction in Inoculated Subject.**—A positive Widal reaction in the inoculated subject, even four or five years after inoculation, Shera asserts, is of very doubtful value in paratyphoid fever unless of markedly high titer. This in no way detracts from the superlative value of the reaction in the noninoculated.

**Laparotomy on Board Ship for Intestinal Obstruction.**—In Moxey's case a knuckle of ileum, about 2 feet from the cecum, was incarcerated in a mesenteric pocket; this was withdrawn. The protruded intestines were replaced, no flushing of the peritoneal cavity was employed, and the abdominal wall was closed in the usual three layers. The patient recovered.

### Lancet, London

Dec. 2, 1922, 2, No. 5179

- Medicolegal Position of Anesthetist. J. D. Mortimer.—p. 1155.  
 \*Internal Secretion of Pancreas and Its Application to Treatment of Diabetes Mellitus. R. L. M. Wallis.—p. 1158.  
 \*Mechanical Treatment of Severe Dropsy. J. W. Carr.—p. 1161.  
 Uses of Poisson's Formula. G. de M. Rudolf.—p. 1162.  
 Succession of Dominant Species in Mixed Bacterial Culture in Fluid Medium. W. W. C. Topley and H. A. Fielden.—p. 1164.  
 Observations on Canine Feces on London Pavements. H. C. Brown and G. E. F. Stammers.—p. 1165.  
 \*Prevention of Catarrhal Deafness. M. Yearsley.—p. 1167.  
 The Anticoagulating Properties of Arsenobenzols. C. Flandin and A. Tzanck.—p. 1177.  
 Physiologic Study of Phenomena of Shock (Nitritoid Crisis) Produced by Intravenous Injections of Arsenobenzols. M. Pomeret.—p. 1178.  
 Treatment of Syphilis by Intramuscular Injections of Amino-Arsenophenol. M. Bloch.—p. 1179.

**New Pancreas Preparation in Treatment of Diabetes Mellitus.**—A preparation of the pancreas obtained by alcoholic extraction in vacuo has been made by Wallis. He asserts that this extract, when given by the mouth, is capable of reducing the blood sugar in certain cases of diabetes mellitus. By reducing the blood sugar it is possible to increase the patient's tolerance to carbohydrates. The pancreatic extract is, therefore, useful as an adjuvant in treatment, particularly in cases of diabetes mellitus with complications—e. g., gangrene, threatened coma, etc. The duration of treatment as well as the actual dosage is determined by the general condition of the patient, the blood sugar, and the actual tolerance to carbohydrates.

**Puncture of Skin in Treatment of Dropsy.**—The simplest and most effective method of treating severe dropsy—either cardiac or renal in origin—which does not improve under the administration of the usual drugs, heart tonics, aperients, etc., Carr says, is merely to puncture the swollen feet or legs with a surgical needle. The punctures should be made where the swelling is most marked, usually over the dorsum and the malleoli, five or six punctures close together in each situation. From such punctures fluid will often flow steadily and continuously for several days, and if, as not uncommonly happens, they close before the dropsy has disappeared, fresh punctures may at any time be made in adjacent areas. There is not the slightest need for actual incisions into the sub-

cutaneous tissues, such as are sometimes made. Before puncturing it is advisable to get the patient out of bed into a chair for a few hours, so that the feet become the most dependent parts and the edema fluid is able to gravitate down into them. The relief afforded by puncture is then more rapid. If possible the patient should remain in the chair while the drainage continues. Should ascites be present also, the drainage of the feet first relieves this, and then the edema gradually diminishes from the top of the thighs downward. Paracentesis of the abdomen is rarely necessary.

**Prevention of Catarrhal Deafness.**—Yearsley advocates the performance of submucous resection of the nasal septum to prevent deafness.

### Medical Journal of Australia, Sydney

Nov. 11, 1922, 2, No. 20

- \*Familial Hemolytic Splenomegaly. S. O. Cowen.—p. 545.  
 Prevention of Diphtheria. H. O. Lethbridge.—p. 561.

**Familial Hemolytic Splenomegaly.**—Cowen records the investigation of a remarkable series of cases of enlargement of the spleen associated with anemia and jaundice occurring in one family of forty-eight members. Of the twenty-six whose condition has been ascertained, fourteen were found to be affected with the family disease, while three others, now dead, whose records are too meager to justify a positive diagnosis, were probably affected.

### Practitioner, London

November, 1922, 109, No. 5

- \*Operation as Part of Conservative Treatment of Pott's Caries. W. I. de C. Wheeler.—p. 341.  
 Pneumonia and Its Treatment. N. Raw.—p. 357.  
 \*Congenital Heart Disease and Its Prognosis. E. Bellingham-Smith.—p. 365.  
 Syphilis and Marriage. R. P. White.—p. 380.  
 Some Essential Details for Complete Removal of Tonsils by Reverse Guillotine Method. M. Vlasto.—p. 389.  
 Phlyctenular Ophthalmia. W. F. Stiell.—p. 395.  
 \*Treatment of Urinary Incontinence. K. R. C. Hallows.—p. 400.  
 Books Which Have Helped Me. J. R. Keith.—p. 402.

**Conservative Treatment of Spinal Tuberculosis.**—The conservative treatment of spinal tuberculosis in children, Wheeler says, is best carried out without operation. All adults, in the absence of special contraindications, and who either cannot obtain or will not endure prolonged treatment by orthodox methods, should be given the benefit of operation. The additional fixation obtained by a bone graft often determines cure in a patient who has not responded to the recognized nonoperative treatment. An active primary tuberculous lesion is not per se a contraindication to operation. Prudence dictates three months' postoperative treatment in bed and rest should be advised until twelve months have elapsed.

**Prognosis of Congenital Heart Disease.**—Smith endeavors to show that the prognosis of congenital heart disease is not always as grave as it is stated to be. His paper is based on a study of forty-eight postmortem examinations and on the notes of eighty-six cases. It is interesting to note that among the abnormalities there were twenty-one cases of widely patent ductus arteriosus; twenty-four cases of actual deficiency in interauricular septums, such as a widely patent foramen and seven cases of patent interventricular septum, the effect in these cases varying from an almost complete absence to small orifices admitting only a probe. Transposition of the heart occurred only once and was not associated with any intracardiac defect. In a few cases the cardiac malformation was associated with defects elsewhere. Two children were mongolian imbeciles. One child had complete harelip and cleft palate, and another had spina bifida.

**Faradism in Treatment of Urinary Incontinence.**—Hallows encourages the use of faradism in these cases. One pad is placed over the lumbar enlargement of the spinal cord and attached to an electrode. The other electrode is a metal sound or catheter introduced into the urethra, but not into the bladder.

### South African Medical Record, Capetown

Nov. 11, 1922, 20, No. 21

- Gastric Ulcer.—P. N. Vellacott.—p. 409.



## Archives Franco-Belges de Chirurgie, Brussels

July, 1922, 25, No. 10

- \*Grafts of Bones of Embryos. R. Simon and M. Aron.—p. 869.  
\*Access to Biliary Passages. C. Willems.—p. 884.  
\*Mesenteric Gland Tuberculosis. J. Moreau and L. van Bogaert.—p. 888.  
Rare Traumatism of the Wrist. E. Delannoy.—p. 926.  
Rare Malformation of Hands. A. Dhalluin.—p. 931.  
Polysyndactylia. J. Verdelet and J. Chavannaz.—p. 934.  
Bilateral Strangulated Hernia. A. Chalié and P. Wertheimer.—p. 938.  
\*Minor Displacement of Cervical Vertebrae. Gruget.—p. 939.  
Fracture of Cervical Spine. E. Vandepuut.—p. 942.  
\*Displacement of Cervical Vertebra. J. Cahen.—p. 945.  
\*Paralysis of Scapular Girdle. E. Smeesters.—p. 951.

**Grafts of Embryonal Bones.**—Simon and Aron have been experimenting with long bones and joints taken from guinea-pig embryos from 6 weeks to 2 months old transplanting them in other adult or young guinea-pigs. These implants survived longer than under other circumstances, but finally they obeyed the general laws regulating bone implants, namely, regression, the breaking down of the bone tissue and its reconstruction at the expense of the host. The interval before this occurred, however, was much longer with the embryo bones than under other conditions, especially when soft parts were transplanted with the graft.

**Access to the Liver.**—Willems' illustrations show how he raises the liver region by a cushion below and cuts from close to the median line slanting down into the flank, extending the incision farther the greater the difficulties in the operation. One assistant devotes himself exclusively to drawing out the liver and pivoting it on the costal arch until its inferior aspect is fully exposed. He turns his back to the patient and grasps the right lobe of the liver each side of the gallbladder, and turns the liver over on the thorax. This renders all other retractors, etc., unnecessary, while there is nothing to obstruct the field of operation as his hands are outside of the abdomen. This pivoting outward and upward of the liver allows the amplest access to the biliary passages, facilitating operations on the gallbladder and bile ducts to a surprising degree. During the whole intervention the assistant holding the liver must not stir. The liver has to be held immovable, and his thread gloves over rubber gloves aid in this. The operation concluded, the cushion below is withdrawn and the liver returned to place, with a wick against its lower surface. The muscles are sutured in two tiers, and the skin is sutured, clips not holding well for this incision. He has always had a solid reunion, with never any tendency to eventration.

**Primary Tuberculosis of Mesenteric Glands.**—Moreau and van Bogaert compare with a case personally observed in a girl of 19 sixty-nine cases from the literature. The tubercle bacilli pass from the intestines into the glands without producing lesions in the bowel. The grave complications liable to result in young and old and the complete cure in 94.5 per cent. when the focus was excised justify prompt intervention. The local and general health was excellent in the fifty-eight reexamined from six months to thirteen years afterward. Only two instances of recurrence are known; in one a complete cure followed the second operation, but the other patient succumbed to tuberculous peritonitis two or three years later. The exact diagnosis had not been made beforehand in any instance, and probably certain cases of "chronic appendicitis" have in reality been tuberculous mesenteric gland lesions, as is evidenced by the occasional discovery of extinct tuberculous foci in these glands.

**Minor Displacement of Cervical Vertebrae.**—Gruget reports a case which confirms the grave symptoms liable to be induced by a lateral subluxation of the third on the fourth cervical vertebra. The young man had fallen from a ladder and the only symptoms were the twisting of the head to one side and difficulty in moving the left arm and shoulder which were very painful. The dislocation could be seen in the roentgenogram taken through the opened mouth, a week after the accident. Extension was applied, the head of the bed raised, and by the fourth day the deviation of the head was much reduced. Then, with the patient horizontal, the neck and head were manipulated to bring the head back into place which was easily accomplished. The extension was then continued for two days, and the cure has been complete to date.

In Cahen's case the seventh cervical vertebra was dislocated backward in an automobile accident, and the right arm was paralyzed and extremely painful. The symptoms spontaneously improved for four months and then have been stationary for the two months to date. The man of 53 refuses operative treatment. The improvement seems to indicate that the compression was from some clot rather than from a bone lesion. Prompt intervention at the time might have warded off his disability.

**Paralysis of Scapular Girdle.**—In Smeesters' case the paralysis of the deltoid and other muscles of the scapular girdle in the girl of 15 dated from childhood, and the right arm was useless, the muscles atrophied. He describes his method of treatment by a tendon and muscle plastic operation, arthrodesis, plaster cast and physical training, the results surpassing all expectations. The recuperation of the soft parts of the scapular girdle would in itself alone, he says, justify the intervention.

## Bulletin Médical, Paris

Nov. 11, 1922, 36, No. 46

- Nephritis in Children. P. Merklen.—p. 905.  
Treatment of Arrhythmia. G. Lyon.—p. 910.

## Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 10, 1922, 46, No. 31

- Pernicious Anemia After Arsphenamin in a Tabetic. J. Deroide.—p. 1460.  
Familial Recklinghausen's Disease. G. Guillaín.—p. 1462.  
\*Occupational Poisoning by Benzene. Faure-Beaulieu and Lévy-Bruhl.—p. 1466.  
\*Pernicious Anemia Due to Bothriocephalus. A. Cramer.—p. 1475.  
\*Meningococcus Septicemia. C. Gandy and G. Boulanger-Pillet.—p. 1477.  
Pneumocardiac Reflex. J. Walser.—p. 1483.  
\*Amebic Hepatitis. Eschbach.—p. 1487.  
Diabetes Insipidus and Moral Insanity Following Encephalitis. C. I. Urechia and N. Rusdea.—p. 1492.  
Solitary Tubercle of Cervical Cord. C. I. Urechia and N. Elekes.—p. 1497.  
Compression of Brachial Plexus and Subclavian Vessels by a Goiter. A. Sézary and P. Bartet.—p. 1499.  
\*Phenolsulfonephthalein Test in Chronic Pulmonary Tuberculosis. P. Merklen and Minvielle.—p. 1502.  
\*Arsphenamin in Treatment of Inherited Syphilis. M. Renaud.—p. 1506.  
\*Radiography After Intramuscular Injections of Iodized Oil. Boulanger.—p. 1509.

**Occupational Poisoning by Benzene.**—Faure-Beaulieu and Lévy-Bruhl describe a severe anemia with hemorrhagic purpura and metrorrhagia in a woman employing benzene in her work. The patient showed also transitory signs of an affection of the spinal cord. They believe that similar symptoms occurring after injections of arsphenamin may be due to the benzene in the drug. Legislation should enforce sufficient ventilation of the rooms where benzene is employed.

**Pernicious Anemia Due to Bothriocephalus in Three Sisters.**—Since only a small percentage of people suffering from bothriocephalus develop pernicious anemia, Cramer believes that a predisposition is necessary. In his cases of three intellectually inferior sisters he points out the extremely unhygienic conditions they were living in. Only one of the patients survived.

**Meningococcus Septicemia Without Meningitis.**—Gandy and Boulanger-Petit's patient showed for two months and a half intermittent fever resembling malaria, due to meningococcemia of type B. No meningeal symptoms were noted. The cerebrospinal fluid was normal. The treatment consisted in intravenous injections of antimeningococcus serum and later of an autovaccine. The patient was cured. They hold that attacks of erythema and papules (sometimes punctate hemorrhages) with intermittent fever should lead to a consideration of meningococcemia.

**Amebic Hepatitis.**—Eschbach's case long presented the signs of a clinical pulmonary affection with progressive cachexia until a slight enlargement of the liver aroused the suspicion of amebic hepatitis. The result of treatment by emetin was prompt and perfect, as well as in a second case of intermittent fever and progressive cachexia plus slight apical changes. An abscess in the liver several months later confirmed the diagnosis.

**Phenolsulphonephthalein Test in Chronic Pulmonary Tuberculosis.**—Merklen and Minvielle compared the elimination



of phenolsulphonephthalein with the amount of urea in the blood and the Ambard index in seventeen patients. The test showed a parallel result except in some of the cases where the excretion of phenolsulphonephthalein was diminished. Some of them had a corresponding increase in the Ambard coefficient, while others, even with marked diminution of the excretion of phenolsulphonephthalein, had normal amounts of urea in the blood, and normal coefficients.

**Arsphenamin in Treatment of Inherited Syphilis.**—Renaud recommends a very intensive treatment.

**Radiography After Intramuscular Injections of Iodized Oil.**—Boulan proves by roentgenograms that intramuscular injections of iodized oil may give after five months shadows, that are darker than the bones. The resorption is so slow, that they could be distinguished even after three and a half years.

### Paris Médical

Sept. 16, 1922, 12, No. 37

- \*Blood Transfusion. A. Tzanck.—p. 249.
- Surgery of Arteries: Two Cases. Delassus.—p. 252.
- \*Early Detection of Emphysema. G. Rosenthal.—p. 254.
- Surgical Technic for Separation of Xiphopagus. Le Fillatre.—p. 256.
- Alcoholism and Ambulatory Automatism. R. Benon.—p. 260.

**Three Varieties of Blood Transfusion.**—Tzanck discusses three kinds of transfusion. In very urgent cases after a great loss of blood it would be a mistake to try to have everything perfect: every donor is good and every apparatus. The main thing is to get a sufficient quantity of uncoagulated blood and inject it as near the heart as possible. To prevent coagulation, he takes in a vessel 2 c.c. of 10 per cent. solution of sodium citrate for every 100 c.c. of blood. In a very extreme emergency one could try to inject the blood directly into the heart by means of a syringe holding 50 c.c. and a needle 8 cm. long and of a caliber of 1.2 mm. Rhythmic injection of the blood may be a good means to excite the heart. Animal experiments were encouraging. The second variety are great transfusions, in which one has sufficient time to take all the necessary precautions. Tzanck mixes 0.5 c.c. of the blood of the patient with the same amount of the blood of the presumptive donor and injects it in the heart of a guinea-pig. A mixture of incompatible blood kills the animal. The whole test takes hardly five minutes. He injects the blood in four increasing fractions. The third kind of transfusion—small quantities of blood—medical transfusion—is very important. Its effect is much better than one would expect from the quantity of blood injected. It acts very well in hemorrhagic conditions.

**Physiotherapeutic Syndrome of Emphysema.**—Rosenthal points out that a healthy person can test the vital capacity of his lungs five times without any appreciable diminishing of the volume of expired air. He can get the same volume of air out, whether he is breathing slowly or fast. The emphysematous have a lower capacity at the start, and it diminishes in subsequent tests, because they become tired. Measuring of the respiratory force by manometers gives similar results. Rosenthal points out the frequency of nasal troubles in these cases, and recommends local nasal treatment and respiratory gymnastics.

### Presse Médicale, Paris

Nov. 11, 1922, 30, No. 90

- \*Hemiglossitis. G. Worms and J. Bercher.—p. 973.
- Influence of Blood Pressure on Number of Erythrocytes. Lenaz.—p. 974.
- \*Affections of Lenticular Nucleus. Paulian et al.—p. 977.
- Present Status of Radiotherapy for Sterility in Women. L. Cheinisse.—p. 977.

**Hemiglossitis.**—Worms and Bercher describe two cases of a very marked swelling of one half of the tongue. The affection is benign and heals soon. A third case was of a longer duration (four weeks).

**Treatment of Affections of the Lenticular Nucleus.**—Paulian and Brauner injected 1 to 2 c.c. of a 25 per cent. solution of magnesium sulphate into the spinal canal and 0.0005 gm. to 0.001 gm. of hyoscin subcutaneously. The combination prolongs the favorable effect of hyoscin on the respective troubles, especially in Parkinson's disease. Three cases are reported.

Nov. 18, 1922, 30, No. 92

- \*Metabolism of Fats. H. Roger.—p. 993.
- Benign Continuous Subfebrile States with Pleural Manifestations. C. Mantoux.—p. 995.
- \*Action of Hypophysis Extracts on Blood Coagulation. R. Feissly.—p. 997.

**Metabolism of Fats.**—Roger relates that not only the liver, but also the lung and the mesenteric glands are important organs for the metabolism of fats. It is not logical to deny the importance of the lungs for heat production. The blood acquires during its passage through the lungs a faculty for destruction of fat, which is not entirely due to the oxygen content. The action is confined to the erythrocytes. It is possible that some forms of obesity might be attributed to an insufficiency of the lungs.

**Action of Hypophysis Extracts on Blood Coagulation.**—Feissly finds that coctostable extracts of most organs, not only of the pituitary, act like weak solutions of peptones. The best technic for their use is by subcutaneous injections.

### Progrès Médical, Paris

Nov. 11, 1922, 37, No. 45

- \*The Mucous Membrane in Gastric Cancer. Loeper and Marchal.—p. 525.
- \*The Sympathetic and Periodic Psychoses. Laignel-Lavastine.—p. 529.
- Basal Metabolism. J. Forestier.—p. 533.

**The Functioning of the Gastric Mucous Membrane in Cases of Cancer of the Stomach.**—Loeper and Marchal attribute the hyposecretion in cases of cancer of the stomach to the lesions of the whole mucous membrane found by other authors. These lesions are due to the irritating action of secretions of the tumor and to microbes. The proteolytic, lipolytic and amylolytic power of the secretions is partly due to disintegrated leukocytes. They recommend disinfection of the stomach by normal saline or chlorinated soda. Administration of hydrochloric acid and pepsin is advantageous.

**The Sympathetic and Periodic Psychoses.**—Laignel-Lavastine demonstrates the importance of the vegetative nervous system in some paroxysms of psychoses. These cases present usually signs of vagotonia, and can be favorably influenced by exciting the sympathetic (epinephrin) or depressing the vagus (atropin, etc.).

### Riforma Medica, Naples

Oct. 23, 1922, 38, No. 43

- \*Leptomeningitis of Otitic Origin. G. Gradenigo.—p. 1009.
- \*Omentopexy in Atrophic Cirrhosis of Liver. P. Fiori.—p. 1011.
- Treatment of Trichophytosis by Intramuscular Injections of Iodid. P. A. Meineri.—p. 1015.
- \*Testicle Grafts. S. Voronoff.—p. 1017.

**Treatment of Purulent Leptomeningitis of Otitic Origin.**—Gradenigo advocates early and radical treatment of both the meningitis and the focus in the ear. Autovaccines are good and may be supplemented with specific serums, etc.

**Diversion of Portal Blood in Atrophic Cirrhosis of Liver.**—Fiori recommends the fixation of the omentum—omentopexy—in treatment, because it may arrest the progressing cirrhosis, and a better function of the liver may result.

**Testicle Grafts.**—Voronoff reports his experiments on animals dating from June, 1917, and on men since June, 1920. Even slices of testicles from cynocephalus monkeys implanted in human testicles gave good results. Although not pretending to explain the whole problem of senility by the atrophy of sexual glands, Voronoff believes that this is the main factor. The results depend very much on the site of the implantation. Voronoff prefers the peritoneum or the tunica vaginalis, because the transudation of plasma can keep up the nourishment of the graft before it is vascularized. Subcutaneous tissue and muscles cannot prevent a central necrosis, and the rest lasts merely for a few months. Voronoff opens the scrotum under local procain anesthesia and fastens the fragments of the implanted testicle at each end with catgut. The glandular surface faces the tunica vaginalis, which is scarified as well as the tunica albuginea. The fragments must not touch each other. Too small fragments are absorbed. The undivided testicle can be implanted only if it is small and from young animals. [This is stated to be the complete paper prepared for the French Surgical Congress in October. It was debarred from presentation by



publication of a summary of it in a daily paper just before the congress.]

Nov. 6, 1922, 38, No. 45

- \*Blood Pressure and Extracts of Lymphatic Glands. V. Scarpa.—p. 1057.  
Case of Whole Transverse Colon and Its Mesentery Contained in a Scrotal Inguinal Hernia. N. Novaro.—p. 1060.  
A Case of Ambulatory Cerebrospinal Meningitis. G. Comporti.—p. 1063.  
Present Status of Surgery of Benign Abdominal Tumors. E. Aievoli.—p. 1065.  
Serum Treatment or Vaccine Treatment? I. Iacono.—p. 1066.

**Lowering of Blood Pressure by Extracts of Lymphatic Glands.**—Since extracts of lymphatic glands seem to have an action antagonistic to epinephrin, Scarpa tried their use in cases of hypertension. The extract was well tolerated and lowered the blood pressure a little (20 mm. mercury) twenty minutes after subcutaneous injection. The pressure returned very soon to the previous height.

### Prensa Médica Argentina, Buenos Aires

Oct. 10, 1922, 9, No. 13

- Etiology of Diabetes Insipidus. C. Bonorino Udaondo and J. E. Carulla.—p. 333.  
\*Cancer of Testicle in Child. J. P. Garrahan and F. Ruiz.—p. 339.  
\*Myograph. V. Tedeschi.—p. 343.  
Vitamin Treatment of Tuberculosis. R. F. Carrón.—p. 348. Cont'n.

**Cancer in Testicle of Boy of Fourteen.**—The whole was interpreted as tuberculosis of the testicle plus a hemorrhagic tuberculous polyserositis. Necropsy about a year after the first symptom—the swelling of the testicle—revealed that the testicle was the site of a primary cancer, and the pleura, peritoneum and pericardium showed diffuse carcinomatosis. In Chevassu's compilation of malignant tumors of the testicle, only 5 of the 128 cases were in children, and all these were under 5. Ruiz has compiled 16 additional cases, including the one here reported and one other, an embryoma, in a boy of 4.

**Myograph.**—Tedeschi expatiates on the advantages of the simplified vertical myograph of which he gives an illustrated description and tracings.

Oct. 20, 1922, 9, No. 14

- Secretion of Epinephrin and Nerves Involved. B. F. Houssay.—p. 377. Cont'd.  
\*Prophylaxis of Clots in Bladder. C. M. Squirru and L. Figueroa Alcorta.—p. 382.  
\*The Pituitary and the Inter-Brain. C. P. Waldorf.—p. 386. Conc'n in No. 15, p. 415.  
\*Acute Articular Rheumatism. S. Libarona Brian.—p. 394.  
Iodized Tuberculin in Immunization Against Tuberculosis. J. Frenquelli.—p. 398.

**To Prevent Blood Clotting in Bladder.**—After operations and in case of hemorrhage from other causes, Squirru and Alcorta found that clots did not form when 10 c.c. of a 5 per cent. solution of sodium citrate was injected into the bladder. To date no untoward by-effects from this have been observed or known.

**Disease of the Pituitary and Inter-Brain.**—Waldorf describes in minute detail some cases of adiposis dolorosa, obesity, diabetes, etc., in which the combinations and course throw light on the etiology, pathogenesis and treatment, as he explains. His conclusion is that all these diseases need revision from the standpoint of their origin. Excessive or deficient functioning of the pituitary alone is responsible only for acromegaly, giant or dwarf growth, microsomias and nanosomias. The centers in the inter-brain or thalamencephalon are probably responsible for polyphagia, adiposis dolorosa and other forms of obesity, diabetes insipidus, glycosuria, dystrophia, somnolency and fever for which the pituitary has been incriminated hitherto. There seems to be some connection between the internal secretion of the pituitary and the thalamencephalon, as is evidenced in the benefit from pituitary treatment in diabetes insipidus, but no such benefit is apparent in adiposis and glycosuria of the alleged pituitary type.

**Acute Articular Rheumatism.**—Libarona Brian's treatment is a daily subcutaneous injection of a mixture of 1.5 gm. of sodium chlorid and 1.05 gm. of sodium sulphate in 50 c.c. of water. In his extensive experience with this treatment all the patients were cured without complications or recurrence. The cure followed most promptly in a case in which the

interval since the onset was only seventy-two hours, while the disease persisted longest in a case with an interval of six days.

### Semana Médica, Buenos Aires

Oct. 12-19, 1922, 2, Nos. 41-42

- \*Transactions of National Medical Congress.—p. 731.

**Hydatid Disease.**—These two numbers of the *Semana* are devoted almost exclusively to the numerous reports on hydatid disease which was the subject appointed for discussion at the Second National Medical Congress which convened at Buenos Aires, Oct. 1 to 8, 1922. Echinococcus cysts were discussed from every possible standpoint, diagnosis, treatment, prevalence, prevention, pathology, etc., by Wernicke—who has since died—Parodi, Llambias, Lagos García, Copello, Carbonell, Greenway, Tumburus, Spangenberg, Saralegui, Ricardo Finochietto, Navarro, and del Sel. Hydatid cysts in the lungs or peritoneum were discussed in particular by Escudero, Lanari, Finochietto, Ahumada and Carelli. The whole forms a remarkable presentation of the most advanced knowledge in regard to hydatid disease and its prophylaxis.

### Deutsche medizinische Wochenschrift, Berlin

Oct. 20, 1922, 48, No. 42

- \*Psychogenous Dyspepsia. I. Boas.—p. 1405.  
\*Result of Decompressive Trephining. Anschütz.—p. 1406.  
\*Blindness after Migraine. W. Löhlein.—p. 1408.  
Yearly Fluctuations in Human Physiology and Pathology. K. Beckmann.—p. 1409.  
Symptoms of Overburdening of Diseased Kidneys. F. Hirschfeld.—p. 1411.  
\*Metabolism in Disease of the Pituitary. R. Plaut.—p. 1413.  
Influence of Posture on the Diuresis in Health. P. Neukirch and K. Neuhaus.—p. 1413.  
Resistance of Tropical Malaria to Quinin. II. Schalk.—p. 1415.  
Diagnosis and Treatment of Affections of the Testicles and Epididymis. L. Casper.—p. 1416.  
Pleuritis. Goldscheider.—p. 1417.  
Local Application of Drugs in Ophthalmology. K. Steindorff.—p. 1419.  
Genesis of Roentgen Injuries. O. Strauss.—p. 1420.  
Handling and Keeping of Injection Syringes and Needles. H. Kritzler.—p. 1421.  
Apparatus for Restoring Shape to Sunken Nose. Freund.—p. 1422.  
Fight Against Rabies in Russia. L. Poleff.—p. 1422.  
Address at Centenary of German Naturforscher Society. A. Strümpell.—p. 1423.

**Psychogenous Dyspepsia.**—Boas emphasizes the importance of recognizing this disease. The history of the patient shows that there is usually a feeling of pressure, without strict relation to the meals. Though the patients speak of "pains," careful analysis shows that it is only a feeling of oppression. Globus without any other signs of hysteria is very common, and nervous nausea quite frequent. Psychotherapy is necessary and any restriction in diet is harmful.

**Result of Decompressive Trephining.**—Anschütz finds that palliative trephining accomplishes nothing with quickly growing tumors and very high intracranial pressure of long standing. Some benefit is derived with slowly growing malignant processes. The results are very good in benign or stationary malignant processes, if we operate early.

**Blindness After Migraine.**—Löhlein recommends in cases of migraine with ocular changes the use of amyl nitrite during the attacks to prevent blindness by its dilating action on the vessels of the eye.

**Respiratory Metabolism in Diseases of the Pituitary.**—Plaut finds that the pituitary regulates the specific dynamic influence of food.

Oct. 27, 1922, 48, No. 43

- Unity or Duality of Tuberculous Processes in Lungs. J. Orth.—p. 1437.  
Dietary Problems in the Treatment of Gout. H. Strauss.—p. 1438.  
Siedentopf's Photomicrographic Ocular. Kaiserling.—p. 1439.  
\*A New Function of the Spleen. K. Naswitis.—p. 1441.  
Comment on Pincussen's "Estimation of Urobilin." A. Adler.—p. 1442.  
Reply. L. Pincussen.—p. 1443.  
Internal Treatment of Gonorrhea. W. Scholtz.—p. 1443.  
\*Respiratory Movement of the Apices. J. Kelemen and F. Kornfeld.—p. 1444.  
Electric Ophthalmia at Moving Picture Studios. Reichert.—p. 1445.  
Frequency of Inadequate Lactation. W. Kahn.—p. 1446.  
A Typical Traumatic Affection of Head of Second Metatarsal Bone. Quirin.—p. 1447.  
Disease of Prostate. Diagnosis and Treatment. Casper.—p. 1448. Cont'd.  
Diagnosis and Treatment of Disease of the Digestive Tract. L. Kuttner.—p. 1450.



Minor Surgical Technical Points in Ophthalmology. K. Steindorff.—p. 1451.

Aspects of Scientific Criticism from the Legal Standpoint. F. Leonhard.—p. 1453.

**A New Function of the Spleen.**—Naswitis injected laked blood into the dog from which it was taken. It increased the amount of blood corpuscles only in normal dogs. It failed to have any influence in this line after splenectomy. He concludes, that the spleen has not only an inhibitory, but also a stimulating influence on the bone marrow.

**Respiratory Movement of the Apices in Initial Infiltration and Adhesions of Pleura.**—Kelemen and Kornfeld noted that in leaning forward a diseased apex showed greater respiratory movements than the healthy. Lack of respiratory movements is a sign of adhesion of the apical pleura.

### Klinische Wochenschrift, Berlin

Nov. 11, 1922, 1, No. 46

\*Jaundice Due to the Reticulo-Endothelial System. F. Rosenthal and M. Fischer.—p. 2265.

Tonus of Heart's Action. Reinhard Ohm.—p. 2269.

\*Intermittent Heterochromia of Iris. H. Curschmann.—p. 2271.

\*Experimental Tar Cancers. R. Bierich.—p. 2272.

Virchow's Congenital Interstitial Encephalitis. H. Siegmund.—p. 2274.

Chloramin as Disinfectant. M. Grünwald and F. Bass.—p. 2278.

Prognostic Importance of High Speed of Sedimentation of Erythrocytes

in Children with Tuberculous Bronchial Glands. Z. v. Bokay.—p. 2280.

Capsella Bursae Pastoris Not a Substitute for Ergot. T. Franz.—p. 2282.

\*So-Called Abscesses of Sweat Glands in Axilla. F. Rost.—p. 2283.

Genesis of Urticaria. H. Mautner.—p. 2284.

Simplified Apparatus for Micro-Determination of Acetone and Beta-

Oxybutyric Acid. A. Lublin.—p. 2285.

Significance of Liver and Muscles for Supply of Serum Proteins. W.

Nonnenbruch and A. Gottschalk.—p. 2285.

\*Bilirubin Reaction in Blood. Adler and Strauss.—p. 2285.

Heart Findings in 171 Athletes. H. Herxheimer.—p. 2286.

Blepharochalasis and Struma Plus Hypertrophy of Lip Glands. K. W.

Ascher.—p. 2287.

Mentally Defective Children. T. Gött.—p. 2288.

Modern Points of View in Protection of Frontiers Against Epidemics.

Frey.—p. 2291.

The Acting Substances of Ergot. E. Rothlin.—p. 2294. Cont'd.

**Jaundice Due to the Reticulo-Endothelial System.**—Rosenthal and Fischer were not able to prevent the formation of jaundice in animals by blocking the reticulo-endothelial system.

**Intermittent Heterochromia of Iris of Nervous Origin.**—Curschmann reports a case of ulcer of the stomach, in which the periods of pain were accompanied by a transitory discoloration of the iris of the side where the pains were felt.

**Experimental Tumors of Animals.**—Bierich finds that in the first stage after the continued application of tar, the fibers of connective tissue swell and elastic fibers multiply. Mast cells appear in numbers. All of these changes stop and even retrogress in the second stage, when the epithelium seems to overcome this barrier and grows into the depths. Since changes in the connective tissue can be produced by an application of roentgen rays or by repeated subcutaneous injections of arsenic, Bierich tried to prevent tar cancer formation in animals by these methods. His success speaks for the protective influence of connective tissue.

**So-Called Abscesses of Sweat Glands in Axilla.**—Rost attributes the abscess to an infection of lymphatic vessels. Roentgen-ray treatment gives good results.

**Mechanism of Bilirubin Reaction in the Blood.**—Adler and Strauss found that Hijman's direct reaction for bilirubin is connected with a lowering of the amount of globulins in the serum. Addition of globulins to the serum delays the appearance of the test. Electrolytes and other substances which dehydrate colloids, change the indirect into a direct reaction.

### Münchener medizinische Wochenschrift, Munich

Aug. 18, 1922, 69, No. 33

Indications for Surgical Treatment of Gallstones. F. Voelcker.—p. 1205.

Acute Yellow Atrophy of the Liver. G. B. Gruber.—p. 1207.

Puerperal Sepsis, Due to Gas Bacilli, plus Jaundice. W. Simon.—p. 1209.

Favorable Results of Sauerbruch's Cincplastic Method After Amputation

of Arm. P. Jotkowicz.—p. 1212.

Turning of the Heart in High Position of Diaphragm. P. v. Zezschwitz.

—p. 1214.

Influence on Leukocytosis of Irradiation of the Spleen. W. Förster.—

p. 1215.

Bloodless Transplantation of Skin. W. Wolf.—p. 1217.

Instrument for Tying of Knots. K. Fecher.—p. 1217.

Ascarid in Liver. R. Veit.—p. 1219.

Comment on Kappis' "Free Bodies in Joints." G. Axhausen.—p. 1219.

Anemia of Infants Due to Goat's Milk. K. Blühdorn.—p. 1220.

History of Tuberculosis. G. Sticker.—p. 1221. Cont'd.

Medical Estimation of Diseases of Heart and Vessels. Grassmann.—

p. 1224.

Oct. 6, 1922, 69, No. 40

\*Differential Diagnosis of Abdominal Affections. A. Lāwen.—p. 1423.

Genesis of Renal Calculi in First Weeks of Life. König.—p. 1426.

Relation of Mode of Baking to Digestibility of Bread. Kestner.—p. 1429.

\*Roentgen Irradiation in Hair Disease. Thedering.—p. 1430.

Cholechooduodenostomy in Place of Hepaticus Drainage by the Kehr

Method. H. Flörcken.—p. 1431.

Birth Trauma of Brain. P. Schwartz.—p. 1431.

Treatment of Pertussis. Klotz.—p. 1431.

Examination of Abdomen in Abdominal Pain. F. Franke.—p. 1437.

**Paravertebral Injections of Procain in the Differential Diagnosis of Intra-Abdominal Affections.**—Lāwen has been investigating to discover whether by means of paravertebral injections of a 2 per cent. solution of procain, by the resulting suppression of the pain in restricted areas, it may not be possible to establish a more accurate differential diagnosis of certain intra-abdominal affections. He had especially in mind the better differentiation of various forms of acute cholecystitis from appendicitis, gallstone colic from right renal colic, chronic manifestations of gallbladder disease from stomach symptoms, and acute appendicitis from incipient pneumonia or inflammatory affections of the adnexa. His experience covers ninety cases. In judging the results, it is important to decide whether the effect is a local effect on the nerves involved or a general effect from absorption of the anesthetic. Paravertebral injections of procain afford an opportunity of observing the segmental effect on various portions of the intestines and other viscera. He found that a single injection of 10 c.c. of a 2 per cent. procain solution to the right of the tip of the ninth spinous process; that is, at the tenth right thoracic nerve, will suffice completely to suppress a severe attack of gallstone colic. Further observations showed that procain injections at the right tenth thoracic spinal nerve are effectual not only on colic pains but also on persistent pains and sensitiveness to pressure in the gallbladder region and at the margin of the liver. The effect of the injection was especially marked in two cases in which the diagnosis "cholelithiasis" could not be surely established clinically. Other observations revealed the fact that this effect of the procain injected into the right tenth thoracic spinal nerve cannot be elicited unless the process is confined to the gallbladder and the bile ducts. His observations on paravertebral injections of procain in affections of the stomach and in colicky pains radiating from the kidney and ureter were not extensive enough to warrant final conclusions. The right tenth dorsal nerve is the one to reach in disease of the biliary apparatus; the right seventh dorsal nerve for the lesser curvature of the stomach, and the right first and second lumbar nerves for the appendix.

**Roentgen Irradiation in Hair Disease.**—Thedering has employed roentgen irradiation in alopecia totalis in place of the quartz lamp. He uses an irritative dose, which is a small fraction of the epilation dose—only from 1 to 2 erythem units—with a 0.5 to 2 mm. aluminum filter, at intervals of two weeks, from four different points on the scalp. Also in alopecia areata, seborrhea, etc., he has come to have more confidence in roentgen irradiation than in the quartz mercury lamp. One added advantage is that it reaches more satisfactorily small hidden patches or foci on the scalp of women.

Oct. 20, 1922, 69, No. 42

\*Hematuria and Nephritis in Appendicitis. W. Anschütz.—p. 1473.

\*Callus Formation in Foot Without Fracture. W. Müller.—p. 1475.

\*Prophylaxis and Treatment of Meningeal Syphilis with a New Endolumbal Technic. Gennerich.—p. 1475.

\*Elimination and Determination of Arsphenamin in Urine. W. Autenrieth and H. Taege.—p. 1479.

Apparatus for Focusing Roentgen Rays on Tumors of the Pelvis. O. Gleichmann.—p. 1481.

\*Treatment of Cardiospasm. J. Oehler.—p. 1482.

Comment on Schottmüller's "Cystitis and Cystopyelitis." H. Hohlweg.

—p. 1482. Reply. Schottmüller.—p. 1483.

The Origin of Anatomic Knowledge in the Iliad and Odyssey. O.

Körner.—p. 1484.

Hemorrhagic Diatheses. P. Morawitz.—p. 1487.

**Hematuria and Nephritis in Appendicitis.**—Anschütz points out that acute nephritis in patients suffering from appendicitis is an indication for appendectomy. The nephritis is usually hemorrhagic, and it heals surprisingly quickly.



**Callus Formation in Foot Without Fracture.**—Müller attributes the formation of callus in the metatarsus without fracture to a reaction against insults and too great mechanical strain.

**Prophylaxis and Treatment of Meningeal Syphilis with a New Endolumbal Technic.**—Gennerich emphasizes the necessity of examining the spinal fluid in syphilitics. He describes his methods of endolumbal injections of arsphenamin with the use of two punctures.

**Elimination and Determination of Arsphenamin in Urine.**—Autenrieth and Taege find that scarcely 5 or 6 per cent. of the arsphenamin is eliminated by the urine, and this almost entirely in the first five hours. Arsenic can be demonstrated for a much longer time after the injection of arsphenamin; 30 mg. of arsenic was found in the liver in one man three months after the course of arsphenamin.

**Simple Treatment of Cardiospasm.**—Oehler gives the patient the stomach tube, and orders him to introduce it until it does not cause any discomfort. The patient thus cures himself in the course of time, sometimes in only a few days.

### Wiener klinische Wochenschrift, Vienna

Oct. 19, 1922, 35, No. 42

- Tuberculosis from Clinical Standpoint. W. Neumann.—p. 817.
- \*Individualizing Treatment in Syphilis. J. Kyrle.—p. 820.
- Aldehyd Differentiating Serologic Reaction. G. Beccadelli.—p. 823.
- Technic of Microscopic Examination of Gallstones. Maresch.—p. 825.
- Cesarean Section in Local Anesthesia. Waldstein.—p. 825.
- Kielland's Forceps in Obstetrics. R. Stiglbauer.—p. 827.
- Comment on Penny's "Sedimentation Test." Starlinger.—p. 828.

**Blood Picture and Individualizing Treatment in Syphilis.**—Kyrle finds that a comparatively mild treatment is sufficient in cases with primary leukocytosis or which react strongly to injections of sodium nucleinate or similar products.

Oct. 26, 1922, 35, No. 43

- Disturbances of Digestion in Diseases of Pancreas. K. Glaessner.—p. 837.
- \*Duodenal Content and Gastric Secretion. Kauders and Porges.—p. 838.
- Biology of the Reticulo-Endothelial Apparatus. K. Paschke.—p. 839.
- Combined Intravenous Treatment of General Paresis. W. Jacob.—p. 840.
- \*Resistance of Staining Against Boiling. K. Preis.—p. 841.
- Typhoid Resembling Toxic Forms of Paratyphoid. v. Balogh.—p. 844.
- Comment on Kogerer's "Hypnotic Analgesia." W. Neutra.—p. 845.

**Influence of Duodenal Contents on Gastric Secretion.**—Kanders and Porges applied different solutions directly into the duodenum of men. They found that hydrochloric acid (0.18 per cent.) and acetic acid (0.3 per cent.) inhibited the secretion of the stomach. Also high concentration of sodium chlorid, sulphate and glucose. Solutions of sodium carbonate and a 2.5 per cent. solution of magnesium sulphate did not disturb it.

**Resistance of Tubercle Bacilli Staining Against Boiling.**—Preis found that the human tubercle bacilli stained by carbolfuchsin retain the color after being boiled for five minutes, while other acid-fat bacteria, including the bovine type, are decolorized much quicker.

### Zentralblatt für Chirurgie, Leipzig

Sept. 2, 1922, 49, No. 35

- Spinal Epimeningitis. H. Braun.—p. 1274.
- Conduction Anesthesia Applied to the Leg. L. Drüner.—p. 1276.
- \*Restricted Use of Tampons in Incision Wounds. O. M. Chiari.—p. 1281.
- Immobilization on Battle Field of Fractured Long Bones. A. Gregory.—p. 1282.
- Slitting of Muscles to Increase Weight-Bearing Power for the Sauerbruch Arm. C. ten Horn.—p. 1284.
- Remedying of Defects in Vessel Walls by the Gluing on of Rubber Patches. W. Müller.—p. 1287.
- Remarks on Reyher's "Artificial Anus." V. Hacker.—p. 1289.
- Remarks on Neudörfer's "Bellocq's catheter." O. M. Chiari.—p. 1290.

**No Tampons in Incision Wounds.**—Chiari explains his method of keeping open such small incisions on the fingers and hand as require it, by suturing the edges of the wound to the adjoining skin. Doubtless many surgeons have used the method, he thinks, but in the thirty cases in which he has used it the past six months the wounds have healed so well without the use of tampons that he thought it might not be superfluous to call attention to the method. To the wounds he applied ointments or sterile gauze, and hot hand baths are given, beginning the day after the incision.

### Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Oct. 14, 1922, 2, No. 16

- \*Gastric Cancer and Gastric Ulcer. F. A. Schalijs.—p. 1726.
- Chronic Arsenic Poisoning. U. G. Bijlsma.—p. 1729.
- \*Intussusception in Children. J. C. van der Ven.—p. 1733.
- Speaking and Lip Reading by Deafmutes. J. J. Bruins.—p. 1737.
- Seroprophylaxis of Measles. C. M. Kroes.—p. 1746.
- Case of Eunuchoid Giant Growth. C. van Luijt.—p. 1748.
- Bilateral Mammary Cancer with Discharge Resembling Milk. H. L. Coopman.—p. 1753.
- Present Status of Spirochetal Jaundice, Arsphenamin Jaundice and Acute Yellow Atrophy of the Liver. I. Snapper.—p. 1755.

**Gastric Cancer and Gastric Ulcer.**—Schalijs presents evidence to sustain his view that old chronic gastric ulcers very rarely become cancerous. In 200 private patients with gastric cancer there were only 15 with a history of preceding stomach disturbance of any kind. In 6 of 97 operative cases there had been some slight and transient stomach trouble at some time, but nothing suggestive of ulcer. In 12 the history indicated old gastric ulcer as also in 3 of the 103 nonoperative cases. This percentage is small and is probably smaller still in reality, as the cancer may have developed at some other point in the stomach, remote from the old ulcer. He has encountered instances of this. He urges operative treatment in all cases of long persisting stomach disturbances but almost solely from the hope of finding an old hard ulcer, the removal of which may restore the patient to health. His operative group of cancer cases included 72 over 50, 18 between 40 and 50, 5 between 30 and 40, and one 23 and one 28 years old.

**Intussusception in Children.**—Van der Ven comments on the acuter course and the different factors of invagination in children. In a recent group of 10 cases in Lanz' service, the children were all under 2. All recovered in the 9 cases in which the interval from the first symptoms had been from three to thirty-six hours. The interval had been four days in the one fatal case. In 5 of the cases there had been a preceding period of diarrhea and gastro-intestinal derangement; some dietetic error is evidently a factor. In one case the cecum protruded from the anus as a large tumor, red and bleeding, and it was found that the child of 2 had been fed on herring with mustard sauce. Diarrhea had followed this and then intussusception. The invagination could not be palpated in 3 cases; all but 2 had blood in the stools. In another case the symptoms indicated invagination but they subsided spontaneously. The diagnosis in this case is still uncertain. The operation was made in all the cases as brief as possible; no attempt was made to fasten the loop to the abdominal wall as some recommend. There has been no tendency to recurrence in any instance. In 3 cases the appendix, in one a diverticulum was involved, and in one case some mesenteric glands were tuberculous. When pure blood is seen at the anus, the invagination has probably only just occurred. It thus is a favorable element, as the surgeon is more likely to get a chance to operate early. Lanz has been one of the pioneers in insisting on prompt operation for invagination and incarcerated hernia, his denunciation of taxis in 1902 having been a turning point.

Oct. 28, 1922, 2, No. 18

- Classic or Modern Preparatory Medical Training? G. von Rijnberk.—p. 1930.
- \*Experiences with 250 Cases of Diabetes. W. Hoogslag.—p. 1934.
- Structure and Import of the Connective Tissue. G. C. Heringa.—p. 1952.
- Modified Sulfoxylat-Salvarsan. P. Rinsema.—p. 1963.

**Diabetes.**—Hoogslag says that in 215 of his 250 cases of diabetes he found consanguineous marriages in 8 and 5 in this group of 8 were Jews. The Jews numbered 41 in his total of 250 cases. The ages ranged from 10 to 79 years, and the occupation was an unmistakable factor, in that conditions predisposing to corpulence favored diabetes also. Captains of passenger steamers are peculiarly predisposed as they have to preside at the meals and they get little exercise. Eating less and exercising more may cure without further measures. Lipogenous diabetes is found almost exclusively among the well to do. Lean diabetes is encountered in rich and poor alike, in children and especially in brain workers and in those with much responsibility. None of his diabetic patients complained of hunger but most of them of lassitude, both physical and mental, and of pains, in the most diverse parts



of the body. The practitioner must always bear in mind the protean nature of the manifestations of diabetes, and examine for sugar in every puzzling case. He cites a number of examples of patients applying to one physician after another before the diabetes was suspected; one was being treated for supposed sciatica; one by a skin specialist for a traumatic affection on the leg which refused to heal; another was being treated by a urologist for vulvar pruritus and dysuria. As no benefit followed, she consulted a female quack who recognized the diabetes and cured her by dieting. Hoogslag remarks that he was amazed at this quack's discernment, until a little later he was consulted by this quack who it seems had had diabetes herself for years. She had suffered from vulvar pruritus and had cured it on a physician's advice by the dieting, which she now advised in her turn. In another case pains in the face after exposure to wind were treated by the family physician for rheumatism without avail. Teeth were extracted and finally the rhinologist performed an intranasal operation. A surgeon then injected alcohol to block the nerve, but with only transient benefit. Lead poisoning was then suspected. Finally the patient took some urine to a quack but his sham examination revealed nothing. The man's daughter overheard a woman saying that the pains in the face from which she used to suffer had not returned since her doctor had found sugar and regulated her diet. The daughter then took a bottle of urine to the family physician, and he was mortified indeed to find 8 per cent. sugar in it. In a week the pains were completely cured.

He cites other cases which demonstrate the necessity for examining a specimen of the twenty-four hour urine or at least the urine of the whole day. Diabetes developing after an infectious disease was common in his experience. In 2 cases the onset was sudden and stormy and the course grave. One woman had repeated abortions after the onset of her diabetes. He deplors the heedlessness of the dentists who fail to advise examination of the urine when the teeth are showing the effect of diabetes. In 3 cases—all speedily fatal—falling of the hair was a prominent symptom. Abuse of alcohol, tobacco, sweets or beer did not seem to be an appreciable factor. The gynecologist, ophthalmologist or neurologist may be consulted first. In 43 per cent. of 207 cases, diabetes was known in the family. In some families the disease known in three generations ran a mild, in others a grave course. He never encountered a combination with gout or asthma, giant or dwarf growth. He discusses in detail his experience with treatment and the prognosis. In conclusion he warns that diabetes in children often escapes detection; in some cases there was alarming acidosis before the urine was examined. In others, symptoms suggesting ileus had led to unnecessary operations.

### Finska Läkaresällskapets Handlingar, Helsingfors

September-October, 1922, 64, No. 9-10

- \*Renal Diabetes. A. Johnsson.—p. 429.
- \*Differentiation of Spinal Cord Affections. W. Kerppola.—p. 442.
- \*Experimental Glycosuria. M. Savolin.—p. 456.
- \*Blood Cysts in Ovaries. B. Nyström.—p. 483.
- The Life of the Mind. E. Ehrnrooth.—p. 493.
- Metastatic Brain Abscess from Pleural Empyema. H. Hublin.—p. 524.

**Renal Diabetes.**—In the first of the two cases Johnsson analyzes, the man of 35 has been under observation for ten years, and the renal diabetes has persisted practically unmodified during this long period. The other patient is a woman of 44; her father had died from diabetes and her two brothers and one sister present mild diabetes, while she herself presents merely renal diabetes. It has persisted for sixteen years, unmodified, and independent of the diet. With alimentary glucose and starch tests, the sugar content of the blood increased in the woman as in normal conditions; in the man the increase was subnormal.

**Differentiation of Disease in or Outside the Spinal Cord.**—Kerppola concludes from his study of thirteen cases of spinal nervous disease that it is possible to determine whether the lesion is in or merely adjacent to the spinal cord. When the sensibility in the lower sacral segments is retained—especially the heat sense—this testifies to an extramedullary process. When the sensibility is abolished on one or both

sides, the probabilities are in favor of some process in the spinal cord itself.

**Experimental Glycosuria.**—Savolin refers to the glycosuria which appears when the thoracic duct is ligated or its contents diverted. Its cause is still a mystery, and does not seem to have anything to do with diabetes mellitus. He experimented on cats with pancreas diabetes, and analyzes some clinical cases in which the thoracic duct had been torn or compressed. No glycosuria developed thereafter; possibly collaterals maintained the circulation. We have no grounds for assuming that the secretion of the pancreas reaches the blood by way of the thoracic duct.

**Blood Cyst in Ovary.**—A right tuberculous salpingo-oophoritis was probably responsible for the blood cyst in the woman of 26. The adnexa on that side were removed; those on the other side, and the uterus, seemed normal.

### Hospitalstidende, Copenhagen

Oct. 25, 1922, 65, No. 43

\*Study of the Blood in Young Infants. P. Drucker.—p. 721. Conc'n.

**Hemoglobin and Corpuscle Volume Percentage in Young Infants.**—Drucker tabulates the findings from eighty-five healthy infants from 2 weeks to 2 years old, and tabulates the findings of Williamson and Appleton for comparison. He also compares the findings in fourteen children as determined in the different drops of blood, from the first to the fifteenth. The third drop is most instructive; the first two drops are generally darker in color, probably from less complete oxidation. For this and other reasons he insists that the findings are liable to be misleading unless the prick or incision in the ear is made quite deep and with a very sharp instrument (cataract knife). His figures show that the blood in infants is physiologically of a chlorosis type. This "chlorosis" reaches its maximum about the ninth month, which sustains the theory of a congenital store of iron. He adds that this physiologic tendency to the chlorosis type of blood in children persists nearly up to puberty, and this should be borne in mind in estimating the blood findings in a given case. The hemoglobin percentage (Haldane) divided by the cell volume gives a quotient which is low in the chlorosis type of anemia. Knowing, from tables he has compiled or quoted, the standard of this Hv quotient for each age, we can readily detect and estimate any deviation from normal, especially any tendency of the blood to become more concentrated.

Nov. 1, 1922, 65, No. 44

\*Colorimetric Estimation of Albumin. Jørgensen and Tørning.—p. 737.

**Colorimetric Determination of Albumin.**—Jørgensen and Tørning describe their modification of Claudius' method, and extol its advantages, saying that the whole procedure can easily be carried out in less than five minutes.

### Svenska Läkaresällskapets Handlingar, Stockholm

Sept. 30, 1922, 48, No. 3

- \*Structure of Goiters. A. Troell.—p. 125.
- \*Operative Treatment of Gastric and Duodenal Ulcers. E. Hedlund.—p. 167. Cont'd.

**Structure of Goiters.**—Troell gives 17 plates showing 63 photomicrograms, 4 of them colored, from 63 cases of goiter. Most of the cases were of the exophthalmic goiter type. Certain pathologic anatomic findings seem to be constant in the cases with diffuse disease, as he describes, although not in all stages. The thyroid secretion takes stains differently from the normal secretion or with ordinary goiter (basophil or acidophil). The follicles displayed an active hyperplasia. Round cell infiltration was found in 90 per cent. of the toxic goiters. Two pages of bibliography are appended.

**Gastric and Duodenal Ulcer.**—Hedlund analyzes his experience with 485 operative cases of gastric and duodenal ulcer, 1905 to 1920. The Weber test for occult blood was positive in 134. There was a history of profuse hemorrhage from the stomach in 31 cases, but in 45 per cent. in this group the operative findings were negative. Occult blood was found in 134, but the operative findings were negative in 26 per cent. of them. In 54 cases an ulcer was found although the Weber test had been negative. He tabulates the details of the present condition in all but 5 per cent. of the total. He classifies them according to the operation performed.



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## THE COURSE OF MORTALITY FROM CANCER IN BALTIMORE\*

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BALTIMORE

Of the many interesting questions that have emerged from the intensive study of cancer which has been conducted during the last seventy years, two of the most important are: Is cancer actually increasing? and Is it really curable? As is well known, in recent years, the first question has been answered in the affirmative by some statisticians, in the negative by others; and some critical students regard the material at hand insufficient in both quantity and quality for final judgment. The confession is made freely by surgeons of talent, training and indubitable probity that their just claims of high percentages of permanent cures in suitable cases, treated early by mechanical measures, are not generally accepted at face value by the bulk of the laity and of the medical profession. In the time at my disposal, it is not possible to review the now voluminous literatures on these two questions. Following strictly the implication of its title, in the present paper attention will be limited to a consideration of the Baltimore material, and in particular to the statistical data I have gathered from the records of the city health department.

For our present purposes, at least, this qualification has decided advantages, since the medical history of the city is well known to many, and from a critical study of the statistical records of the health department, extending over a number of years, I am in a position to estimate their value with some degree of assurance.

In this discussion I shall use the term cancer as synonymous with malignant growth, or tumor, whatever its histologic structure or origin, invading surrounding tissues and forming or capable of forming metastases. Similarly, the term benign tumor is used in the ordinary pathologico-anatomic sense as denoting a true tumor that does not infiltrate neighboring tissues or form secondary growths. From the practical standpoint, the great difference lies in the fact that, speaking generally, benign tumors exert no specific deleterious influence on health, and, barring such accidental complications as hemorrhage, torsion, necrosis and infection, they derive their lethal qualities from their size and position; in other words, from the mechanical pressure which they may exercise on vital parts. Cancers, or malignant tumors, besides this quality exerted in some instances by either the primary

growths or by the metastases to which they so often give rise possess peculiar powers of injuring the organs which they primarily or secondarily invade by diffuse displacement of parenchymatous and supporting structures, and the system in important parts or perhaps as a whole by intoxication.

The typically anatomically benign tumor, barring the accidents referred to, remains clinically benign or nonmalignant so long as it does not exercise undue pressure; but should it, owing to seat, to undue size or to accidental complications, surpass certain bounds, ill health and finally death will ensue as certainly as in the case of cancer. For instance, an anatomically benign tumor of the skull or of the meninges, by pressure on certain portions of the brain, may kill as certainly as a diffusely spreading cancer of this organ; and a large, ulcerating, bleeding myoma of the uterus may cause death as surely as a sarcoma or carcinoma. Again, tumors primarily benign in regard to both histologic structure and other qualities, may and often do become anatomically malignant, or, in other words, typically malignant tumors may have their origin in benign tumors as well as apparently normal tissues. Among cancers there are all grades of malignancy, but, speaking generally, physicians judge this quality by rapidity and size of growth, the extensiveness of metastases and the degree of the associated prostration or cachexia. These and other important facts regarding the essential nature of tumors, so trite to this generation of medical men, came to light but gradually. It is not surprising, therefore, that statistical nosology, until recent years, has largely ignored them. Hence we find that until comparatively recently, distinction was not drawn sharply between deaths from cancerous and noncancerous tumors. Even now in statistical nosology, partly on account of imperative necessity for condensation and partly on account of lack of specific diagnosis on death certificates, no account is taken of differences of tissue origin and structure of either benign or malignant tumors. For instance, among tumors of the uterus, no distinction is made between such distinctly different kinds of growths as sarcoma of the uterine wall, carcinoma of the body and cervix, and chorio-epithelioma, so called. They are all rated as cancer of the uterus.

### CLASSIFICATION

With the exception of 1815 and 1823, deaths from cancer have been recorded in the Baltimore tables of motrality in every year since 1813, but not until 1875 were they classified by organs affected. In the latter year, deaths from this affection were classified under cancer—diffused, breast, liver, face, rectum, uterus, stomach, neck, brain and pylorus. In 1878 these rubrics were further expanded to include cancer of

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\* Papers from the Department of Biometry and Vital Statistics, School of Hygiene and Public Health, Johns Hopkins University, No. 79.



the tongue, testicle, intestine, esophagus, trachea, mouth, eye, mesentery, arm, omentum, elbow and spine. From 1878 to 1899, when the international supplanted the old alphabetical system of classification, the statistical rubrics were expanded to include each organ or part certified in any particular year as the seat of fatal cancer. Since 1905 the number of rubrics has been restricted to conform with exactness to the limits

TABLE 1.—AVERAGE RATE OF DEATH PER HUNDRED THOUSAND LIVING INHABITANTS BY FIVE-YEAR PERIODS, FROM CANCER AND OTHER TUMORS, AND FROM SENILITY AND CAUSES UNKNOWN IN ADULTS, FROM 1812 TO 1920, INCLUSIVE

Periods	Cancer	Tumor	Cancer and Tumor	Senility	Causes and Causes Unknown	Senility Causes and Causes Unknown
1812-1815	4	...	4	145	...	145
1816-1820	8	...	8	123	...	123
1821-1825	4	1	5	120	39	159
1826-1830	9	...	9	119	56	175
1831-1835	7	1	8	126	30	156
1836-1840	8	2	10	95	22	117
1841-1845	9	3	12	76	40	116
1846-1850	10	3	13	96	74	170
1851-1855	11	2	13	100	56	156
1856-1860	11	3	14	94	73	167
1861-1865	14	2	16	85	63	148
1866-1870	19	4	23	89	62	151
1871-1875	24	6	30	100	36	136
1876-1880	47	7	54	72	4	76
1881-1885	47	4	51	77	3	80
1886-1890	57	6	63	74	1	75
1891-1895	59	6	65	80	...	80
1896-1900	66	7	73	65	...	65
1901-1905	76	8	84	54	...	54
1906-1910	84	5	89	41	...	41
1911-1915	97	4	102	28	...	28
1916-1920	106	5	111	12	...	12

of the revised international system. Therefore it is clear that anyone familiar with the rules of the latter classification of causes of death can appropriately place under its rubrics deaths certified as due to cancer of various organs and parts in the period of 1875-1904. Though the rubric tumor appeared in the local statistical records in 1821, 1822, 1829 and 1830, it was not until 1833 that it secured a permanent place. Since 1875 deaths from "tumor" have been classified under organs of seat, but since 1899, with relatively few exceptions, they have been thought to be due to benign tumors of the uterus and ovaries. While the deaths ascribed to tumors have not been numerous as compared with those classified under cancer, the inference is inescapable that until 1899 a not inconsiderable proportion of the former properly belonged under cancer or malignant tumor. Since 1910, under the classification rules of the Bureau of the Census, tumor of the brain has been classified under "other diseases of the nervous system." On account of growth in perfection in this period of measures of diagnosis and of operation for growths of this situation, many of which are malignant, this practice has affected to some degree the rates for both cancer and tumor.

COURSE OF MORTALITY

When, now, in attempting to measure the course of recorded annual mortality from cancer and tumor in Baltimore over this period of 108 years, we apply the commonly used standard, namely, crude rates per hundred thousand of the living population at all ages, we obtain results agreeing in general with those observed elsewhere. The chief difference lies in the fact that the local data extend over a longer period of time than is usually the case. In short, the annual crude mortality rates for tumors as a whole—that is, for deaths ascribed to cancer and to tumor taken together—were

relatively low until after 1870. With considerable fluctuations from year to year, the rates ascended from 2 in 1813 to 15 in 1821 and to 20 in 1846. By 1850 the rate had fallen to 9, and it was not until 1865 that the level of 1846 was again attained. The rate reached 27 in 1868, but by 1870 it again stood at 20. From the latter date the rate rose steadily, but with some fluctuations, of course, to 117 in 1920. From 1835 to 1920 the rates for tumor alone showed considerable annual fluctuations, but they were never considerable, and exceeded 10 in but one year. During the entire period under review, the course of the rates for cancer alone has determined the shape of the curve for the combined rate. For cancer alone the rates rose from 2 in 1813 to 11 in 1835. By 1867 the rate reached 20 for the first time. Reaching 51 in 1880, the rate rose with several relatively minor recessions to 113 by 1920.

When the irregularities incident to minor annual fluctuations are smoothed out by averaging the rates for five year periods from 1816 to 1920, inclusive (Table 1 and Chart 1), a sharply cut picture of the course of mortality of these affections, as determined by crude rates, is presented. Considering first the combined rate for cancer and tumor, it will be observed that until 1865 the rate was relatively insignificant, but, on the whole, progressively though slowly rising. In the next fifteen years, that is, between 1866 and 1880, the rate increased by 135 per cent. to 54, and these affections taken together had now become very significant causes of death. For the period 1881-1885 there was a slight recession, but for the quinquennial periods 1886-1890 and 1891-1895 the rates were 63 and 65, respectively. Since 1890 the rate has risen

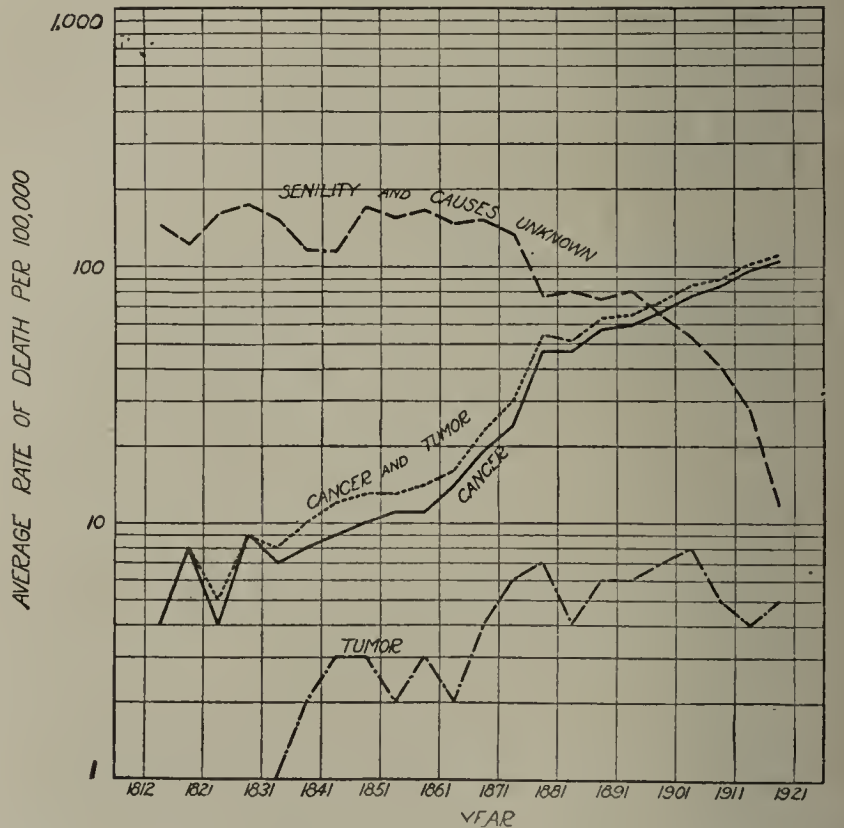


Chart 1.—The average rate of death per hundred thousand living inhabitants by five-year periods from cancer and other tumors, from 1812 to 1920, inclusive.

uninterruptedly, and for the five year period ending in 1920 it stood at 111. It is evident at a glance that the proportional contribution of tumors unqualified to the combined rate has declined on the whole since 1850, and that since 1905 has been an element of comparatively slight importance. The course of the curve of mortality for cancer follows so closely that for the combined rate that comment is unnecessary. So far,



then, it appears that since 1875, or in the last forty-five years, if these figures are accepted as reflecting correctly actual experience, mortality from tumors, benign and malignant, has increased by 100 per cent. By the same token, during the 100 years just past, the lethal force of tumors has multiplied by nearly 1,300 per cent. Since 1900, the crude death rate from cancer alone has increased by 40 per cent.

#### EXPLANATION OF INCREASE IN RECORDED DEATH RATES

How may these great increases in the recorded death rates for cancer be explained? To what degree do they represent actual occurrence? First to be considered in this connection are the questions of improvement in medical diagnosis and in statistical classification of deaths. The influence of improvement in diagnosis may be tested somewhat roughly in the following fashion: The deaths recorded as due to cancer since 1875 can be separated into five fairly well defined groups, (1) breast; (2) female genitals (uterus, ovary, vagina and pelvis); (3) esophagus, stomach and liver; (4) intestine and peritoneum, and (5) all other organs. The first four groups represent, respectively, Rubrics 43, 42, 40 and 41 of the international classification of causes of death, revision of 1909.

Cancer of the breast, equivalent for practical purposes to cancer of the female breast, is not only common enough, but in fatal cases is easily recognizable. It is the best example of accessible or open cancer of frequent occurrence. There is little room, therefore, for errors of diagnosis (in fatal cases) and of classification. Among the important organs not directly on the surface, but frequently the seat of fatal cancer, the uterus is most readily accessible to physical examination. Cancer of the cervix uteri, the most common form, can hardly proceed to a fatal termination without giving rise to clinical symptoms that demand attention, and in such cases the merest tyro in medicine can rarely fail in correct diagnosis. Similarly, cancer of the body of the uterus, in the last stages at least, has not, in the period now under consideration, presented difficulties of diagnosis. Nor in this period has the diagnosis of the comparatively rare primary cancer of the vagina and the external genitals of the female in fatal cases presented any serious difficulty. Cancer of the ovary and "of the pelvis," the latter appearing only occasionally in the records, is comparatively rare and is recognized chiefly at operation. Since 1876, however, few women in Baltimore with ovarian tumors have escaped operation. In cancer of these organs the important problems have not been concerned with ultimate, but rather with early recognition and with operative technic. The first two of these rubrics which we have set up present a particularly favorable material for study in this connection.

With regard to the third rubric, conditions are much less satisfactory. Malignant growths of the esophagus, though not exposed to direct view and relatively uncommon, are not only the most important cause after early life of stricture of the gullet, but before the fatal issue are associated with unmistakably characteristic symptoms. The affection may, it is true, be readily confused with cancer of the cardiac end of the stomach; but as the two affections belong to the same rubric, errors of differential diagnosis as between cancer of these two organs are of no present consequence. The diagnosis of cancer of the stomach, even yet often mistaken in fatal cases, has certainly increased

greatly in accuracy since 1875. It was not until well after this date that our late colleague, Dr. Saltzer, specialized in diseases of the stomach and applied the newer methods of gastric analysis. It was some years before the routine use of chemical and microscopic methods in the diagnosis of diseases of the stomach by Osler in his clinic, opened in 1889, was adopted in other hospitals, and private clinical laboratories were established. It was hardly before 1900 that, through the work of gastro-enterologists, consulting internists, laboratory specialists (including roentgenologists), and surgeons—the latter by exposing the organ to direct inspection—the present era of intensive study of diseases of the stomach (and small intestine as well), may be said to have opened in Baltimore. It must be granted, therefore, that since 1876 the recognition of gastric cancer in its last as well as in its early stages has increased progressively in accuracy. As this organ is one of the most common seats of primary cancer in both sexes, the increased precision of diagnosis must have exercised an important part in the observed rise in the crude rate for cancer.

While primary cancer of the liver is comparatively rare, of the important viscera this organ is the one that is most frequently the seat of diagnosable malignant growths originating in other parts of the body. So propitious are conditions in this organ for the deposit and growth of metastases that, from primary cancers in themselves relatively obscure, it is often the seat of secondary growths so prominent on account of their number and size as to fix attention. While a large proportion of cancers of other organs of digestion, as the esophagus, stomach, intestine and pancreas, metastasize in the liver, it is also often involved secondarily from malignant growths not only of other abdominal organs, notably the uterus, but of such distant parts as the extremities, the central nervous system, the eye and the skin. In consequence, though these peculiarities of the liver often determine the recognition of cancer that would be otherwise overlooked, likewise they are responsible not infrequently for errors in statistical classification. With the increase of knowledge of the pathology of cancer and the improvement in diagnosis, doubtless, in many instances, deaths which in earlier years would have been credited to cancer of the liver have in more recent years been assigned in the statistical classification to the proper organs of origin. On the whole, however, it may be assumed that during the last forty-five years the diagnosis of malignant growths falling under our third group has undergone a very decided improvement.

The diagnosis of the relatively rare cancer of the small intestine has been until recent years comparatively obscure. The diagnosis and statistical classification of cancer of the colon have without doubt increased greatly in precision, but it is probable that a considerable proportion of deaths from cancer of the small and large intestine (the rectum excepted) are still classified under intestinal obstruction and other rubrics. Cancer of the rectum is comparatively accessible, and it is doubtful whether in its terminal stage any marked improvement in its diagnosis has occurred in the period under consideration. Primary cancer of the peritoneum is so infrequent as to be of relatively minor importance.

Cancer of "all other organs" embraces several distinct groups of malignant tumors which vary widely in the ease with which they may be recognized. Cancers of the skin (including the external genitals), the



nasal and buccal cavities, the eye, the larynx, the thyroid, the testes, the superficial lymph glands, the subcutaneous connective tissue, the skeletal muscles, and the bones which, taken together, represent a very considerable proportion of all malignant growths, have presented, in their fatal stages at least, no great difficulties in diagnosis that have been dissipated by recent advances in medical knowledge. In this respect they are, for the most part, directly comparable with cancers of the breast and uterus. On the other hand, cancers of the lungs and pleura, of the deeper lymphatic system, of the bladder, prostate and kidneys, of certain abdominal organs, as the pancreas, the kidneys, and the suprarenals, and of the central nervous system compose a group numerically less significant than the foregoing, and in this group diagnosis has in late years achieved very considerable progress. Out of this group, during the last ten years, fell growths of the brain, many of which are malignant. This error imposed by official rules of statistical classification has been more than counterbalanced, perhaps, by the dispersion to the proper organs of origin the members of the old statistical group "cancer, diffused." It seems likely, then, that in a substantial majority of instances the members

TABLE 2.—AVERAGE RATE OF DEATH PER HUNDRED THOUSAND LIVING INHABITANTS BY FIVE-YEAR PERIODS. FROM CANCER, FROM 1876 TO 1920, INCLUSIVE

Period	Grand Total	Rubric 40: Total Rubrics 40 and 41	Rubric 40: Esophagus, Stomach and Liver	Rubric 41: Intestine, Rectum and Peritoneum	Total Rubrics 42 and 43	Rubric 43: Breast	Rubric 42: Uterus, Ovaries and Pelvis	All Other Organs
1876-1880	47	17	15	2	18	6	12	12
1881-1885	50	20	16	4	19	7	11	11
1886-1890	57	25	20	5	22	8	14	10
1891-1895	59	25	21	4	22	8	15	11
1896-1900	66	29	26	4	23	8	16	14
1901-1905	76	38	31	8	21	8	13	16
1906-1910	84	42	34	8	23	8	15	19
1911-1915	98	48	37	11	25	9	15	26
1916-1920	106	52	39	13	27	10	17	27

of the category of "cancer of all other organs" were as readily recognizable in 1876 as in 1920. There can be no doubt that the increased frequency with which necropsies have been conducted by trained pathologic anatomists in both homes and hospitals since the opening of the Johns Hopkins Hospital in 1889 has contributed materially to correctness of diagnosis and, in consequence, of statistical classification of deaths due to tumors.

All things considered, on the basis of increase in precision of diagnosis alone, there should be no rise in the mortality from cancer of the breast and uterus, but the advance in the rates for cancer of the esophagus, stomach and liver should be considerable; in those for cancer of the intestine and peritoneum, very marked; and, finally, the increase in the rates for cancer "of all other organs" should be somewhat less than for cancer of the esophagus, stomach and liver. The crude mortality rates for these various categories as averaged for five year periods from 1876 to 1920, inclusive, are compared in Table 2. It will be observed that though the rate for each has risen, the increases are by no means equal. While the total rate for cancer increased by 125 per cent., and the rates for cancer of the breast and of the uterus (and other female organs of generation) rose by but 67 and 42 per cent., respectively, the rate for cancer of the esophagus, stomach and liver rose by 160 per cent., and that for the intes-

tine and peritoneum by 550 per cent. On the other hand, the rate for cancer of "all other organs" rose by only 125 per cent., or in the same proportion as the total cancer rate. The increase in the rates for cancer of the breast and of the female generative organs was notably less than it was in those for the other three categories, and the advance in the rates for the latter categories varied roughly with the scope that was assumed to be available for the effect of improvement in diagnosis. But it was assumed that, on the basis of improvement in diagnosis, there should be no gain at all in the rates for cancer of the breast and of the female generative organs. In regard to this point, it is significant that during most of the period, i. e., from 1886 to 1910, these rates were practically stationary. The slight ascents in these rates in the periods before and after these dates may well be explained by variables yet to be considered.

If the mortality for tumors as a whole and for cancer in particular has not actually but only apparently risen in the striking ratio the official figures would seem to indicate, under what statistical rubrics were the unaccounted for tumor deaths classified? While they may have been dispersed, perhaps, under many rubrics through which it is now impossible to trace them, two rubrics, causes unknown in adults and senility, probably received the majority. The rates for these averaged for five year periods are compared with those for tumors in Table 1. The decline in the rates for these indefinite causes much more than counterbalances the ascent in the rates for tumors. Though there is ample room in these rubrics for hidden cancer (as well as for other causes of death improperly assigned) even if the higher rates of later years represented no actual increase in cancer, this evidence is only suggestive. Another heading under which some cancer deaths may well be concealed is intestinal obstruction; but as this is combined in the same rubric with hernia, comparison is not here attempted. Since 1900, and particularly since 1910, special care has been taken in the division of statistics of the health department to secure full and accurate classification of deaths from tumor.

In addition to the direct influence on cancer mortality rates, which, it has already been pointed out, must be attributed to the perfection in the methods of diagnosis and treatment during the last thirty or forty years, there must be taken into consideration the possibility of an indirect effect. It is a well established fact that since 1890 an ever increasing number of patients with cancer have come to Baltimore from other places for advice and treatment. Some proportion of these must inevitably die here. It is reasonable to suppose, then, that the proportion of cancer deaths in nonresidents was low in the early period and high in recent years. Unfortunately, no data on this point are recorded before 1917. However, in the four years 1917-1920, inclusive, on an average, 17 per cent. of all recorded deaths from malignant tumors were in nonresidents—almost all of whom, it is certain, were attracted to the city by the reputation of its physicians and surgeons in diagnosis in general and in the diagnosis and treatment of cancer in particular. It is inconceivable that in early years nonresidents could have accounted for anything approaching such a high proportion of the total deaths from cancer. Unhappily, data in regard to deaths of nonresidents from benign tumors have not been tabulated, but it is well known



that each year an appreciable number of persons from out of town with growths of this type are operated on by local surgeons, and that some fail to survive the experiment. On the other hand, there is no evidence that any significant proportion of residents with either cancer or benign tumor died outside the city. Therefore the conclusion is forced that a considerable proportion of the increase in cancer mortality in later years is to be attributed to this factor.

So far, then, it has been ascertained that a very notable, though unfortunately a not accurately determinable proportion of the observed increase in crude mortality rates from malignant and other tumors in Baltimore is readily explainable on the basis of progressive improvement in diagnosis and statistical classification, and a rise in the ratio of deaths from these causes among nonresidents drawn to a medical center particularly famous for the diagnosis and treatment of these maladies.

We have come now to the consideration of the influence of such specific biologic attributes as race,

that in the earlier years the proportion of negroes to white persons was much greater than at present. Since 1880 there has been a steady and considerable decline in the ratio of negroes to white persons.

The influence of age on mortality from cancer of all organs for sex and race for 1920 is shown in Table 4. Below the twentieth year of age the deaths were few and, owing to the smallness of the figures, the differences in the rates as between white persons and negroes, and males and females, are hardly significant. Even in the third decade of life, the rate for the whole population was only 12. Here the mortality for negroes of both sexes was slightly higher than that for white persons. For the age period 30-39 years, the rates for the whole population were only 43; for white persons 43, and for negroes 55. In both races the rates were decidedly higher among females than among males. In females the risk of dying of cancer in this age period has become significant. Still, in the population as a whole below the fortieth year of age the risk is comparatively small. Of the total deaths

TABLE 3.—NUMBER OF DEATHS AND RATE OF DEATH PER HUNDRED THOUSAND LIVING INHABITANTS, FROM CANCER, ACCORDING TO COLOR AND SEX, FROM 1900 TO 1920, INCLUSIVE

Year	White								Colored							
	Total		Total		Male		Female		Total		Male		Female			
	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate
1900.....	318	63	275	64	95	46	180	81	43	55	8	23	35	81		
1901.....	358	70	319	73	118	56	201	90	39	49	7	20	32	73		
1902.....	384	74	340	77	128	60	212	93	44	55	13	36	31	70		
1903.....	370	70	332	74	121	56	211	92	38	47	12	33	26	58		
1904.....	450	84	391	87	147	67	244	105	59	71	18	49	41	90		
1905.....	437	81	380	83	152	68	228	97	57	68	17	45	40	87		
1906.....	450	82	390	84	146	65	244	103	60	71	24	63	36	77		
1907.....	473	85	415	89	168	74	247	103	58	67	13	33	45	95		
1908.....	449	80	386	82	148	64	238	99	63	72	17	43	46	96		
1909.....	450	79	393	82	142	61	251	103	57	64	19	47	38	78		
1910.....	529	92	474	98	176	74	298	121	55	61	12	30	43	88		
1911.....	526	91	469	96	195	82	274	110	57	63	15	36	42	85		
1912.....	545	93	480	98	177	73	303	121	65	71	19	45	46	92		
1913.....	598	101	510	103	198	81	312	124	88	94	33	78	55	108		
1914.....	595	100	515	103	205	83	310	122	80	85	20	47	60	117		
1915.....	627	104	564	111	235	94	329	128	63	66	28	64	35	67		
1916.....	636	105	550	108	261	104	290	112	85	88	25	57	60	114		
1917.....	640	105	568	110	255	100	313	120	72	74	23	51	49	92		
1918.....	637	103	564	109	234	91	330	126	73	74	29	64	44	82		
1919.....	749	104	660	107	286	93	374	121	89	85	27	56	62	110		
1920.....	827	113	724	116	332	108	392	124	103	95	37	69	66	119		

sex and age on the course of mortality from these affections.

INFLUENCE OF SEX AND RACE

Data are available for calculating the effect of sex and race stock as determined by color on the crude rates for cancer for the twenty-one year period 1900-1920. The results are shown in Table 3. In this period the rates rose for white persons from 64 to 116, and for negroes from 55 to 95. For sex, the increases were: White persons: males, from 46 to 108; females, from 81 to 124; negroes: males, from 23 to 69; females, from 81 to 119. The course of the rates was much smoother for white persons than for negroes. In few years did the rates for negro males approach those for white males. Though there were no great differences between the rates for females of the two races, the rate for whites was almost invariably higher. In no one of these four groups did the rates fail to increase considerably during this period. It is clear not only that, as is commonly the case, high cancer rates are favored by predominance of females over males, but also that these rates must be influenced in a significant degree by variations in the proportion of negroes in the population. Though, as judged by the results of this analysis, the importance to be ascribed to these points is not great, it is of interest

from this affection, only 10 per cent. of the whole, 9 per cent. of the white and 16 per cent. of the negro, occurred in this large section of the population. From the fortieth year onward to the eightieth year in white persons and to the seventieth year in negroes, these rates climb very steadily, to fall slightly during the remainder of life. Among the age group 70-79 years, slightly more than one in every 100 living white persons died of cancer, while in the negro the mortality was less by half. It is noteworthy that, between the twentieth and sixtieth years of life, the mortality was uniformly higher in negroes than in white persons, and that after the sixtieth year this condition is reversed, and by the eighth decade the death rate for white persons is more than double that for negroes. The reason for this is very evident. It lies mainly in the fact that between the thirtieth and the sixtieth years of life the negress has much the highest death rate, and that from the fortieth year the negro man has a much lower rate than either sex of the white race. The tailing off of the total rate for negroes after the seventieth year is due chiefly to decline in mortality among women. It is worthy of note that among white persons in the eighth decade of life the mortality is greater in men than in women, while after the eightieth year conditions are reversed.



INFLUENCE OF AGE

Of the variety of interesting and instructive facts derived from the foregoing analysis, the one of greatest importance for our present purpose is the capital rôle in cancer mortality played by age. If the results of these observations may be applied to the whole period under consideration—and there is nothing in the known history of cancer to forbid—it is obvious that, other things remaining equal, the cancer death rate would have been unfavorably influenced by relative increase in the population of white persons, especially of women, of females of both races, of white persons aged 40 years and over and of negroes between the fortieth and the seventieth years of life.

from 29.2 to 54.8 per cent. of the whole, or an increase of 55 per cent. Between 1830 and 1920, therefore, the increase in the proportion of the population in the age period most susceptible to cancer was in a ratio far below that of the recorded increase in cancer mortality. Mortality rates for cancer and tumor for each census year between 1830 and 1920, calculated on the basis of the population at all ages and the populations above the thirtieth and fortieth years of life, respectively, are given in Table 5 and Chart 2. Whatever their specific differences, these rates for the census years follow the same general course throughout. All show an ascent more or less gradual until 1870, with a sharp rise to much higher levels in 1880.

TABLE 4.—NUMBER OF DEATHS AND RATE OF DEATH PER HUNDRED THOUSAND LIVING INHABITANTS, FROM CANCER, ACCORDING TO AGE, COLOR AND SEX FOR 1920

Age Period	Total Population		White								Colored					
	Deaths Rate		Total		Male		Female				Total		Male		Female	
			Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate
Under 1 year.....	1	7	1	8	1	15	..	..	..	..	..	..	..	..	..	..
Between 2 and 4 years.....	3	6	2	4	1	4	1	4	1	16	..	..	..	..	1	30
5 and 9 years.....	1	2	1	2	1	4	..	..	..	..	..	..	..	..	..	..
10 and 19 years.....	5	8	4	3	3	5	1	2	1	6	..	..	..	..	1	12
20 and 29 years.....	5	4	5	5	..	..	5	9	..	..	..	..	..	..	..	..
30 and 39 years.....	18	12	14	12	8	14	6	10	4	15	2	16	2	15	2	15
40 and 49 years.....	55	45	43	43	17	34	26	52	12	55	4	36	8	74	8	74
50 and 59 years.....	151	164	120	156	48	126	72	187	31	199	8	97	23	316	23	316
60 and 69 years.....	212	339	180	329	86	322	94	335	32	407	11	259	21	581	21	581
70 and 79 years.....	214	594	198	608	101	660	97	563	16	462	8	467	8	457	8	457
80 years and over.....	140	971	134	1026	63	1126	71	952	6	442	3	496	3	399	3	399
Total.....	27	776	26	832	6	534	20	999	1	282	1	746	..	..	..	..
Total.....	827	113	724	116	332	108	392	124	103	95	37	70	66	119		

TABLE 5.—NUMBER\* OF DEATHS AND RATE OF DEATH PER HUNDRED THOUSAND LIVING INHABITANTS OF THE SEVERAL AGE GROUPS, POPULATION AT ALL AGES, 30 YEARS AND OVER AND 40 YEARS AND OVER, FROM CANCER AND TUMOR AND FROM SENILITY AND CAUSES UNKNOWN IN ADULTS, FOR THE CENSUS YEARS 1830-1920, INCLUSIVE

Census Years	Population at All Ages						Of 30 Years and Over			Of 40 Years and Over									
	Cancer		Tumor		Cancer and Tumor		Cancer and Tumor			Cancer and Tumor			Senility		Causes Unknown		Senility and Causes Unknown		
	Deaths	Rate	Deaths	Rate	Deaths	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Rate
1830	6	7	1	1	7	9	18	3	21	26	4	31	102	450	43	190	145	640	
1840	9	9	3	3	12	12	29	10	39	56	19	75	104	651	32	200	136	851	
1850	14	8	3	2	17	10	26	6	32	48	10	59	155	535	94	325	249	860	
1860	30	14	4	2	34	16	42	6	47	75	10	85	197	492	144	360	341	852	
1870	49	18	8	3	57	21	51	8	60	87	14	101	288	513	141	251	429	764	
1880	174	52	34	10	208	63	139	27	167	226	44	270	252	327	14	18	266	345	
1890	256	59	25	6	281	65	151	15	166	247	24	271	365	352	6	6	371	358	
1900	338	67	35	7	373	73	164	17	181	268	28	296	357	283	..	..	357	283	
1910	502	90	27	5	529	95	209	11	220	331	18	349	191	126	..	..	191	126	
1920	789	108	27	4	816	111	238	8	246	378	13	391	60	29	..	..	60	29	

\* In each instance the figures for the number of deaths represent the average of three consecutive years, namely, the census year and the year immediately preceding and succeeding.

The influence of changes in the age distribution of the whole population on the increase in the mortality rates for cancer (and "tumor") may be estimated in several ways. As it has been shown that of the deaths ascribed to cancer only a small proportion occurred in persons below the fortieth year, and an almost negligible proportion in those under the thirtieth year of age, it is permissible, for the sake of an approximate estimate of the influence of changes in the age distribution of the population, to disregard the lower age groups and to consider only that portion of the population above these two ages. Between 1830 and 1920, the percentage of the population of 40 years of age and over increased from 15.7 to 28.5 per cent. of the whole, or by 75 per cent.<sup>1</sup> In the same period the proportion of population 30 years of age and over rose

Though some, at least, of the increase in the recorded mortality previous to 1870 may well have been due to an actual increase in the lethal force of tumors, it is inconceivable that the enormous advance in the rates between 1870 and 1880 can be thus explained. The rates for all tumors in 1830 and 1850 did not approach the level which, it will be shown later, the mortality for cancer of the uterus and breast had attained in 1880. The rates recorded for 1870 would hardly have covered the expected mortality from all tumors readily diagnosable at that time. It seems likely, then, that in the period previous to 1870, the diagnosis of tumors, except in the most obvious cases, was, on the whole, poor, and that deaths from this cause were but poorly recorded and classified. By the same token, the enormous increase in the tumor rate for 1880, as compared with that for 1870, must have been due very largely, if not entirely, to improvement in statistical classification of deaths inaugurated after the introduction of death certificates in 1875, under the influence of a

1. The figures for the age distributions of the population here used are those of the United States Census Bureau, from actual counts for the census years 1850, 1860, 1890, 1900, 1910 and 1920, and as graduated by my colleague, Dr. Lowell J. Reed, for 1830, 1840, 1870 and 1880.



commissioner of health, Dr. James Steuart, who, as his reports show, was particularly interested in statistics. This view is supported by the fact that in the rates calculated for the census years, there was no increase in the total rates for cancer and tumor between 1880 and 1890. It has already been pointed out that methods of precision in the diagnosis of internal cancer

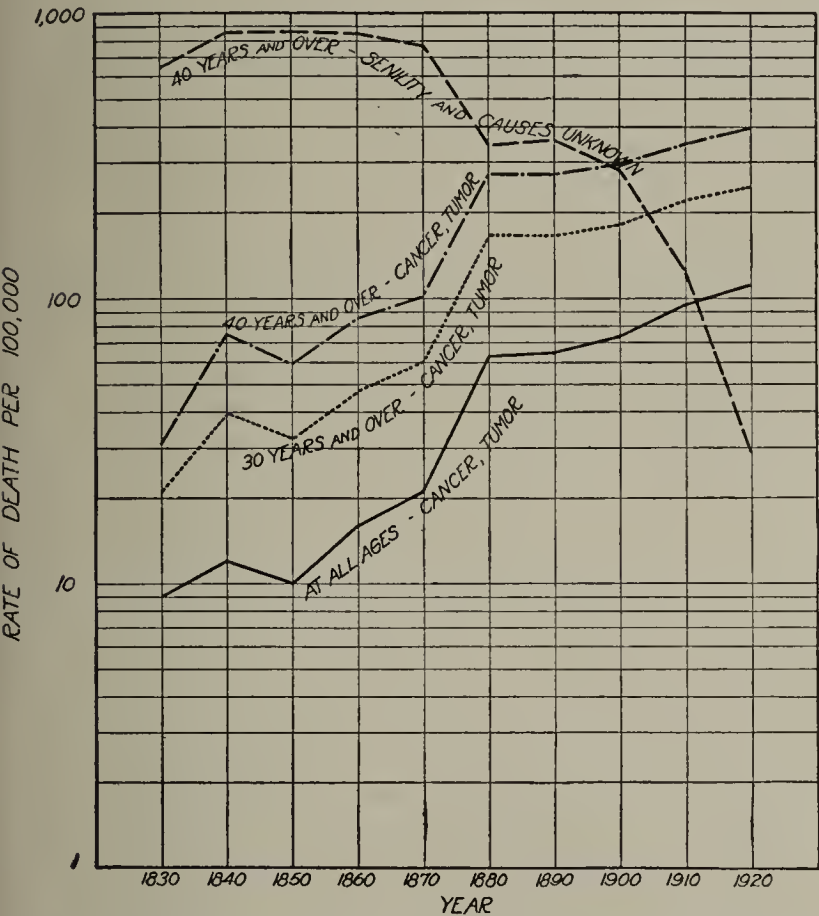


Chart 2.—The rate of death per hundred thousand living inhabitants of the several age groups. Population at all ages, 30 years and over and 40 years and over, from cancer and tumor and from senility and causes unknown in adults, for the census years 1830 to 1920, inclusive.

could have made but little progress in these ten years. If these observations and assumptions are correct, then the course of the rates for tumors (including cancer) does not signify an actual increase in lethal force in the period up to 1890. Since deaths classified under senility certainly and those under causes unknown in adults probably occurred very largely in persons 40 years of age and over, mortality rates for these two rubrics calculated for this age group are presented for comparison in Table 5 and Chart 2. It is evident that there was in these two indefinite rubrics alone ample room for all unclassified deaths from cancer and other tumors, as well as from various other chronic affections that were imperfectly recognized and classified previous to 1880. The close correspondence between the decline in the rates for these two rubrics, and the advance in those for benign and malignant tumors, particularly in the period 1860-1880, is striking. Since between 1880 and 1890 there was practically no increase in the rates, however calculated, further consideration of the course of these affections cover the thirty years since 1890. In this period the rates, however calculated, exhibit a progressive and considerable increase. The percentages of increases in these rates during the different portions of the period are shown in Table 6.

It will be observed that the greater the degree of correction for the age factor, the smaller the percentage of increase in the rates. Even this method must fail to express fully the influence of the age factor on the rates of cancer mortality, for here it is assumed

that all increase in the proportional increase in the population above the twenty-ninth and thirty-ninth years of life is of equal consequence in this respect. However, it has been shown in Table 3 that the risk of dying of cancer increases greatly and in rising ratios from decade to decade of life. It is evident, then, that increases in the proportion of the population in the higher decades, the sixth, seventh and eighth, for instance, must exercise a more marked influence on the cancer risk than corresponding increases in the fourth and fifth decades. As a matter of fact, in the period 1890-1920, the proportions of the population in the sixth, seventh and eighth decades of life increased by 21, 26 and 19 per cent., respectively, while the proportional increases for the fourth and fifth decades were only 4 and 16 per cent. So, if it were possible to calculate for each census year rates specific for each of these decades of life, that is, rates more fully specific for age, correction for this factor would have been even more potent in effect. But when death rates for cancer alone specific for age for the census years 1900, 1910 and 1920 are applied to the respective age distribution of a standard population (Glover's Life Table for the United States), a rise in the rate from 105 in 1900 to 173 in 1920, or an increase of 65 per cent., becomes apparent in this twenty-one year period as due to causes other than age influence.

While some of this rise in tumor rates due to causes other than changes in the age distribution is probably ascribable to improvement in statistical classification of deaths, if most of it does not represent an actual increase in mortality, complete explanation is to be sought in other factors. Suffice it here to point out that the known advances in precision in diagnosis and the probable augmentation of the proportion of non-resident deaths would probably cover the deficit. However, it must be acknowledged that up to this point definite proof that mortality from tumors has not really advanced has not been forthcoming. Nor has any offset been allowed for a reduction in mortality that should have occurred, if the surgeons are correct in their assertions that they have wrought definite cures in cancers of certain organs, and have been more suc-

TABLE 6.—PERCENTAGE OF INCREASE FROM ONE PERIOD TO ANOTHER OF RATES SHOWN IN TABLE 5

Periods	Population of All Ages	Population 30 Years and Over	Population 40 Years and Over
1890 to 1920.....	71	49	44
1890 to 1900.....	12	9	9
1900 to 1910.....	31	22	15
1910 to 1920.....	17	12	12
1880 to 1890.....	3	..	..

cessful than formerly in removing benign tumors of particular organs, such as the uterus and ovary, that if left alone must have caused deaths.

EFFECT OF IMPROVEMENTS IN DIAGNOSIS AND IN STATISTICAL CLASSIFICATION

There remains yet another test that may be applied to this material, with some hope of getting a clear-cut answer that will cover these objections so far as cancer is concerned. The diagnosis of cancer of the breast and uterus in lethal stages cannot be justly held to have improved significantly since 1880. However, since 1890 and particularly since 1900, operative technic for their cure has certainly, as the result primarily of the work of Halsted and Kelly and their associates, been greatly perfected, and of late years many other capable



surgeons have adopted like methods. If there has been no actual increase in the mortality from cancer of these two organs, then rates specific for sex and age should show no significant increase between 1880 and 1900, and an actual and not insignificant decrease since the latter date. Rates averaged for five year periods from 1876 to 1920, inclusive, for these two categories in respect of the total female population, that is, rates specific for sex alone, are given in Table 7. Since 1880, the percentages of increase in mortality were, for the breast, 43; for the uterus, 50, and for the two together, 47. It is noteworthy that for cancer of the uterus these

TABLE 7.—RATE OF DEATH, PER HUNDRED THOUSAND LIVING FEMALE INHABITANTS BY FIVE-YEAR PERIODS, FROM CANCER OF THE BREAST, UTERUS, OVARIES AND PELVIS, FROM 1876 TO 1920, INCLUSIVE

Period	Total	Breast	Uterus, Ovaries and Pelvis
1876 to 1880.....	34	12	22
1881 to 1885.....	36	14	22
1886 to 1890.....	42	16	26
1891 to 1895.....	43	15	28
1896 to 1900.....	44	14	30
1901 to 1905.....	40	15	25
1906 to 1910.....	45	16	30
1911 to 1915.....	48	18	30
1916 to 1920.....	53	20	33

rates showed little change between 1895 and 1915, and that those for cancer of the breast were practically stationary from 1880 to 1910. For cancer of the breast since 1910, and for cancer of the uterus since 1915, these rates advanced considerably. As, for practical purposes, deaths from cancer of the breast and uterus may be taken as confined to the age period 40 years and over, and, since 1880, the female population of this age group has contributed but slightly more (between 1 and 2 per cent.) than half the total population 40 years of age and over, it is possible to calculate rates reasonably specific for the actual population exposed to the risk of death from cancer of these organs for the census years 1880 to 1920, inclusive. From these data, presented in Table 8, it appears that after 1880 there was no increase in mortality from cancer of the breast, and since 1890 none from cancer of the uterus. On the contrary, since 1910, there has been a notable decrease in mortality from cancer of the breast, and since 1890 from cancer of the uterus and from cancer of these two organs taken together. Thus, when rates that approach specificity are obtained, in respect to cancer of these two organs, in which the disease in fatal stages is readily diagnosable, an apparent increase in mortality is converted into an actual decrease. Therefore, it seems to be established that, during the last forty years, cancer of the breast and uterus (including the other female organs of generation) has shown no real advance in mortality, and that there is a considerable margin of reduction, especially in respect of the latter category, to be placed to the credit of surgical interference.

As the operative mortality for cancer of these two seats is comparatively slight, the question of deaths among nonresidents is here of negligible importance. In the light of this important disclosure, it seems warranted that such proportions of the advances in the crude rates for cancer of all other organs as are not dependent on changes in the age distribution of the population should be attributed to improvements in diagnosis and statistical classification, and to relative increases in the number of deaths of nonresidents with

cancer coming to the city for diagnosis and treatment, and not to an actual increase in mortality.

Since 1890, these specific rates for cancer of the breast and uterus have fallen by 25 and 42 per cent., respectively. As spontaneous recovery of cancer of these organs is unknown, unless the disease has decreased correspondingly in incidence—and for this there is no evidence—these figures may be taken as measuring in a general way the effect on mortality of earlier diagnosis and improved methods of mechanical treatment. If this is the measure of accomplishment amid many difficulties in a period of gradual evolution toward perfection in knowledge of the natural history, diagnosis and treatment of cancerous disease in these two organs in which it is so notoriously malignant, what may not be hoped for from the same or similar methods applied to relatively simpler problems? As, unfortunately, owing to the restrictions of the statistical tabulations, deaths from cancer of such organs as the skin, lips, tongue, bladder, prostate, colon, rectum, stomach and small intestine, for which, under the guidance of advancing knowledge in pathologic anatomy, mechanical measures of the treatment (including irradiation) have in recent years made such strides, cannot be separated out with any exactness into appropriate groups for statistical analysis. For complete studies of the mortality of cancer of these and other important organs, such as the central nervous system, new tabulations made under expert control from the original death certificates are necessary. Until this is done on a large amount of material and the results have been submitted to appropriate critical statistical analysis, no definite knowledge will be had of the true course of the great mass of cancerous disease, and of the real efficacy of treatment. In comparison with the yield in knowledge, the cost would be insignificant.

In the meantime, while it would be unwise to generalize too broadly from the implications of the present analysis of a restricted and isolated material, acknowl-

TABLE 8.—NUMBER\* OF DEATHS AND RATE OF DEATH, PER HUNDRED THOUSAND LIVING FEMALE INHABITANTS 40 YEARS OF AGE AND OVER, FROM CANCER OF THE BREAST AND UTERUS, FOR THE CENSUS YEARS 1880 TO 1920, INCLUSIVE

Year	Total		Breast		Uterus	
	Deaths	Rate	Deaths	Rate	Deaths	Rate
1880.....	94	61	37	24	57	37
1890.....	158	76	50	24	108	52
1900.....	161	64	52	20	109	43
1910.....	199	65	74	24	125	41
1920.....	205	48	80	18	125	30

\* In each instance the figures for number of deaths represent the average for three consecutive years—the census year and the year immediately preceding and succeeding.

edged to be not without defects in both diagnosis and classification, yet the indications are that, if it were practicable to investigate the course of cancer mortality for each particular organ or part, even if no more thoroughly than it has here been possible to do for cancer of the breast and uterus, it would be found that cancer is not increasing either in incidence or in mortality among those actually exposed to risk. So far as Baltimore is concerned, the two questions propounded at the beginning of this discussion have been answered in part. While the evidence at hand is insufficient to prove conclusively that there has been no actual increase in the mortality rates from cancer of all organs taken together, at least it renders this doubtful.



It does show beyond all question of doubt that cancer mortality in Baltimore cannot have increased in anything approaching the degree indicated by the crude rates. For cancer of the only two organs, the breast and the uterus, for which rates approaching specificity could be obtained, it has been shown that in the forty years ending in 1920, mortality has not increased, and that during the latter half of this period there has occurred a gradual but very significant decline in the death rate which, in the absence of other satisfactory explanation, it seems safe to ascribe to medical activities.

625 St. Paul Street.

## PRESERVATION OF THE LIFE OF COMPLETELY PARATHYROID- ECTOMIZED DOGS

BY MEANS OF THE ORAL ADMINISTRATION OF  
CALCIUM LACTATE \*

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AND

BENJAMIN GOLDBERG, B.S.

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In several earlier communications <sup>1</sup> it was stated that completely parathyroidectomized animals could be cured of all symptoms of parathyroid tetany by the intravenous injection of Ringer's solution. It was furthermore shown that this treatment could be stopped after from forty to sixty days without the appearance of tetany except under special conditions described in the papers referred to. In the course of this work it was found that calcium-free Ringer's solution or Locke's solution from which the calcium was partly precipitated possessed some efficacy in conserving the life of parathyroidectomized animals, but that ordinary Ringer's solution was incomparably better, especially early after operation.

These results strongly suggested that the calcium contained in the Ringer's solution was in some way responsible for the beneficial results seen following its intravenous administration in parathyroidectomized animals. When, however, calcium chlorid was administered orally in quantities from 2.6 to 3.6 times as great each day as was present in a day's treatment of Ringer's solution intravenously injected, the animal invariably went into severe tetany. These results seemed to indicate that it was not the calcium itself in the Ringer's solution which made it a more efficacious agent, but that ordinary Ringer's solution was a balanced solution. As a balanced solution it might presumably act not only by increasing the rate of urinary excretion but also by effecting a more rapid elimination of the nitrogenous toxin or toxins responsible for the tetany. Aside from these possibilities, we have not overlooked the possibility that the calcium may act by decreasing the permeability of the cells and thus preventing the poisonous material from acting injuriously on the latter.

About this time our attention was directed to an article by Frouin <sup>2</sup> on the efficacy of calcium and magnesium salts in conserving the life of parathyroidectomized dogs when such salts were administered orally.

The statements of Frouin were in direct conflict with the experience of a host of physiologists and pharmacologists who had attempted to preserve the life of parathyroidectomized animals by the administration of calcium salts. Whereas the immediate effects of the intravenous administration of calcium salts are astounding, all investigators reported that the animals eventually died in spite of heroic medication with such salts. As late as 1917, Voegtlin <sup>3</sup> himself writes that "the life of such animals cannot be saved by the continued administration of calcium," and that the "oral administration of calcium salts is of doubtful value," i. e., in parathyroidectomized animals.

The administration of large quantities of calcium lactate or calcium chlorid solutions intravenously and in a concentrated form has always seemed to us a highly unphysiologic procedure. On a theoretical basis, it appeared to us absurd that grams of calcium lactate should be introduced daily and directly into the circulation over a period of many days. Whether this position proves to be correct or not, it seemed more reasonable to test out the efficacy of calcium compounds by administering them orally. On the basis of these considerations and the facts reported by Frouin, we decided to reinvestigate the therapeutic properties of calcium lactate in parathyroid tetany by administering this salt orally, in spite of the numerous reports in the literature on the impracticability of the procedure.

### METHODS

The dogs used were put on a ration generally admitted to bring on rapidly and severely the fatal symptoms of tetany following the removal of the parathyroids. Each parathyroidectomized dog (the average weight of the dogs being 12 kg.) received daily one-half pound of meat and one-half pound of bread.

The general routine in the administration of the calcium lactate was roughly as follows: We usually gave each dog 10 gm. of calcium lactate dissolved or partly suspended in from 200 to 300 c.c. of cold tap water by stomach tube early in the morning. Several hours later we stirred up in the ground meat and bread 20 gm. of calcium lactate and offered this to the animal. This food was devoured eagerly. Late in the afternoon the animal again received 10 gm. of calcium lactate by stomach tube as in the morning.

In our experimentation we varied the amount of calcium lactate given daily, giving as much as 2.7 gm. per kilogram and as little as 0.43 gm. per kilogram of body weight.

We hope that this short description will suffice to acquaint the reader in a general way with our technic. The precise details will be published later.

### RESULTS

In this preliminary publication we are prepared to record the following results:

1. Completely parathyroidectomized dogs can be kept alive without showing tetany on a diet very rich in meat by means of the oral administration of calcium lactate.

2. The daily intake of calcium lactate early after parathyroidectomy must amount to approximately 1.5 gm. per kilogram of body weight. As time goes on, the daily amount of calcium lactate necessary to prevent the appearance of tetany can be reduced.

3. After several months, the administration of calcium lactate can be stopped entirely without the appear-

\* From the Hull Physiological Laboratory, University of Chicago.

1. Luckhardt and Rosenbloom: *Proc. Soc. Exper. Biol. & Med.* **19**: 129, 130, 1921. Luckhardt and Rosenbloom: *Science* **56**: 48 (July) 1922. Luckhardt and Blumenstock: *Science* **56**: 257 (Sept.) 1922.

2. Frouin: *Compt. rend. Acad. d. sc.* **148**: 1622, 1909.

3. Voegtlin: *Official Reports of Referate of American Gynecological Society*, Pittsburgh, May-June, 1917, pp. 64-78.



ance of tetany. The spontaneous tetany occurring thereafter at irregular intervals, presumably because of constipation or the ingestion of large quantities of unspoiled or small quantities of putrid meat or other spoiled food, can be rapidly controlled by the oral administration of calcium lactate and the giving of enemas.

4. As in previously reported work, all tetany symptoms recur during the estral cycle. This tetany can be controlled perfectly by means of the oral administration of calcium lactate.

5. It is clear that water when given daily by stomach tube in large quantities (1,050 c.c. to a 12 kg. dog) does not prevent the appearance of violent tetany.

6. If, early after parathyroidectomy, the calcium lactate is withdrawn from the diet a single day, the animals will be found in most violent tetany within twenty-four hours or even earlier.

7. Whereas calcium lactate given daily in doses of 1.5 gm. per kilogram prevents absolutely the occurrence of tetany, bone ash given daily in doses as high as 5 gm. per kilogram has no appreciable effect in preventing the onset of very severe tetany. The total amount of calcium in a given amount of bone ash is very much greater than in an equivalent amount by weight of calcium lactate. The latter may be more readily absorbed, however, because of its greater solubility. There are some indications that bone ash given in large quantities possesses some undesirable properties.

8. As a result of muscular exercise and excitement, recently parathyroidectomized dogs on a low calcium intake may show suddenly seizures identical with the convulsive seizures seen in grand mal attacks of idiopathic epilepsy. On the basis of these findings and other data, we have suggested the use of calcium lactate in idiopathic epilepsy in doses approaching those found necessary to prevent tetany in parathyroidectomized animals. This dosage is much higher than that found in the United States Pharmacopeia. If calcium lactate is to be used at all in such conditions, it should be used in what appears at first sight to be massive doses. The large doses used in dogs have never been followed by any untoward symptoms even when given daily over a period of from sixty-four to eighty-one days. Amounts of calcium lactate similar to those given to dogs are not only well borne by epileptics but have been found to ameliorate the epilepsy, though it is too early to make definite statements on the subject.

9. On the basis of this work, we believe that the rôle of calcium lactate in preserving the life of completely parathyroidectomized animals is quite complex. It does not seem probable, at the present writing, that calcium salts act by meeting a deficiency of tissue or blood or lymph calcium on the view held years ago that the tetany after removal of the parathyroids was due to a loss of body calcium (calcium diabetes). We intend to determine at an early date whether the calcium asserts its beneficial action by acting locally on the bowel or its flora, or by or by acting constitutionally after absorption from the intestine. Chemical analyses of the blood and other body fluids will soon be undertaken, in the hope that such studies will help materially in elucidating the rôle of calcium, especially since we now possess several satisfactory methods in rapidly controlling the tetany and keeping the animals alive indefinitely. In earlier studies we were concerned primarily in conserving the life of parathyroidectomized

dogs and in determining as far as possible the immediate cause of the distressing symptoms and the heretofore certain death. In addition to our own method, Dragstedt<sup>4</sup> has developed another method, on the basis of even more fundamental considerations, of preventing the death of completely parathyroidectomized animals. With this method and our own methods, it is now possible to study by diverse means the physiologic function of the parathyroid glands by determining the metabolic changes and compensatory readjustments that occur in the body following their removal.

## SOME OCULAR PHASES OF LITTLE'S DISEASE (CONGENITAL SPASTIC RIGIDITY OF THE LIMBS)

### REPORT OF CASES

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In 1861, Little, a British orthopedist, called attention to a condition not infrequently observed in consequence of premature births, mechanical injuries during parturition to the fetal head, etc., in consequence of which convulsions are excited after birth, and are succeeded by a determinate affection of the limbs of the child, which he designated "spastic rigidity of the limbs of new-born children, spastic rigidity from asphyxia neonatorum," and assimilated it to the trismus nascentium and the universal spastic rigidity sometimes produced at later periods of existence. It is manifestly outside the scope of this paper to discuss the general neurologic aspects of this condition, now usually designated as "Little's disease," though it may not be amiss to give a short clinical description of it, to refresh our memory, burdened with so many things ophthalmologic that the symptomatology of some of the rarer neurologic conditions at times escapes us.

According to Oppenheim, whose textbook contains perhaps the best description of the disease,

Even in cases where the morbid condition must be regarded as congenital, symptoms pointing to involvement of the muscular system are not always recognized directly after birth. If the lesion is a very marked one, it will certainly be early manifested by the difficulty of separating the thighs, which are closely pressed together, and which at once resume the position of adduction. The condition is frequently first recognized when the child begins to attempt to walk, or shortly thereafter. . . . The lower limbs are held stiffly, the thighs rotated inwards, and so strongly adducted that the knees touch each other and in walking rub against each other. This, indeed, may be so very marked that in walking the thighs may cross each other. Whilst the hip and knee-joints are generally but slightly flexed, the pes equinus position is usually very pronounced, so that in walking the heels are raised in the air, and the little patient can only push himself along on the toes or the balls of the toes. . . .

If the patient is examined in the dorsal position, the well-known phenomena of rigidity and motor weakness are observed, but it should be noted that these are not necessarily equally marked; the former may be very severe, whilst the motor power is little affected or even quite normal. Many writers go so far as to include under Little's disease only those cases in which the motor disturbances are due to muscular rigidity and not to weakness. This distinction cannot, however, be sharply adhered to.

The knee jerk is always exaggerated; ankle-clonus is often absent. The patella is usually drawn somewhat upwards,

4. Dragstedt, L. R.: The Pathogenesis of Parathyroid Tetany, J. A. M. A. 79: 1593 (Nov. 4) 1922.



and the patellar ligament appears to be lengthened. This is especially evident when the knee is flexed to an acute angle. Babinski's sign is usually present, but it should be remembered that in very young children dorsal flexion of the toes represents the physiological reflex movement. Oppenheim's sign, as well as the Bechterew-Mendel sign, is not constantly present. In the sitting position the rigidity and the spasm of the extensors are sometimes shown by the fact that the knees can not be fully flexed, the legs remaining poised in the air; sitting may in consequence become quite impossible.

Sensory changes, bladder disturbances, etc., are not present, or appear only in rare atypical cases. The symptoms affect the motor sphere exclusively.

The arms are involved in many cases, but in others are completely spared. If they are affected their attitude is usually a peculiar one. The upper arm is strongly abducted, the forearm flexed, sometimes also pronated, the wrist flexed or extended, the fingers flexed in every joint or in the interphalangeal joints only. This may vary in a few cases, but the attitude is always a forced one, at once revealing to the expert the condition of contracture. Passive movements are difficult, the tendon reflexes are exaggerated, the movements slow, awkward and feeble. The weakness of the arms, however, is not so great as that of the lower extremities.

Deformities of the spinal column sometimes occur, and other anomalies of development may be found.

In pure cases of spastic paresis of the lower, or of all four extremities, Oppenheim points out that the symptoms must correspond completely with those of spastic spinal paralysis, and that there must be no indication of nondevelopment or incomplete development or degeneration of the spinal pyramidal tracts.

In such cases other symptoms, however, are generally present, which at once reveal the cerebral origin of the disease. Among these are ocular symptoms, presently to be mentioned in extenso; also disturbances of speech, the rigidity sometimes involving the muscles of articulation and causing difficulty and indistinctness in speech. The rigidity may be completely of the bulbar type, and in exceptional cases may be combined with difficulty in swallowing. There is one class in which, besides the spastic symptoms, there is only strabismus, or a combination of strabismus and speech affection. In others, several additional symptoms are present. While in many cases the intelligence is unaffected, there is in others weakness of the intellect which may amount to idiocy. Epilepsy may appear shortly after birth or during later life. Choreo-athetotic symptoms may affect all four extremities, but predominate, as a rule, in the upper extremities, and not infrequently appear in the muscles of the face and tongue, forming the symptoms which are earliest recognized. They are frequently confused with chorea.

The ocular symptoms include strabismus, nystagmus, rarely paralysis of the extra-ocular muscles and optic atrophy. Strabismus is the most constant. From his personal observations and a study of the literature, Feer found strabismus in 30 per cent. of cases of Little's disease which were without cerebral complications, and in 40 per cent. in which such was the case.

Although Uhthoff states that these figures are probably somewhat in excess of the actual occurrence of this symptom, in his experience strabismus does occur quite frequently. There is much difference of opinion in regard to the origin of the strabismus. It has been thought in most instances to be merely a concomitant squint due to errors of refraction. A study of the literature, however, will show very marked degrees of ametropia present in so few cases that we can safely assume that in most cases the deviations are dependent

on innervational disturbances produced by the disease, and that they vary in degree and kind according to the location and extent of the cerebral lesion. Only rarely is spasticity such as occurs in the extremities present. Uhthoff has noted a periodically striking change in the intensity and even in the degree of the strabismus, and Feer thinks it somewhat oftener alternating than in the ordinary concomitant varieties. Only rarely is the strabismus divergent.

Nystagmus occurs next to strabismus in relative frequency, and varies greatly in degree and in kind. Paralysis of the eye muscles is very rare; so also is optic atrophy. De Bruin saw a case of the latter with normal macula, nystagmus, difficulty in swallowing, marasmus and death. Necropsy revealed a large cyst in the parietal lobe on both sides of the brain. The cunei were trophic, also the thalamus and peripheral optic system. In another, observed by Bruns, cerebral complications were found at the necropsy; i. e., thrombosis of the longitudinal sinus, and old and recent areas of softening in both hemispheres. Feer is inclined, especially when idiocy is also a complication, to regard the internal hydrocephalus present in some cases to be the bond of association between cerebral and optic nerve changes.

Anton and Liebe have also observed cases of optic nerve atrophy. In the light of our present knowledge, Uhthoff thinks that we are not justified in considering lesions of the optic nerve occurring in Little's disease to be analogous to the simple progressive atrophy of tabes, and suggests that the eye symptoms present may be a means of differentiating Little's disease from multiple sclerosis. He also points out that certain cases of amaurotic family idiocy present symptoms not unlike those found in Little's disease.

While it is probable that, in common with my colleagues, I have observed not a few cases presenting ocular symptoms dependent on Little's disease whose origin I failed to recognize, I shall present the notes of three which were diagnosed, and which will illustrate several types of this rather rare affection.

#### REPORT OF CASES

CASE 1.—Two years ago, by reason of my association with the Home for Incurables in Philadelphia as its consulting ophthalmologist, there was referred to me by Dr. W. W. Watson, the ophthalmologist to the institution, a man, E. D. W., aged 27, who had been an inmate of the home since 15 years of age. According to the statement of Dr. James H. McKee, who attended the mother at his birth, labor was very prolonged, and when toward the end of the second day the fetal heart sounds became weak, forceps were applied and the baby delivered in a pronounced condition of asphyxia pallida, but without a mark. Life was induced only after prolonged artificial respiration. Dr. McKee reports convulsions in the early days and repeated attacks of cyanosis. The child had difficulty in taking the breast, and spasticity developed very early. The left eye began to converge markedly at about 3 years of age. The child talked at 5 years but never entirely clearly, and did not begin to walk until he was 8 years old.

Dr. J. H. W. Rhein, one of the physicians of the home, noted that since the patient could remember, there had been little or no change in his condition outside of that stated in the history. At present there were no facial palsies or cranial nerve palsies; the tongue protruded straight in the median line. There were no atrophies of any of the muscles; the reflexes were generally increased; the chin jerk, the biceps jerk in the arms and the knee jerks were all increased and equal on the two sides. The cremasteric reflex was present, the abdominal reflex absent. Bilateral Babinski, Chaddock and Oppenheim signs were present. The gait was spastic. The patient walked on his toes, the knees interfering. The gait



was associated with a general athetoid condition of the muscles of the face, arms, trunk and legs. When lying recumbent, all the muscles were practically quiet except for an irregular contraction of the toes of both feet. Effort of any sort, speaking or moving any part of the body, gave rise to general athetoid movements of the face, arms, trunk and legs. All the movements were more pronounced on the right side. He practically used the left hand exclusively for voluntary acts. There was some hypertonicity of the muscles of the legs, brought out when the legs were bent at the knees by the examiner. The muscles were generally tense; except for some shortening of the Achilles tendons on both sides, there were no contractures. The sensation was normal everywhere. The finger to nose test brought forth some apparent hypermetry, but this was to be interpreted as an expression of athetosis. There was no adiadokokinesis. Station was normal. There were no subjective pains, no disturbance of the sphincters and no mental defect.

Dr. Watson reported convergent strabismus of the left eye of 40 degrees. The patient fixed well with each eye, but binocular vision was always resumed with the right eye fixing. There was no limitation of movements of either eye, and no nystagmus. There was no apparent spasticity in the movements of the ocular muscles. The eye grounds were negative. Corrected vision was normal in each eye.

The glasses which the patient had worn for several years to correct a moderate amount of hypermetropic astigmatism in each eye having failed to correct some symptoms of eye strain, and the patient being desirous of having his eyes straightened, Dr. Watson brought him to my service at the Howard Hospital, where a double advancement operation was done, under ether, on the external rectus muscles. Although more detailed information will be made of the anomaly at another time, it may be noted that an additional muscle was found in association with the tendon of the left externus. This adventitious tendon was advanced in common with that of the externus. The subsequent progress was uneventful, practical parallelism of the visual axes being obtained without further procedure.

CASE 2.—In 1905, there were brought to me girl twins, aged 6 years, in one of whom, M., the mother had noticed soon after birth a tendency of the right eye to diverge, and in the other, A., rather purposeless movements of the eyes. Both were born at the period of seven and a half months in a difficult labor. Both children were noted as being delicate. M. had a skull too long in the anteroposterior diameter and orbits narrower than normal. A., examined at the same time, presented much the same shaped skull and orbits, but no ocular symptoms. When M. was made to fix in the median line, and a screen was placed over the right eye, the right eye deviated directly up under cover, slowly but steadily swinging down again to fix. When the left eye was screened off, the deviation was up, but also in, in the same slow rhythmical fashion as in the right eye. There seemed to be a lagging in the left eye when the object was carried down to the right, and this eye showed a tendency at times to slight convergent strabismus. H. equaled 1.5 D. in each eye. Vision was normal.

My examination having brought on a convulsion, and the child presenting other nervous phenomena, she and her sister were referred to Dr. W. G. Spiller for examination, who reported that both children were delicate, especially A. Both had a somewhat spastic condition of the muscles of the lower part of the face, and a peculiar manner of speaking, as though there might be some spasticity of the muscles of speech. The peculiar turning of the eyeballs upward and inward was very striking in M. She also had exaggeration of the patellar reflexes, and possibly might move the left lower limb a little awkwardly. There was no distinct weakness of the muscles. He believed that both children showed the effects of premature birth, and that the convulsions in M. were such as occur in children occasionally who are born too soon, and that they were brought on by the excitement of undergoing an examination. Both children were nervous, and A. might have convulsions at any time after excitement. He did not believe that any new lesions were developing in M.'s brain. Ocular disturbances are not uncommon in pre-

maturely born children. M. might never have another convulsion, but she might have one at any time. Dr. Spiller advised the parents to keep them much outdoors, to prevent them from studying very hard, to hold back their mental development, and to pay much attention to their general health. These children belonged to the class he wrote about under the heading "Little's Disease."<sup>1</sup>

Other convulsions occurred in M. for a number of years, several of which followed ocular examinations, others being attributed to fatigue or overeating. In one of unusual severity the child was unconscious; the head was turned to the right, and the extremities on one side jerked.

These children reported for examination every two years, and their development has been followed with great interest. At no time have there been any intra-ocular changes, the optic nerves being normal. Although somewhat neurotic, both have developed almost normally, being mentally bright, and physically fairly strong. M.'s ocular condition, which has been regarded as an instance of that rare anomaly of the ocular muscles described by Stevens under the name of anotropia, has remained unchanged. The muscle test is unusual. At 5 meters in the primary position, there is an exophoria of 14 degrees. When the rod is placed before the right eye, the streak of light is below 6 degrees, and when it is transferred to the left eye, the streak is still below, and it requires an 8 degree prism, base down, to bring it up even with the light. Stevens was of the opinion that in these cases there is excess of the upward rotation in each eye, associated with a declination of the meridians, as a consequence of which the simultaneous and synergic action of the superior obliques is suppressed and the superior recti act alone. The occurrence of the anomaly in a subject of Little's disease is not without interest as bearing upon the etiology of this bizarre behavior of the ocular muscles.

CASE 3.—In 1908, J. C. T., aged 4 years, was brought to me on account of rolling of the eyes. It was ascertained that he was delivered with instruments at the end of a labor that had lasted forty-eight hours, and that he was asphyxiated in consequence and revived with difficulty. He walked at about 16 months of age; though he never had convulsions, he was a nervous, irritable child. Rolling of the eyeballs was first noticed when the boy was 2½ years old.

The forehead was somewhat protruding and narrow, but the head not badly shaped. In ordinary fixation, the eyes were quiet, but marked lateral nystagmic movements manifested themselves in lateral excursions of the eyeballs, especially toward the left. The aberrant movements were also more marked at the extremities of the up and down movements of the eyes. No other gross deviations in the ocular movements were present, though both eyes were markedly out under cover. The eyegrounds were normal. This case was also referred to Dr. Spiller, who considered it to be an instance of Little's disease. He found no signs of paralysis or other organic disorder outside the nystagmus, which he thought had resulted from the disturbance at birth. He also was of the opinion that it was not improbable that during the asphyxia the cerebellum was especially affected, and that had the disturbance been a little greater, the child would probably have had cerebral diplegia.

This case has been followed up to the present time, the boy reporting once or twice a year for refraction or some slight ocular ailment. At 9 years of age, a tremor of the head appeared, during convalescence from an attack of scarlet fever. This gradually lessened, however, and when he was 14 years old, had entirely disappeared. Owing, perhaps, to his infantile disability but also to the spoiling influences of a petulant mother, the lad has been much hampered in his development, having difficulty in keeping up with his classes, and easily excited and hysterical. The nystagmus still persists. Both eyes are but slightly hypermetropic and astigmatic, but refraction is difficult, and full visual acuity was obtained with lenses only after patient insistence on the part of the oculist. At 5 meters, esophoria equals 8 degrees, and there is a right hyperphoria of 1 degree. There have never been any changes in the eyegrounds.

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1. Spiller, W. G.: Univ. Pennsylvania Bull., January, 1905.



## ACIDOSIS IN HYPERTHYROIDISM \*

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Although the presence of acidosis as a complication of hyperthyroidism, particularly after operation, is mentioned in the literature of thyroid disease, such references have as a rule been very brief and cursory. This complication is referred to by Crile,<sup>1</sup> by Crotti<sup>2</sup> and by Chesky,<sup>3</sup> both of the latter observers describing the acetone breath which is noted at times in patients after operation. However, many of the most recent articles and textbooks fail to mention the occurrence or the treatment of this complication.

A recent experience with cases of acidosis in thyroid disease suggests the desirability of studying more fully such an important complication. A summary of two of these cases is given:

## REPORT OF CASES

CASE 1.—A married woman, aged 37, white, entered the Bell Memorial Hospital, University of Kansas, May 11, 1922, complaining of weakness, nervousness and fluttering of the heart. The duration of the symptoms was two months.

Physical examination disclosed evident loss of weight, exophthalmos with a positive von Graefe sign, a diffusely enlarged thyroid, a fine tremor of the fingers, and a moderate tachycardia, the pulse rate varying from 96 to 119. The blood pressure was: systolic, 140; diastolic, 40.

The blood count revealed: red blood cells, 5,900,000; leukocytes, 9,600; hemoglobin (Sahli), 80 per cent. The differential count revealed no abnormalities. The urine was normal. The basal metabolism was 23 per cent. plus.

The patient's thyroid was first treated by roentgen irradiation, and two exposures were given at intervals of four days. The day following the second treatment the patient was nauseated, and the next day began to vomit, complained of great thirst, and was unable to retain anything on her stomach. Her temperature rose from 99 to 100.2 F., and the pulse rate from 100 to 160. She began to hiccup, was very weak, and looked extremely ill. The breath at this time had a distinct acetone odor, and examination of the urine revealed the presence of large quantities of acetone and diacetic acid. The carbon dioxide combining power of the blood plasma was 48 per cent. by volume (Van Slyke method).

Proctoclysis was begun that afternoon, and she received every six hours 500 c.c. of a solution containing 5 per cent. each of sodium bicarbonate and glucose, part of which was expelled. Eighteen hours later, after the patient had received three such injections, she was comfortable, vomiting had ceased, her temperature was 98.6, and the pulse rate was 108. The carbon dioxide combining power of the blood plasma was 60 per cent. by volume, and the urine showed only traces of acetone and diacetic acid. The administration of sodium bicarbonate and glucose was continued for two days.

Two weeks later a lobectomy was performed on this patient under ether anesthesia, by Dr. M. T. Sudler. The pulse rate rose to 136 and the temperature to 101 following the operation, but the next day both were down to normal. The pathologic diagnosis of the tissue removed, by Dr. H. R. Wahl, was: chronic interstitial thyroiditis; focal epithelial hyperplasia of thyroid gland (toxic goiter).

For two days preceding the operation, the patient received 15 grains of sodium bicarbonate daily by mouth; and for three days after operation, she was given glucose and sodium bicarbonate by proctoclysis. No signs or symptoms of acidosis appeared.

The patient was discharged from the hospital, June 26, ten days after operation, markedly improved. She was seen

again, September 22, when she had gained 14 pounds (6.4 kg.) and had a normal metabolic rate.

CASE 2.—A married woman, aged 37, white, entered the Bell Memorial Hospital, University of Kansas, Oct. 17, 1922, complaining of nervousness, palpitation of the heart and loss of weight. The duration of symptoms was one year, during which she had lost 40 pounds (18 kg.).

Physical examination revealed a marked exophthalmos, with a positive von Graefe sign, heteronymous diplopia, a diffusely enlarged thyroid with a very loud bruit, and a fine tremor of the fingers. The pulse rate varied from 80 to 100. The blood pressure was: systolic, 145; diastolic, 95.

The blood count revealed: red blood cells, 5,100,000; leukocytes, 6,200; hemoglobin, 89 per cent. (Sahli). The differential count was normal. The urine was normal; the basal metabolic rate was 20 per cent. plus.

The patient improved markedly under rest in bed. Three days after the first estimation of the metabolic rate, a second determination revealed the rate to be only 10 per cent. above normal.

An operation was performed, October 30, and a partial removal of the gland was carried out by Dr. M. T. Sudler under nitrous oxid and oxygen anesthesia. The day following the operation the patient's pulse was 160, the temperature 102.4 and respiration 24. The patient complained of intense thirst, and insisted on drinking a large quantity of water, which was promptly vomited. The breath had an acetone odor, and the urine contained considerable quantities of acetone and diacetic acid. The carbon dioxide combining power of the blood plasma was 21 per cent. by volume.

This patient was placed on the same glucose and sodium bicarbonate treatment by proctoclysis. Twenty-four hours later the patient was comfortable, vomiting had ceased, the pulse rate was 110 and the temperature 99.2, and the carbon dioxide combining power of the blood plasma was 46 per cent. by volume. Six days later the carbon dioxide combining power was 51 per cent. by volume.

The patient was discharged from the hospital, November 21, markedly improved, the basal metabolic rate at this time being normal. The pathologic report of the tissue removed, made by Dr. H. R. Wahl, was: "marked epithelial hyperplasia of the thyroid gland, lymphoid infiltration (thyrotoxic goiter)."

## COMMENT

Here, then, are two cases of marked acidosis associated with hyperthyroidism of moderate severity, the condition appearing in one instance after roentgen-ray treatment of the gland and, in the other, following a lobectomy performed under nitrous oxid and oxygen anesthesia. Both patients responded promptly to the administration of alkali.

Crile,<sup>1</sup> Austin and Jonas,<sup>4</sup> Morriss,<sup>5</sup> Caldwell and Cleveland,<sup>6</sup> Reimann and Bloom,<sup>7</sup> Cannon,<sup>8</sup> Carter<sup>9</sup> and Rose<sup>10</sup> have called attention to the acidosis that may follow ether anesthesia. Reimann and Bloom noted a fall of the plasma carbon dioxide from 86.2 to 62.7 c.c. in a patient following nitrous oxid and oxygen anesthesia, while Caldwell and Campbell, in a study of this condition, found in fourteen cases an average fall of 2.8 (measured in millimeters of mercury of the alveolar air). Caldwell and Campbell found also that the differences between the changes produced by gas

4. Austin, J. H., and Jonas, Leon: Clinical Studies of Acidosis, *Am. J. M. Sc.* **153**: 220, 1917.

5. Morriss, W. H.: The Prophylaxis of Anesthesia Acidosis, *J. A. M. A.* **68**: 1391 (May 12) 1917.

6. Caldwell, G. A., and Cleveland, Mather: Observations on the Relation of Acidosis to Anesthesia, *Surg., Gynec. & Obst.* **25**: 22 (July) 1917.

7. Reimann, S. P., and Bloom, G. H.: The Decreased Plasma Bicarbonate During Anesthesia and Its Cause, *J. Biol. Chem.* **36**: 211 (Oct.) 1918.

8. Cannon, W. B.: Acidosis in Cases of Shock, Hemorrhage and Gas Infection, *J. A. M. A.* **70**: 531 (Feb. 23) 1918.

9. Carter, W. S.: The Effect of Ether Anesthesia on the Alkali Reserve, *Arch. Int. Med.* **26**: 319 (Sept.) 1920.

10. Rose, M. E.: Acidosis in Surgical Anesthesia, *Illinois M. J.* **41**: 6 (Jan.) 1922.

\* From the Department of Internal Medicine, University of Kansas School of Medicine.

1. Crile, G. W.: The Phenomenon of Acidosis and Its Dominating Influence in Surgery, *Ann. Surg.* **62**: 257, 1915.

2. Crotti, A.: Thyroid and Thymus, 1918, p. 521.

3. Chesky, in Hertzler: Diseases of the Thyroid Gland, 1922, p. 169.



and ether, ether, gas and oxygen, local anesthetics and chloroform were slight.

In the two patients described, acidosis may have developed in the second instance as a result of anesthesia. In the first, however, it was directly traceable to the thyroid toxicosis. The presence of intense thirst and vomiting in these patients was noteworthy. Crile<sup>1</sup> has called attention to this in his discussion of the relationship of thyroid disease and acidosis, and in another place<sup>11</sup> has pointed out the necessity of maintaining a proper fluid balance. In these patients, intense thirst ceased with the disappearance of the acidosis.

## THE HISTORY OF EXPERIMENTAL SCARLET FEVER IN MAN\*

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Most of the attempts to inoculate human beings with scarlet fever have been made, not for the purposes of studying the nature and mode of infection in this disease, but in the hope that a mild attack might result that would protect against further attacks. It was the success of inoculation of smallpox as a protective measure that led to the hope of like success from the inoculation of scarlet fever. Thus, Erasmus Darwin,<sup>1</sup> the grandfather of Charles Darwin, wrote:

No one could do an act more beneficial to society, or glorious to himself, than by teaching humanity how to inoculate this fatal disease [scarlet fever]; and thus to deprive it of its malignity. Matter might be taken from the ulcers in the throat, which would probably convey the contagion. Or warm water might be put on the eruption, and scraped off again by the edge of a lancet. These experiments could be attended with no danger, and should be tried for the public benefit, and the honor of medical science.

He cites a case, communicated to him by Sir Busick Harwood, professor of anatomy at Cambridge, that would seem

to shew, as far as a single case can be relied on, that the scarlet fever may be communicated, like the smallpox, by inoculation, and probably with similar success, if the matter be diluted with warm water, used in small quantity, and by superficial incisions only, through the cuticle.

A man with a violent attack of scarlet fever had delirium, and the skin was cracked in many places, exuding an ichorous matter; the attendant was a poor man who recently had cut his hand with a glass bottle, and in the struggle with the patient one evening, this hand frequently came in contact with the patient's body. On the following day the hand was infected and the arm swelled, and on the day after that, scarlet fever set in from which he died in three days.

In another place Darwin says that "the scarlet fever exists with all degrees of virulence, from a flea bite to the plague."

An argument in favor of inoculation of scarlet fever was made by Struve,<sup>2</sup> which is repeated and elaborated by Most,<sup>3</sup> who died of cholera in 1832. Struve held that the surest means of prevention is to destroy the receptivity by an attack of the disease itself, and emphasized the success said to have been obtained by

inoculation of measles and pest. He goes on to say that in all probability inoculation of scarlet fever would accomplish just as much as the inoculation of smallpox did before vaccination was introduced; but, as inoculation with scarlet fever probably would be accompanied with dangers of the same kind as those of inoculation of smallpox, vaccination clearly is desirable with blood, saliva, scales or material from ulcers in the throat of scarlet fever patients. Care must be taken to prevent the natural transmission of the disease. Most did not believe that vaccination against scarlet fever would be found in materia medica, although belladonna lessens susceptibility. If there exists in nature any agent that can prevent scarlet fever, it must be looked for in the animal economy. As two contagious principles cannot exist in the body at the same time, because when already infected with one virus it loses its receptivity to all other viruses of similar nature, a permanent preservative against scarlet fever might be obtained from swine suffering from a disease marked by swelling of the neck, by angina, and by erysipelatous inflammation of the surface of the body. Jenner's vaccination led others also to suggest animal diseases as possible sources of vaccines against scarlet fever.

If case inoculation was practiced, Most thought that it should be made during the season when scarlet fever is mild, preferably in January and February; only children between 2 and 7 years of age should be inoculated, not younger ones, because they are insusceptible, and not the older, because they are highly susceptible; the matter inoculated should be taken from a patient free from other disease and suffering with a mild attack of scarlet fever; the best material probably would be blood; and it would be best to inoculate it into the arms by means of punctures or scarifications; material from ulcers in the throat, as recommended by Darwin, should not be used, as likely to be mixed with decomposing matter. After inoculation, children should be placed on light diet and kept in rooms with an even temperature.

Neither Struve nor Most cites any actual cases of inoculation of scarlet fever. Before long, however, attempts were made to produce scarlet fever by inoculation with material from erythematous areas, with serum of miliary vesicles, and with scales of the skin. Experiments of this kind were made by Stoll, Miquel and others, but it is doubtful whether scarlet fever was produced in a single case, although contemporary and later writers appear to have regarded some of the results obtained as positive. Stoll is quoted repeatedly as having produced scarlet fever by inoculation of scales, but I have been unable to find his original article.

Rostan<sup>4</sup> writes: "The eruption appears at a certain time after the application of the cause, seven days, when inoculation has taken place," but he gives no facts to support this statement. He says, further, that scarlatina is an acute exanthem, contagious, which develops under the influence of a specific cause, susceptible of inoculation.

The experiments of Miquel,<sup>5</sup> Bretonneau's pupil and follower, "an humble pioneer," as he calls himself, are mentioned frequently. Belladonna having failed to protect against scarlet fever, Miquel in 1833 included

11. Crile, G. W.: The Protection of the Patient in Surgery of the Thyroid, Surg., Gynec. & Obst. 32: 213 (March) 1921.

\* From the John McCormick Institute for Infectious Diseases.

1. Darwin, Erasmus: Zoonomia 2: 246, 1796.

2. Struve, Christian August: Untersuchungen und Erfahrungen über die Scharlachkrankheit, 1802, p. 267.

3. Most, George Friedrich: Versuch einer kritischen Bearbeitung der Geschichte des Scharlachfiebers und seiner Epidemien von den Aeltesten bis auf unsere Zeiten 2: 57, 1826.

4. Rostan, Léon: Cours de médecine clinique 2: 186, 1830.

5. Miquel, J.-F., à Tours, et autrefois d'Amboise: Lettres médicales d'un vétéran de l'école de Bretonneau à M. le professeur Troussseau et autres pour mettre un terme à des erreurs professées sur les maladies éruptives et la spécificité, 1867, p. 138; Schmidt's Jahrb. 3: 373, 1835.



this disease in experiments to localize by inoculation contagious diseases which he believed were propagated by inhalation. These appear to be the first definite attempt to inoculate scarlet fever. Material was obtained by scratching papules on the skin of a patient with scarlet fever on the third day, which material appeared like yellowish fluid; it was dried on lancets; he then inoculated this material into the arm of a girl, aged 28 months, by means of nine punctures; thirty hours later, zones of redness had appeared around the punctures, which remained for two or three days and disappeared on the fifth day; fifteen days later the same girl was inoculated again with other material of the same nature, but from a different source, and at this time no redness developed. He then inoculated in the same way two other children, one aged 1½ years and one aged 9. Local redness developed as before; the children were now made to sleep with their sister, who had scarlet fever, but they did not become sick. Other experiments were made by Miquel and by Bridel.<sup>6</sup> The results have been variously interpreted, some holding that the inoculated children were protected, others, notably Leroy,<sup>7</sup> who repeated the experiments on himself with tears, blood and scales, declaring that no protection resulted.

Petit Radel<sup>8</sup> is said to have obtained negative results from inserting scales of skin, and Albers<sup>9</sup> says that inoculations with the blood of patients with scarlet fever were without any results in two cases.

About this time, Robert Williams,<sup>10</sup> who held that after an attack of scarlet fever "the susceptibility of the constitution is exhausted to all future attacks of the poison," wrote:

The contagious nature of scarlet fever has been strictly demonstrated by inoculation. The eruption of scarlet fever is sometimes intermingled with vesicles containing serum. This serum has been used by Sir Busick Harwood and other physicians to inoculate healthy children, in the hope that by this method a milder disease, as in the case of smallpox, might be produced. Scarlet fever has in many instances resulted from this experiment, but the disease has been as formidable as that which occurs spontaneously, and consequently this practice has of late years not been repeated.

Williams fails, however, to refer to any exact reports by Harwood or others and, like Murchison,<sup>11</sup> the only account of Harwood's observation I have found is in Erasmus Darwin's *Zoonomia*,<sup>1</sup> as stated. Practically the same statement as this by Williams, but also without any definite authority, is made by Copeland:<sup>12</sup>

The propagation of the disease by inoculation and by contact of the morbid secretions of the disease has been demonstrated. Sir B. Harwood and others have tried to inoculate healthy children with the fluid from vesicles sometimes intermingled with the eruption of scarlatina in hopes of producing a milder disease, as in smallpox; but although the disease was thus communicated in many instances, no mitigation of its type was thereby obtained. In a case which came under my care, the disease was produced by the contact of a small portion of the discharge from the throat of a person with malignant anginous scarlatina, and the patient thus infected had the disease in the most severe form, and recovered with difficulty.

6. Bridel, quoted by Miquel: *Lettres*, p. 143.

7. Leroy, Raoul: *Étude sur le traitement prophylactique de la scarlatine par la belladonna et par l'inoculation*, *Gaz. hebdomadaire*, 5:314, 1858; *Schmidt's Jahrb.* 99:57, 1858.

8. Cited by Noirot, M. L.: *Histoire de la scarlatina*, 1847. Guersant: *J. f. Kkr.* 3:42; *Encycl. d. med. Wiss.* 10:440, 1833.

9. Albers, J. F. H.: *Das Uebermpfen der Masern*, *J. de Chir. u. Augenh.* 21:541, 1834.

10. Williams, Robert: *Elements of Medicine* 1:118, 1836.

11. Murchison: *Scarlet Fever*, *Lancet*, 1864, p. 541.

12. Copeland, James: *Dictionary of Practical Medicine* 3:747, 1860.

#### ACCIDENTAL INOCULATION OF SCARLET FEVER WITH SMALLPOX VACCINE

On account of its bearing on experimental scarlet fever, the accidental inoculation of this disease with smallpox vaccine, described by Salmon Hudson,<sup>13</sup> is given in full:

That scarlatina is not only contagious, but actually infectious, capable of being transmitted by inoculation, we have the most positive and conclusive evidence, which will be shown by the narration of the following facts:

In the winter of 1854, smallpox made its appearance in Medina village, the county seat of Medina County, Ohio. This, as usual in small places, created no little excitement; everybody wished to be vaccinated. Vaccine matter was obtained, and the physicians were kept busy, myself with the rest. Mr. G. S., a prominent man in our township, sent for me to come and see him; said he had been exposed to the smallpox, and thought he had got it. When I saw him he had a high fever, quick pulse, headache; complained of pains all over his body; said he wished me to vaccinate all of his family, which I accordingly did. Saw Mr. S. the next day; found his body well covered with a rash, sore throat, and every symptom characterizing a plain case of scarlatina; salivary glands were discharging freely, which he attributed to the administration of calomel, of which he had not received one grain. I attended Mr. S. four or five consecutive days, and then dismissed him; telling his wife to save me the scabs from the arms of her two little boys, which she promised to do. In about three weeks, I received an envelop, containing two very nice scabs, of which I was very choise, and the next day vaccinated some thirty children from those scabs, twenty-three of which were taken down simultaneously with scarlatina during the fifth and sixth days after being vaccinated. I was recalled to see them, and, of course had business a plenty; was called everything but a gentleman, censured without mercy, threatened with a prosecution, and escaped the expense of a defense in court by the intervention of my friends.

The history of those scabs with which I vaccinated my patients, is this: Those little boys of Mr. S., after I vaccinated them, came down with scarlatina, though light, after which their vaccination operated effectually; vaccinia being for a time suspended during the invasion and termination of scarlatina, and then developing itself in the system, corroborating an old established principle that, as a general thing, the human system does not tolerate the invasion and development of two specific diseases at the same time.

The little boys contracted scarlatina from their father after being vaccinated, and not being much sick I was not called; and was not even aware that they had had scarlatina at all, or I should never have used the matter from their arms. But this did not exonerate me from censure. "I did it on purpose to make business," "deserved to be put through," as they termed it. Madam Rumor, as she always is, was busy; epithets without number were heaped upon my head; which of course had a tendency to injure me in my business.

And next as to the history of those cases which contracted scarlatina by inoculation from those scabs, which will be interesting as well as instructive. During the fifth and sixth days after I vaccinated them, twenty-three out of the thirty were taken down simultaneously with scarlatina, all of which did well; no unpleasant symptoms, such as retrocession of the rash, metastasis, or abscesses about the neck, but all terminated pleasantly within ten or twelve days from the time I vaccinated them. But no sooner had scarlatina subsided than vaccinia began to assert its prerogative; a nice little pustule began to form on the arm, and all the symptoms attending this disease became manifest, and occurred in every case that had scarlatina.

13. Extracts from Medical Thesis on Inoculation for Scarlatina, by Salmon Hudson of Whittlesey, Ohio M. & S. J. 14:190, 1862. Dr. Hudson's thesis was submitted to the faculty of the Starling Medical College at Columbus, Ohio, in 1862, in fulfillment of regular requirements for graduation. The late Dr. Starling Loving informed me in 1905 that the copy of the thesis had been lost. I have been unable to obtain any other details in regard to Dr. Hudson's observations.



Another important feature in those cases was that in several of the families whose children were vaccinated, some were absent. One, in particular, two little boys and a girl; the former two not being home, the matter was only put in the arm of the girl, who came down with scarlatina as the rest; had it very mild, from which her two little brothers contracted the disease in the most malignant form of which both finally died. In several other families the results were very similar; those who were vaccinated had it very mild and light, while those who took it in the natural way had it in the most malignant form, several of whom died.

Now, from the above it strikes me that scarlatina, like smallpox, may be modified and cut short—made less formidable—and, in those fearful epidemics which so frequently destroy so many of our children, its progress may be arrested, its symptoms mitigated, and the disease shorn of its terrors.

Now as to the practicability, I would suggest that in one of these fearful epidemics I would immediately procure some vaccine matter, put it in the arm of some person just exposed, or coming down with scarlatina. As soon as the patient has had scarlatina, vaccinia will come on, provided the patient has never been vaccinated before. In this manner I have no doubt but the disease may be essentially modified—rendered comparatively safe and harmless.

The fact that twenty-three of the thirty children vaccinated with the same vaccine matter were taken down “simultaneously” with scarlet fever points to a common source of infection, and one cannot but regret that Hudson did not describe the symptoms more in detail. Definite information as to the relation of the rash to the point of vaccination would have been of the greatest value because in so-called surgical scarlet fever, which is the result of an involuntary inoculation, the exanthem may spread first from the wound as described so well in the classical instance of von Leube,<sup>14</sup> who writes:

I have surely had a very slight tendency to scarlatina, since neither as a child, when several of my brothers and sisters were ill of the disease, was I attacked, nor later on, in my treatment of my patients. One day I wounded the index-finger of my left hand during the autopsy upon the cadaver of a patient that had died of an unusually severe case of scarlatina. On the seventh day, after the injury to my finger the wound, which had only imperfectly healed, began to pain. Then early in the tenth day I became unwell and angina appeared. On the eleventh day vomiting, and a decided fever followed, and at the end of the same day the scarlatina exanthem appeared. This, contrary to the usual procedure, spread first from the original lesion, following the lymphatic vessels up to the left arm, in the form of a broad stripe, and then rapidly extended over the rest of my body. The course of the disease was one of medium severity; the desquamation began also upon my left arm.

In considering the inoculation of measles, Thompson<sup>15</sup> makes the following statement about the transmission of scarlet fever in smallpox vaccine:

As regards scarlatina, I may adduce an observation which Dr. Stirton made some time ago. A child whom he had vaccinated showed an eruption of scarlatina the day after he had taken lymph from it, with which he had vaccinated two other children. About the eighth day there appeared an eruption like erysipelas spreading from the vaccine vesicles, not like the ordinary areola, which he attributed to the inoculation of the virus of scarlatina along with that of vaccinia. He was then further confirmed in this opinion by the insusceptibility manifested by these two children to scarlatina on a subsequent occasion.

#### FURTHER HUMAN EXPERIMENTS WITH SCARLET FEVER

Continuing the review of the work on experimental human scarlatina, there is nothing conclusive in Ashmead's<sup>16</sup> report that, three days after the inoculation into the skin with scales from a patient on the twenty-fifth day of scarlet fever, redness developed, followed eventually by suppuration and acute tonsillitis without fever or desquamation.

Stickler<sup>17</sup> reported that he produced scarlet fever in ten children by inoculating the skin of the arm with mucus from the throat and mouth of a patient who had a mild attack of the disease. The material was secured soon after the eruption had appeared, and before its use it “was treated with carbolic acid, according to the suggestion of Chamberland and Roux, the addition of  $\frac{1}{600}$  part of the acid being made.” This article was published posthumously, it having been found among Dr. Stickler's papers with the note that “the inoculations were made to prove that a protective virus had been discovered,” but, as what was regarded as scarlet fever developed, other experiments were planned to secure protection. It is stated that scarlet fever developed in each of the ten persons, all of whom recovered. In several of the cases the eruption at first seemed more marked at the point of injection; in three cases this became the seat of abscess. In one case nephritis developed. The incubation varied from twelve to seventy-two hours. In at least four of the inoculations the material inoculated must have been kept for about eight days. There is no further statement as to the circumstances under which it was kept. In view of the lack of details in regard to the symptoms in the inoculated children as well as for other reasons, Stickler's results must be set aside as doubtful.

The most recent attempts to produce scarlet fever in man experimentally are by Takahashi<sup>18</sup> and by G. F. and G. H. Dick.<sup>19</sup> Takahashi injected his five children, aged from 3 to 10, with the blood of a patient with scarlet fever on the sixth day. The blood was diluted in physiologic sodium chlorid solution with sodium citrate so that 1 c.c. contained 0.0001 c.c. of blood, and of this mixture four children received 1 c.c. subcutaneously and one, a 3-year-old boy, the youngest, 0.5 c.c. No symptoms whatever developed, and several weeks after his injection three of the children were injected with 0.15 c.c. and one, the youngest, with 0.06 c.c. of blood from a scarlet fever patient on the fifth day of a severe attack. In no case did any symptoms develop after the second inoculation. Furthermore, smearing the throats of two of the inoculated children with a mixture of the throat secretions and blood of a scarlet fever patient on the fourth day of the disease was also without any apparent effect. Takahashi is inclined to conclude that this experiment “proved the efficiency of the prophylactic inoculation against scarlet fever,” but in the absence of convincingly positive human control experiments the true significance of these experiments is not now determinable.

The largest series of inoculations to produce scarlet fever in man is that of the Dicks.<sup>19</sup> Healthy men and women volunteers between the ages of 18 and 35,

16. Ashmead, A. S.: Inoculation of a Japanese with Scarlet Fever Germs, *M. Rec.* **40**: 270, 1891.

17. Stickler, J. W.: Scarlet Fever Reproduced by Inoculation: Some Important Points Deduced Therefrom, *M. Rec.* **56**: 363, 1899.

18. Takahashi, I.: Prophylactic Inoculation in Human Against Scarlet Fever, *Japan M. World* **1**: 4 (June) 1921.

19. Dick, G. F., and Dick, Gladys H.: Experimental Inoculations in Scarlet Fever, *J. A. M. A.* **77**: 782 (Sept. 3) 1921.

14. Von Leube, W.: *Specielle Diagnose der inneren Krankheiten* **2**: 364, 1893.

15. Thompson, Hugh: Inoculation, with Suggestions for Its Further Application in Medicine, Especially in Mitigating the Severity of Measles, *Glasgow M. J.* **33**: 420, 1890.



living in Chicago and without any history of scarlet fever, were inoculated in various ways: The blood serum of scarlet fever patients was swabbed on the tonsils and injected subcutaneously without any effect; whole citrated blood from scarlet fever patients was injected subcutaneously without effect; the filtered (Maasen or Berkefeld) throat secretion of early scarlet fever was swabbed over the tonsils and pharynx, used as a gargle and injected subcutaneously without effect; cultures of hemolytic streptococci from the throats of scarlet fever patients were smeared on the throats of thirty volunteers, seven of whom developed sore throat, leukocytosis and fever, but no rash, the others remaining perfectly well; finally, nine inoculations by means of throat swabs were made with the pure cultures of a pleomorphic bacterium obtained from the throat, blood and urine in the early stages of scarlet fever, and in two instances sore throat with fever, leukocytosis and a rash on the palate, but no cutaneous eruptions developed. The fact that no case of typical scarlet fever was produced in these extensive experiments naturally raises the question which the future may solve whether the results would have been different if the volunteers had come from rural communities.

#### CONCLUSION

This brief review of the recorded attempts to produce scarlet fever experimentally in man reveals that it is exceedingly doubtful whether a single positive result has been obtained. In view of the ease with which scarlet fever appears to be transmitted under natural conditions and the not infrequent occurrence of surgical scarlet fever, the failure of the efforts at experimental transmission is a perplexing puzzle that awaits solution.

### ISOLATED DISEASE OF THE SCAPHOID

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Since Köhler<sup>1</sup> described the first case of isolated disease of the scaphoid in 1908, forty-two cases have been reported. The disease is of more frequent occurrence than this figure would indicate, however, but is diagnosed weak foot, since it occurs in abducted feet, with mild symptoms which clear up on immobilization. Its importance lies in the fact that it has been mistaken for tuberculous disease. Unfortunately, no reports of the pathology so found have been published.

Our knowledge of its pathology is limited to what can be surmised from roentgenograms and the clinical picture. By roentgen ray, the scaphoid is seen as a disk, from one-third to one-fourth normal in size, biconcave, or of irregular density, or opaque. The picture, of course, varies with the stage of the disease.

However, the space occupied by the bone is undiminished, and there is no derangement of the other bones, such as would occur in a crush fracture. Schultze<sup>2</sup> reported a compression fracture produced on a cadaver which gave this picture by roentgen ray.

The suggested etiology has ranged from endocrine imbalance to osteomyelitis, including syphilis, infec-

tious disease, vascular change and tuberculosis. Except for one patient of Köhler's and five patients of Schultze's who had family histories of tuberculosis, evidences of this disease have been lacking in the literature. In only three cases has an infectious disease preceded the onset by a short interval. Not only has the Wassermann reaction been negative as a rule, but other evidences of syphilis have been wanting. One patient of Campbell's had notched teeth, and its mother had a four plus Wassermann reaction.

Trauma appears most consistently in the histories as a possible factor. By seven reporters, it is assigned as the cause and preceded the onset by a period varying from several days to a year. It has never been of sufficient severity to be the direct and only cause of what seems by roentgen ray to be an extensive structural change. One writer<sup>3</sup> believes that trauma injures the center of ossification. Another supposes that nutrient vessels may have been torn off. Still

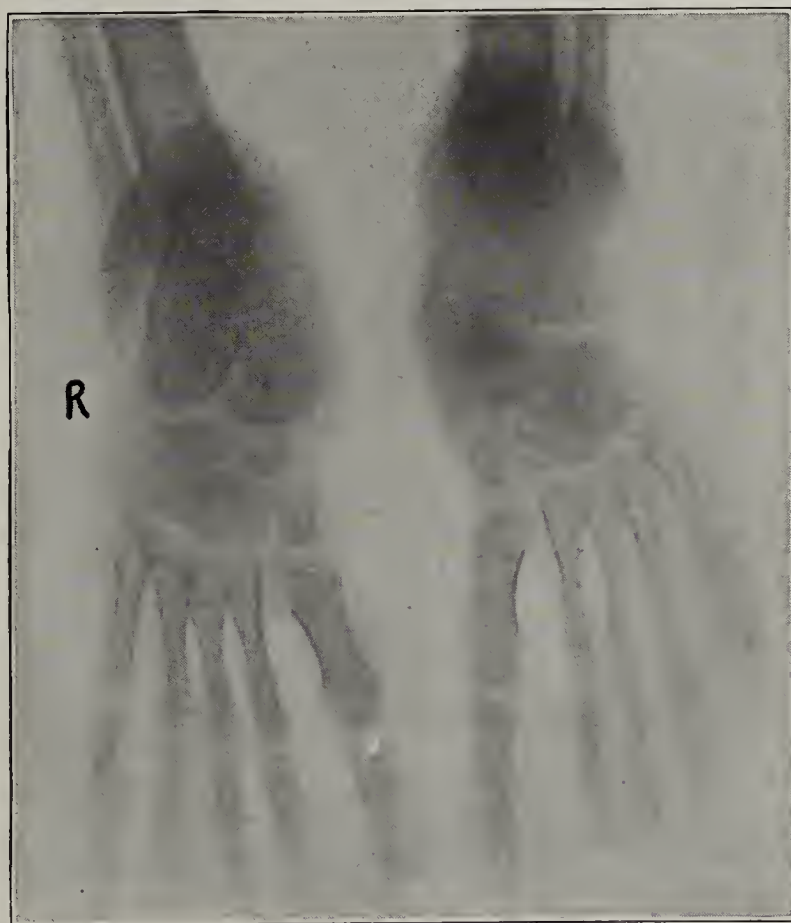


Fig. 1 (Case 1).—On admission: beginning compression of scaphoid; note abduction of forefoot on affected side.

another<sup>4</sup> assigns to trauma a dystrophy which softens the bone, later allowing collapse under weight-bearing.

The clinical picture is that of a child of from 4 to 8 years, giving a history of trauma varying from a turned ankle to a crushing injury beneath an automobile. The symptoms, which are occasionally entirely absent, are a slight limp, and discomfort at the site of the scaphoid, increasing often to actual pain at night. The signs, which are also inconstant, are enlargement of the scaphoid, as shown by palpation, and tenderness. Abscess formation never occurs.

The treatment is rest or immobilization in plaster for from three to ten weeks. The prognosis is excellent. I examined, through the kindness of H. L. Taylor, all the patients on the second division at the

1. Köhler, Alban: Ueber einer Häufige, bisher anscheinend unbekannte Erkrankung einzelner Kindlicher Knochen, München. med. Wchnschr., Sept. 15, 1908, p. 1922.

2. Schultze, Ernest: Das Alb. Köhler'sche Knochenbild des Os Naviculare pedis bei Kindern—eine Fraktur, Arch. f. klin. Chir. 100: 431-452, 1913.

3. Preiser, George: Zur Frage der typischen traumatischen Ernährungsstörungen der kurzen Hand- und Fusswurzelknochen, Fortschr. a. d. geb. d. Röntgenstrahlen 17: 360-363, 1911.

4. Mouchet, Albert, and Roderer, Carle: La scaphoidité tarsienne des jeunes enfants, Rev. d'orthop. 7: 302 (July) 1920.



Hospital for Ruptured and Crippled whose symptoms had subsided not less than a year before. No abnormality was discovered in these six cases, three of which I have already reported,<sup>5</sup> nor could the affected side be distinguished from the other by roentgen ray.

In three of the four new cases reported below, serial roentgenograms were taken at three-week inter-



Fig. 2 (Case 1).—Two months later: compression complete with progress of ossification continuing; note white line indicating opaque disk through center of bone.

vals. In one of these cases, through the courtesy of the roentgenographer to the Kings County Hospital, I saw the roentgenogram taken immediately following the injury to which the disease was traced. This revealed a foot normal in every respect, thus ruling out a direct compression fracture as the cause of its appearance in the roentgenogram. The serial pictures showed ossification to be progressing as in the normal foot. The bony architecture was normal about the opaque disk as a nucleus. This disk was obliterated in from three to nine weeks. It seems, therefore, that there was no injury to the center of ossification, and that no disturbance of the vascular supply had taken place.

The scaphoid is cartilaginous up to about 4 years of age, when ossification commences. It is near this age that the disease is found. A mechanism of the disease which would seem to account for all the facts is the following: Through trauma, or possibly some unknown factor, the bone is enlarged. This is demonstrable by palpation and would also account for the abduction of the fore part of the foot found in these cases. In weight-bearing, this enlarged bone, as the keystone of the arch, is subjected to anteroposterior pressure, resulting in a flattening and spreading out laterally of the soft, newly formed osseous portion. The biconcave appearance presented would thus be accounted for. As the constituents of the bone—cartilage and osseous material—are still present, conversion of cartilage into bone continues as in the normal bone. The subsidence of the symptoms corresponds in time roughly to the reestablishment of bony architecture throughout all of the portion visible by the roentgen ray.

#### REPORT OF CASES

CASE 1.—H. M., aged 7 years, came to the dispensary of the Hospital for Ruptured and Crippled, Second Division, June 29, 1921, complaining of a limp, developing two weeks

previously. The family history was negative throughout. The child had always been well. There was no history of trauma. Pain was present only at night. The mother said that she had been told the boy had fallen arches. The general condition was good. The patient walked with a limp, the legs rotating inward. On standing, the feet were in a position of marked abduction and eversion. There was a prominence at the site of the left scaphoid, which was tender on pressure. No redness or other sign of inflammation was noted; and there were no stigmas of syphilis. As Case 2 (reported below) was under treatment at the time, this case was given mixed treatment, in order to compare the progress of the two. The foot was immobilized in plaster of Paris. Roentgenograms taken immediately and thereafter at three-week intervals revealed normal progress of ossification with final restoration of the bony architecture at the site of the opaque disk first seen.

August 8: The plaster-of-Paris cast was discarded. The tenderness of the left scaphoid was gone. The patient was advised to use the foot.

August 22: There had been no recurrence of symptoms. The patient was discharged.

CASE 2.—T. T., aged 6 years, came to the dispensary of the Hospital for Ruptured and Crippled, Second Division, May 27, 1921, with a complaint of limp. The family and past history was negative. There was insignificant pain, occurring only occasionally, more frequently at night. Symptoms dated back to March 6, when the patient was run over by a truck, the wheel passing over his right foot. He was removed to a hospital, where the foot and hip were examined by roentgen ray. He was then sent home, and remained in bed under a physician's care. At this time, there was pain, swelling and disability, lasting four days. He remained in bed six weeks, however, because of a limp, which had persisted to date. The general condition was good. The patient walked with a slight limp on the right. The foot was in moderate abduction and eversion; the scaphoid was enlarged, but not tender, and there was no redness. All motions were free. The teeth showed microdontia, with spaced incisors, but no definite signs of syphilis, and there



Fig. 3 (Case 1).—One year later: Scaphoid is normal in architecture, but ossification has not yet overtaken that on normal side.

were no other stigmas of syphilis. The foot was examined by roentgen ray and immobilized in plaster of Paris. The roentgenogram was typical of isolated disease of the scaphoid. The roentgenogram taken immediately after the accident was negative. Roentgenograms taken at three-week intervals revealed a process similar to those observed in Case 1.

July 6: The plaster of Paris was removed. Slight prominence of the scaphoid remained. The plaster was discarded and use of the foot advised.

5. Moffat, Barclay: Three Cases of Isolated Disease of the Scaphoid, *Tr. New York Acad. Med., Orthop. Sec.*, Jan. 21, 1921.



July 27: As the patient reported that the limp had disappeared and there was no further pain, he was discharged.

CASE 3.—A. B., aged 7 years, came to the dispensary of the Hospital for Ruptured and Crippled, First Division (service of Dr. Wallace, through whose courtesy the case is reported), Dec. 8, 1921. The family history was negative. In July, the boy jumped from a height of 2 feet, following which there was swelling and disability of the left foot, confining him to his bed for four days. No symptoms were noted after four weeks. Onset of pain and disability in the left foot occurred three days before while the boy was playing in the snow. The feet were moderately abducted and everted, with tenderness and swelling at the site of the scaphoid on the left. Examination by roentgen ray revealed a typical lesion of Köhler's disease, and serial roentgenograms revealed that the progress of the disease was similar to that in the two previous cases. The foot was immobilized in plaster.

Jan. 10, 1922: The plaster was removed. There were no further symptoms. The patient was encouraged to walk.

February 21: As there had been no recurrence of symptoms, the patient was discharged.



Fig. 4 (Case 4).—On admission: specific process in external cuneiform and cuboid; scaphoid compressed.

CASE 4.—W. R., aged 7 years, was admitted, Jan. 17, 1922, to the dispensary of the Hospital for Ruptured and Crippled, Second Division, complaining of swelling and limp in the right foot. The family and past history was negative. Onset occurred three months before, with generalized swelling of the right foot, and limp. Two months before, there was localized swelling on the dorsum of the foot, which was tender to touch and which had remained stationary since. There was no history of trauma. The patient walked with difficulty and was unable fully to extend the left arm. The angle of greatest extension was 135 degrees; the angle of greatest flexion, 60. There was some enlargement and tenderness about the left elbow joint. The right foot was swollen in the region of the tarsus. There was tenderness on manipulation and pressure. The function of the ankle was not impaired. Right calf,  $6\frac{1}{2}$ ; left calf,  $7\frac{1}{4}$ . The patient had been admitted for specific treatment. He received three doses of neo-arsphenamin, under which he showed improvement.

February 3: The patient was discharged to the outpatient department.

March 15: The patient was readmitted because of fluctuant swelling over the dorsum of the right foot. The left elbow was swollen, and was tender on manipulation. There was

marked limitation of motion. The forearm was held at 135 degrees and in pronation. A posterior elbow splint was applied, and arsphenamin was given.

March 16: The abscess was incised.

March 31: The patient discharged to the outpatient department. The wound was unhealed.

June 21: Readmission: The child had been under treatment in the dispensary for several months for the ulcer on



Fig. 5 (Case 4).—Eight months later: increased opacity of scaphoid; compression continuing as ossification advances.

the dorsum of the right foot. A roentgenogram revealed involvement of the cuneiform and flattening of the scaphoid anteroposteriorly. The left elbow was enlarged and painful. Extension was limited to 160 degrees, with 15 degrees of motion.

June 22: The foot and elbow were drained, and necrotic bone was curetted from the dorsum of the foot.

June 21: The Wassermann reaction was negative.



Fig. 6 (Case 4).—Same as Figure 5, showing contrast with normal bone of other foot.

July 25: The patient was discharged to the outpatient department, with the foot and elbow in a posterior splint. The wounds were still draining.

September 25: Readmission: Tissue was removed from the elbow for examination. The patient was discharged to the outpatient department.

October 1: Tissue examination suggested tuberculosis or syphilis. No spirochetes were found.



In Case 4, the increase of pressure on the scaphoid was brought about by collapse of the outer border of the foot, the result of the specific process. Here, then, the scaphoid was only relatively enlarged.

#### CONCLUSIONS

1. The scaphoid becomes enlarged through trauma of varying severity.

2. The roentgen-ray appearance is due to a compression fracture of the scaphoid secondary to this enlargement, a result of the trauma of weight-bearing.

3. No infectious disease or disturbance of nutrition of the bone is involved in the etiology.

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### BACTERIOLOGIC AND CLINICAL EXPERIENCE WITH BACILLUS ACIDOPHILUS \*

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Our aim was to implant *Bacillus acidophilus* in the intestine and, while maintaining it as the predominant intestinal organism, to determine what changes, if any, were noted clinically. To ascertain the bacteriologic facts, we examined the feces of every patient before treatment and then at intervals of from five to ten days. In all the cases mentioned later, the implantation of this organism was successful, and during treatment it became the predominating fecal organism, and we were able to recover live *Bacillus acidophilus* from the feces.

After infancy, milk is less prominent in the diet than during infancy. *Bacillus acidophilus* gradually diminishes until in adult life it is present in very small amounts. The adult intestinal flora is determined, more or less, by the diet of the individual. The accompanying illustrations demonstrate the changes in the fecal flora after the administration of *B. acidophilus*.

It has been our endeavor to determine the value of *B. acidophilus* when applied clinically to the human subject. Our guiding factor in this work has been the inhibition of the colon bacilli by *B. acidophilus*. Therefore, if any beneficial results have been observed clinically, they must be attributed to the decrease in the colon bacilli and a minimization of their products.

The colon bacillus is a normal inhabitant of the intestinal tract of man, and is found always in greatest numbers in the large intestine. Under normal conditions it is rare to find these organisms in the small intestine, but in certain diseased states they may even be found in the stomach, and have been held responsible for inflammation of the gallbladder and its ducts, the hepatic duct, the pancreas and even the liver itself. In addition, the bacilli are believed by many to be responsible for a number of the rheumatoid arthritides.

The colon bacillus can utilize both carbohydrate and protein material; from the latter it produces the substances that are believed to be harmful to the body. By intravenous injections of small quantities of fecal extracts, Bouchard<sup>1</sup> repeatedly killed rabbits, thereby

proving the toxicity of these products. Fortunately, blood from the intestine, laden with these substances, first passes through the liver, which converts the toxins into harmless ethereal sulphates and combined glycuronates. Nencki and Pawlow<sup>2</sup> experimented on the effect of intestinal absorption in dogs in which the liver was eliminated from the circulation. This was done by an Eck fistula, which forces the portal blood to flow directly into the inferior vena cava. Therefore, the products of digestion do not pass through the liver. When fed exclusively on a meat diet, these animals promptly died, but survived for a considerable time when given only a small quantity of protein.

When an excess of intestinal toxins reaches the general circulation, there is a resulting production of a severe autointoxication. This is especially true if there exists any impairment of the excretory organs. In some persons the effects of autointoxication become less obvious in the course of time. Perhaps this is due to the development of a partial immunity to intestinal toxins. But apart from the production of immunity, different individuals show great differences in their susceptibility to this form of poisoning. Many have suggested that the results of autointoxication are found in the chronic diseases so common to our later years. Nevertheless, in spite of the most critical survey of our knowledge about the effects of colon bacillus activity, we must admit that it is an ever present source of real danger to the well-being of the human mechanism. Although the autointoxication theory is by no means universally received, it is an accepted clinical assumption that often an intestinal absorption of toxic compounds, formed in the gastro-enteric tract, originates changes in the liver, kidneys, brain and blood vessels. We believe, therefore, that the autointoxication theory is one that deserves a great deal of consideration. If the intestinal flora could be so changed that the colon bacilli would be kept at a minimum with a lessening of their toxic products, a great deal would be accomplished toward combating the results of autointoxication.

By the use of cultures of *B. acidophilus*, this, in a measure, has been done. In our studies we have employed *B. acidophilus* in various forms. By mouth we have given it first as milk fermented by this organism, and later in nutrient broth cultures. In some instances it has been given by rectal implantation. We are not enthusiastic with this method, as it must always be supplemented by oral administration. The technic is simple. After a cleansing colon irrigation of plain water has been given, two or more ounces of the broth culture is slowly introduced into the rectum without pressure. The pelvis is kept elevated during the injection and for one-half hour afterward. Of course, this method is advantageous in procuring a rapid implantation.

For oral use we have found the culture more desirable than the milk. The milk must be taken in large amounts, from a pint to a quart daily. To some persons the taste is very disagreeable, and this is an important factor if we wish patients to continue the treatment. On the other hand, the culture is much more convenient to handle, both from the physician's and the patient's standpoint. Instead of calling for their daily supply of milk, patients may secure a week's supply at one time. The dose is from one to two tablespoonfuls three or four times daily before meals,

\* Read before the New York Physician's Association, April 27, 1922.

1. Bouchard, C. J.: Leçons sur les autointoxications dans les maladies, Paris, 1887.

2. Nencki, M., and Pawlow, J. P.: Arch. f. exper. Path. u. Pharmacol. 38: 215, 1897.



depending entirely on the response of the individual. The culture may be taken with milk, orange juice or lactose and Vichy water. In a large series of cases we have failed to see any advantage of the milk over the culture. With the latter, implantation is effected as rapidly as with the milk, and is maintained as long.

#### RESULTS

We have arbitrarily divided the cases in this study into two groups. Both types, however, have manifested general symptoms of their disease. The first comprises the so-called chronic intestinal stasis or autointoxication group, with more or less existing constipation. Case 1 will serve as an illustration.

CASE 1.—A woman, aged 31, a public school teacher, gave a history of chronic constipation of about fifteen years' duration. It was necessary for her to resort to various cathartics every few days in order to have an evacuation of the bowels. Clinically, the patient gave a definite history of autointoxication, with all its attendant symptoms: the bad breath, nausea, irritability, pains in the limbs, and a general feeling of malaise. These symptoms would disappear after a thorough bowel movement, only to return when constipation was again in evidence. She has been under observation since Oct. 4, 1919, and thoroughly investigated. The physical examination disclosed absolutely nothing abnormal. The blood showed a normal count; the stomach contents, a slightly increased acidity; the stool examination disclosed a preponderance of colon bacilli, and the urine a large amount of indican. The Wassermann reaction was negative. A roentgen-ray series of the gastro-intestinal tract was negative to obstruction or kinks of any kind, but a spasticity of the transverse colon was noted with a thirty-six hour retention. Feb. 26, 1921, she was placed on *B. acidophilus* cultures in one tablespoonful doses in milk, four times daily, and all cathartics were stopped. At the end of the third day she was forced to take a dose of castor oil to obtain relief. At this time the dose of the culture was increased to two tablespoonfuls three times daily. At the end of the first week bowel movements began to occur regularly, and have continued ever since. At that time her toxic symptoms began to disappear. Frequent examinations of the feces were made, and *B. acidophilus* was found to be the predominating organism. While we do not believe that this patient is cured of her constipation, her general health has materially improved.

The results in this group of cases must be considered from two points of view: as regards (1) their toxemia, and (2) their constipation. The subjective signs of improvement are first noticed by the patient in from three to ten days after treatment. The usual report of the patient is that there is a general feeling of improvement. There is early relief from the depression and malaise, so common to this variety. Headache disappears soon after, and, lastly, the abdominal distress is ameliorated. The constipation may or may not be relieved. However, in the mild forms of intestinal stasis, improvement has occurred.

The second large group of cases in this study comprises the diarrheas. In all of these, we excluded the

possibility of tuberculosis of the intestine and diarrheas due to organic disease. Case 2 is typical:

CASE 2.—A woman, aged 34, under observation since April 14, 1921, with a history of digestive disturbances for the last five years, reported painful intestinal contractions, with the evacuation of large quantities of mucus, at times blood-streaked and always diarrheal in character, the bowels moving on an average of eight times a day. Loss of appetite, weight and sleep also were prominent symptoms. The physical examination was essentially negative. Except for the absence of free hydrochloric acid and a low total acidity, the stomach contents were negative. The stool examination on a flesh-free diet revealed undigested food particles and the presence of blood. A predominance of gram-negative bacilli was noted. The roentgen-ray examination of the gastro-enteric tract was negative except for gastric retention at the end of six hours. All other examinations were essentially negative. As the patient had gone the rounds of numerous physicians and had been dieted and given drugs for this condition, she was immediately placed on *B. acidophilus* cultures. Stool examinations were made every two days, and within ten days after treatment was begun, the

feces showed a fairly good implantation of *B. acidophilus*. Coincident with this implantation the patient experienced relief from pain. The blood had entirely disappeared from the stool, and the mucus lessened. Up to the present she has continued to improve. She has a formed stool, and altogether has increased in weight and strength. During the course of treatment the culture could not be obtained for three weeks, and there was a return of her former condition. However, as long as the culture is taken, she enjoys good health.

As in the other group, we have viewed the results from two angles. The relief of the general symptoms was apparent in from five to fifteen days. The patients' report was similar to the first group: first, a feeling of improvement in the

general condition and then a gradual disappearance of the symptoms until a normal state was reached. The diarrhea in this class of cases showed a marked response. In a majority, a very decided improvement was noticed at the end of the first week. Within three weeks the patient was having one or two natural movements daily. This continued all through treatment, and was present in a surprisingly large percentage of those taking the culture.

In both groups the patients' reports were carefully checked up by notation of the improvement in the objective findings. Bacteriologic studies of the feces were made in every case. After the first examination of the feces, only gram stains were made, and the relationship of the gram-negative and gram-positive flora was noted. Indican studies also were made. However, the laboratory findings were never considered important unless they coincided with the general clinical results.

In summarizing this work, attention should again be called to the fact that the improvement obtained by *B. acidophilus* implantation can be attributed only to a decrease in the activity of the colon bacilli. In the cases comprising this study, no other medication was

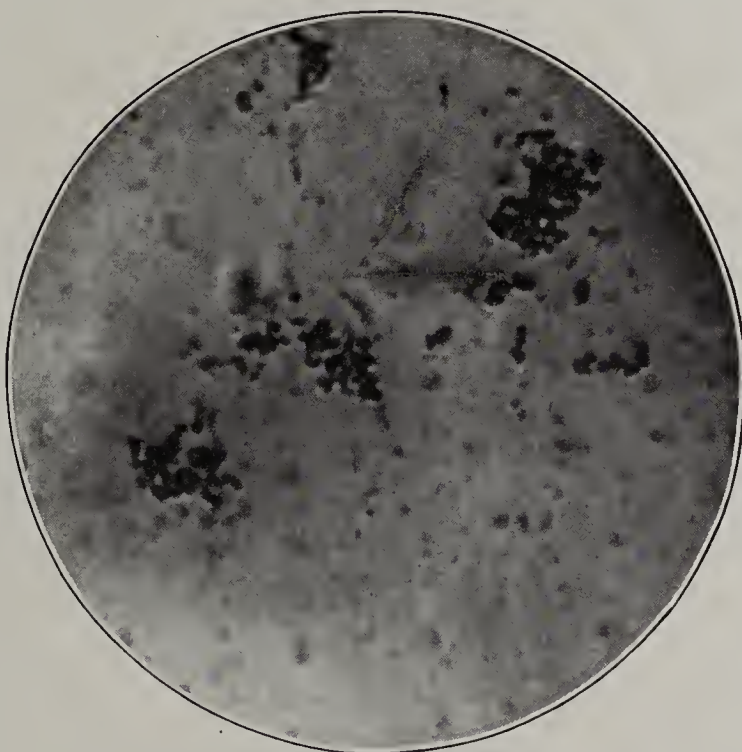


Fig. 1.—Pure culture of *B. acidophilus*.



given. Dietary changes were carried out in all cases according to the individual needs.

We believe that the culture in broth is the most desirable means of administering *B. acidophilus*. It is more pleasant and more convenient for the patient, and it affords the physician a more accurate control of the dosage. It is of the utmost importance to make fecal studies in all cases. This is not only of value as an indication for the treatment, but also gives definite information as to the adequacy of the dose. In persons who do not show signs of implantation within a week, rectal injections of the broth may also be employed. Clinically, our results have been most gratifying. In the treatment of 200 patients in the constipation group and 100 in the diarrheal group, it was noted that in those suffering from autointoxication with constipation, 70 per cent. showed complete relief from their symptoms of toxemia; 15 per cent. showed some improvement, while the remaining 15 per cent. showed none whatsoever.

Since the 15 per cent of failures included many who did not continue the culture for an adequate length of time, we feel reasonably sure that if this treatment is maintained for four weeks in every case a larger per-

there is a gradual formation of the fecal material until a soft, light and partially formed stool results. The second effect is the relief from the toxic symptoms that previously existed. This bears a definite and constant relationship to the change in the fecal flora. Furthermore, the accumulated evidence and clinical belief that the products of intestinal putrefaction are harmful give additional importance to these results. As a consequence of more than two years' work, we believe that *B. acidophilus* minimizes intestinal autointoxication and is indicated in the so-called toxic intestinal conditions.

It seems proper, however, to remember the fate of similar predecessors, particularly the bulgarian bacillus, and a word of caution now would not be amiss. After all, the virtue of this remedial agent lies in its ability to inhibit the colon bacilli. As the latter organism is held responsible for intestinal "toxicity," the range of usefulness of *B. acidophilus* seems clearly defined. To employ the milk or culture in other conditions will eventually tend to discredit it and put it in ill repute. Honest enthusiasts and dishonest publicists may hail it as the "longevity bug," but we must not be deceived by the cry of a panacea. We feel that its value as outlined

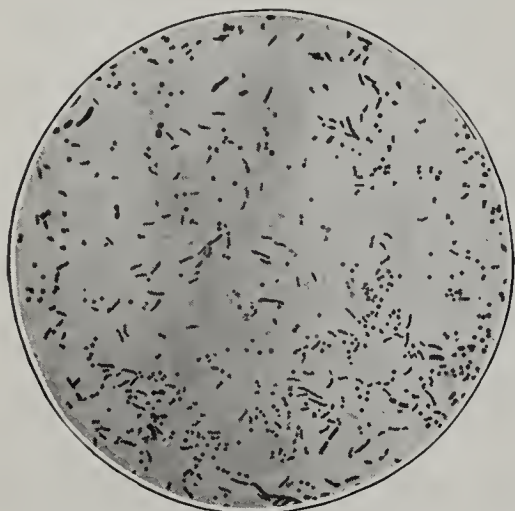


Fig. 2.—Fecal flora before treatment: colon bacilli predominating.

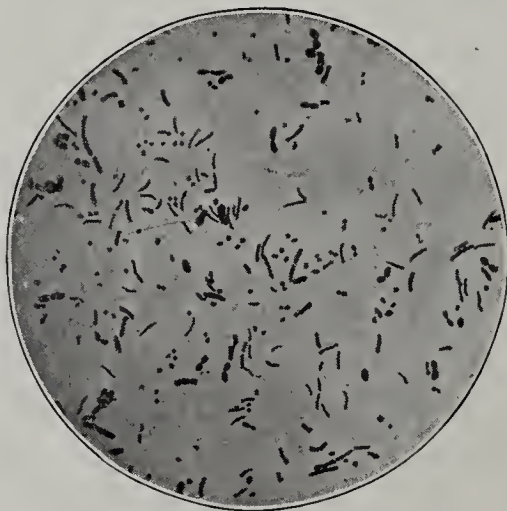


Fig. 3.—Same case: partial implantation of *B. acidophilus*.

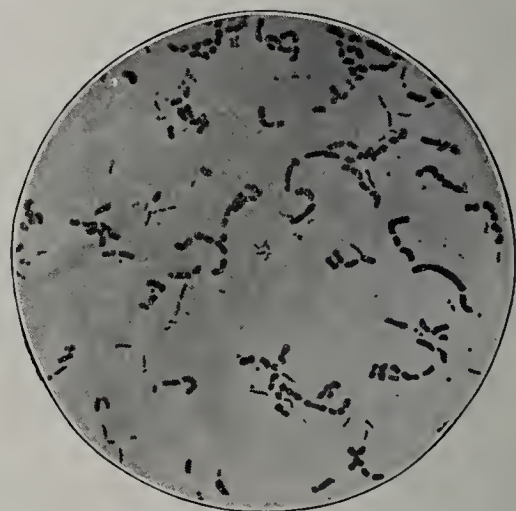


Fig. 4.—Same case: complete implantation of *B. acidophilus*.

centage will show an improvement. In contradistinction to the relief of the symptoms, the constipation itself showed complete relief in only 25, improvement in 35, and failure in 40 per cent. of the cases.

In the second group, the diarrheas, there was complete relief from all symptoms in 70, some relief in 10, and failure in 20 per cent. of the cases.

Although this study has not been carried on long enough to determine the permanence of these figures, we wish at this time to record the fact that, in those cases under observation for a year or more, from 10 to 15 per cent. showed a return of their symptoms.

#### EVALUATION OF RESULTS

We are confident of the value of *B. acidophilus* in the intestinal conditions mentioned in this paper. However, it is only one link in the therapeutic chain, and affords a larger chance of success in the treatment of these obstinate conditions than many forms of therapy. That *B. acidophilus* can be successfully implanted in the human intestine is indisputable, as is also the fact that this implantation can be maintained at such a high level as to keep *B. acidophilus* the predominating intestinal organism.

Its effect in changing the intestinal contents is noted in two ways: In the constipation group the feces become comparatively odorless, while in the diarrheas

above is established. Whether it has additional properties should be first corroborated by sober and mature judgment. It is important to mention that when the administration of the culture ceases, the colon bacilli begin to increase, slowly at first, until the fifth or the sixth day, at which time they again are present as the predominant type of bacteria. Coincident with the increase of *B. coli*, the previous clinical symptoms again manifest themselves.

There are, nevertheless, definite indications for future work with *B. acidophilus*. Its effect on typhoid, paratyphoid and the dysentery group deserves careful consideration. Theoretically, *B. acidophilus* may be employed as a prophylactic agent. A colon bacillus infection of the gallbladder and its ducts or of the pancreas finds us usually without any means of proper treatment. By regular courses of *B. acidophilus* we have a means that offers some hope in the prevention of an ascending infection by *B. coli*. It certainly deserves consideration because of its harmlessness and ease of administration.

We suggest that *B. acidophilus* be given a trial in the intestinal conditions outlined. We do not believe that the Fountain of Youth has been discovered through its use, but feel reasonably certain that it is a therapeutic agent worthy of further investigation.

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## LEISHMANIASIS IN THE UNITED STATES

REPORT OF THE THIRD AMERICAN CASE OF KALA-AZAR AND OF A CASE OF ORIENTAL SORE \*

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AND

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Within a period of two months, two patients with leishmaniasis, one with kala-azar and one with oriental sore, were admitted to the Children's Clinic of the Stanford Medical School. While kala-azar is of extreme rarity in the western hemisphere, one case having been previously reported from Paraguay<sup>1</sup> and one from Boston,<sup>2</sup> reports of oriental sore in North America are increasing in frequency. During the current year no less than seven cases<sup>3</sup> have been reported from the United States and Canada. All of these, save two recently described by Fox,<sup>3</sup> have passed undiscovered or unsuspected by immigration inspectors. When we realize that both forms of leishmaniasis, the systemic and the cutaneous, flourish in the Old World under climatic and other conditions such as can undoubtedly be duplicated over wide areas of this continent and within latitudes which include at least two thirds of the United States, we should regard the infection as a potential danger of considerable import against which we should increase our safeguards.

## REPORT OF CASES

CASE 1.—*Kala-azar* (H. K. F. and H. S., Jr.). *History*.—B. P., a girl, born, Jan. 30, 1920, in the province of Bari, Italy,<sup>4</sup> was admitted to the Children's Clinic, May 6, 1922, because of fever, loss of strength, weight and appetite, fretfulness and recent jaundice. The father and mother were well. They had had no other children. In May, 1921, when the patient was 15 months old, the family left Bari, went

to Naples, and embarked for the United States. They arrived in Boston, June 14, and immediately went to San Francisco, where they have lived continuously ever since. The birth of the patient, and the developmental and feeding histories were essentially negative. No exposure to kala-azar was known. In Italy the child had been bitten many times by fleas. No bedbugs or body lice had been seen by either parent. No spots on the child's clothing or bedding, such as might have been made by crushed bedbugs, were ever observed, either at home, in Naples or on the steamer. The child was apparently well at the time she entered this country, and for about six months thereafter. In December, 1921, she became sluggish and irritable, refused food, slept poorly and cried a great deal. The symptoms gradually increased in severity. By March, 1922, she had become very weak, very pale and had some cough and fever. After a short period of improvement, the condition became rather suddenly worse. May 2, jaundice appeared, accompanied by light—but

not clay-colored stools. There was no vomiting. Swelling of the abdomen had not been noted by the parents.

*Physical Examination.*

—The age of the patient was 27½ months; the weight, 27¼ pounds (12.4 kg.); the length, 33 inches (84 cm.). The circumference of the head was 18¾ inches (45.7 cm.); of the chest, 18¾ inches (45.7 cm.); of the abdomen, 20⅛ inches (50.8 cm.). The skin and sclerotics were definitely icteric. There was moderate prostration. There was extreme asthenia. Apparently, nutrition was fair. The head, neck, lungs and heart were essentially normal. Respiration was rather shallow owing to abdominal enlargement. The liver was not tender; its edge was sharply defined and firm, and extended in the mid-clavicular line 10 cm. below the costal margin. The surface was smooth. The spleen filled the left flank; the lower pole was 12 cm. below the costal margin in the midclavicular line. The

edge was notched and sharply defined; the substance, firm and not nodular. There was no abdominal or visceral tenderness, and no spasm. The superficial veins were prominent. The peripheral lymph nodes were not notably enlarged. The tendon reflexes were not obtained.

*Laboratory and Special Examinations.*—Blood examination revealed: erythrocytes, 2,350,000; leukocytes, 3,400, a ratio of 690:1; polymorphonuclears, 22 per cent.; small lymphocytes, 77 per cent.; large mononuclears, 1 per cent.; no transitionals, basophils or eosinophils; hemoglobin, 40 per cent.; color index, 0.85; poikilocytosis and anisocytosis. The urine was negative excepting for a positive bile test in the first examination only. Examination of the feces was twice negative for ova and parasites; there was no occult blood. The Widal test was negative. Two blood cultures were negative. The Wassermann test (with cholesterinized antigen) was negative. The coagulation time was three minutes. Roentgen-ray examination revealed the chest normal and the spleen enlarged. The tuberculin test, intracutaneous, human

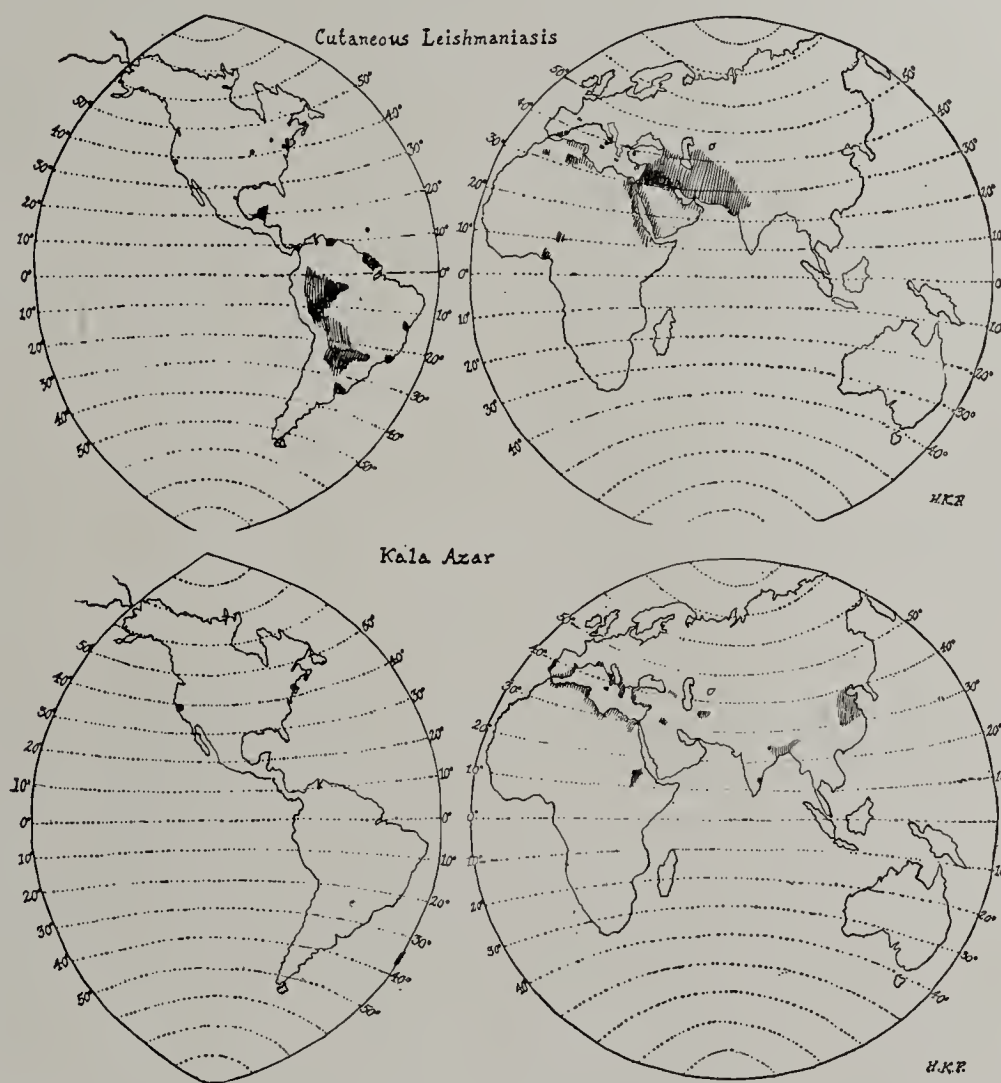


Fig. 1.—Approximate distribution of cutaneous leishmaniasis and of kala-azar. The exact limits of endemic foci cannot be determined. In South America the extent of infection is probably greater than is here shown, cases having been reported in every country north of the thirty-fifth parallel South, excepting Chile. Black dots represent imported cases.

\* From the Division of Pediatrics, Stanford University Medical School.

1. Migone, L. E.: Un cas de kala-azar à Asunción (Paraguay), *Bull. Soc. de path. exotique* 6:3 (Feb. 12) 1913.

2. Talbot, F. B., and Lyon, A. B.: Kala-Azar in a Child (the First American Case), *Am. J. Dis. Child.* 16:154 (Sept.) 1918.

3. Spencer, R. D.: A Case of Oriental Sore (of Italian Origin) Encountered in the United States, *J. A. M. A.* 76:1494 (May 28) 1921. Smith, D. K.: Oriental Sore: Report of Four Cases, *Arch. Dermat. & Syph.* 5:69 (Jan.) 1922. Fox, H.: Two Cases of Oriental Sore (Cutaneous Leishmaniasis), *New York M. J.* 116:365 (Oct. 4) 1922.

4. Bari, a province in southern Italy bordering on the Adriatic, is shown on Laveran's map (*Leishmanioses*, p. 69) as one of the places where kala-azar has been found.



and bovine, was negative. The changes in the blood picture while the child was under treatment and observation are shown in the accompanying table.

*Diagnosis.*—At the time of admission, leukemia, malaria and Gaucher spleen were thought to be the strongest probabilities, with syphilis and tuberculosis as possibilities. Leukemia was ruled out by the blood picture; against Gaucher spleen were the low erythrocyte count, the presence of fever and jaundice, the absence of conjunctival thickenings, characteristic pigmentation and epistaxis; against malaria were the absence of plasmodia from the blood and the failure of quinin to affect the fever; while against syphilis was the negative Wassermann reaction, the absence of any of the usual signs of syphilis, and in addition the size of the spleen, which was much larger than is seen—with possible rare exceptions—in syphilis. Kala-azar was discussed at ward rounds soon after the child was admitted. We were familiar with the fact that in Italy the so-called infantile splenic anemia had been found actually to be infantile kala-azar. We inquired of the mother, who unfortunately did not speak English fluently, as to the child's nativity. Her answer that the child had always lived in San Francisco misled us, and long delayed the establishment of the diagnosis. It was only much later that we found her statement to be incorrect and that the child had actually lived the first seventeen months of its life in a district of Italy where kala-azar is endemic.

The diagnosis of kala-azar having been established, July 20, by splenic puncture, intravenous injections of antimony and potassium tartrate were instituted on the next day. At this time the child was extremely pale and asthenic. Beginning with 10 mg., the doses were cautiously increased to 100 mg., so that at the time of the last injection, October 26, thirty-three injections to a total of 1,786 mg. (27½ grains) had been given. A definite response to the drug was evident within a few days in lowering of the fever and improved appetite and strength. Lessening of the size of the spleen and gain in weight were noted about two weeks later. Ferric cacodylate was again given from August 12 to September 2, and was accompanied by a marked improvement in the blood picture. By September 25 the child was so far recovered that she could be discharged from the hospital. At this time the leukopenia had given place to a white count of 11,525, eosinophils had reappeared, and the red cells had increased to 4,470,000, and the hemoglobin to 68 per cent. She was observed at the Stanford Children's Clinic twice a week thereafter. At the visit of October 26 she weighed 30 pounds (13.6 kg.), had an excellent color and was strong and active, but the spleen, though softer, was still nearly at the umbilicus, 10 cm. below the costal margin in the midclavicular line. Its mass was perhaps a little more than one half of its maximum. The injections were discontinued at that time because of vomiting. November 21, the spleen could no longer

BLOOD COUNTS

Date	R. B. C.	Hgb.	C. I.	W. B. C.	Pol.	Lym.	L. M.	Tr.	Eos. Bas.	R. B. C. W. B. C.	Comment
5/ 6/22	2,350,000	40 T	0.85	3,400	749	2,620	34	0	0	690	Poikilocytosis, anisocytosis
5/11/22	2,220,000	....	....	3,380	372	2,946	34	34	0	660	Poik., aniso.
Quinin sulphate, 20 grains, May 12-15											
5/20/22	2,260,000	40 T	0.89	3,900	468	3,393	0	39	0	580	Poik., aniso.
Ferric cacodylate, May 23-June 1											
5/26/22	2,900,000	40 T	0.67	4,100	943	2,296	820	41	0	710	Poik., aniso.
5/31/22	3,460,000	38 S	0.55	6,650	1,749	4,240	665	0	0	520	
6/ 6/22	3,660,000	45 T	0.62	8,250	825	5,775	990	660	0	440	Poik., aniso., polychr., 2 normobl. (at Lane Hospital)
Patient transferred to San Francisco Hospital, June 7											
6/ 7/22	4,110,000	40 D	0.49	9,000	630	7,020	450	0	0	460	(At S. F. Hospital)
Quinin sulphate, 90 grains, July 11-15											
7/18/22	.....	35	....	6,800	2,040	3,740	1,020				
Antimony and potassium tartrate begun, July 21. Transfusion, 100 c.c. of whole blood, Aug. 3											
8/ 4/22	2,470,000	40	0.81	3,900	.....	.....	...	...	...	630	
Ferric cacodylate, Aug. 12-Sept. 2											
8/24/22	3,630,000	65	0.90	4,600	1,334	2,990	276				
9/18/22	3,160,000	54									
9/25/22	4,470,000	68 T	0.76	11,525	1,844	8,874	0	346	461 E	390	

Splenic puncture would also have been made much earlier had not one of us seen the procedure end fatally some years before, and been averse to accepting the risk. The patient was transferred from Lane Hospital to the San Francisco City and County Hospital, June 7, for financial reasons, without an established diagnosis. In July the correct story of the child's nativity was obtained and kala-azar seemed so probable that the risks were accepted and the spleen was punctured. No ill effects ensued. The smears, examined in the laboratory of pediatrics at Stanford University Medical School, showed after considerable search a number of typical Leishman-Donovan bodies, from which the accompanying photomicrographs and drawings were taken.

*Treatment and Course.*—The jaundice disappeared spontaneously three days after admission, when the child's extreme pallor, hitherto masked, became evident. Quinin sulphate was given from May 12 to 15 to a total dosage of 1.3 gm. (20 grains), without effect on the temperature, size of the spleen or general condition. The jaundice disappeared on the third day and did not recur. May 20, the right tympanic membrane was found to be bulging, and paracentesis released an abundant yellowish pus, again without effect on the temperature or general condition. Injection of ferric cacodylate daily in 1 c.c. doses from May 23 to June 1 was accompanied by a progressive increase in the red cells but not in the hemoglobin; a slight improvement in the general condition and a somewhat lower temperature also ensued, but without change in the size of the spleen. In the San Francisco Hospital, liquor potassii arsenitis (Fowler's solution) was given without notable effect. Another course of quinin, 90 grains between July 11 and 15, was also without

effect. While she cannot be considered as cured and will be closely watched for recrudescence of symptoms with a view to further medication, her present condition is excellent.

*CASE 2.—Oriental sore (H. K. F.). History.*—R. H., an Armenian boy, born, Dec. 13, 1916, was admitted to the children's clinic, July 5, 1922, because of sores on the left buttock. During the Turkish persecution, the family left Armenia, reaching Persia in July, 1918. In 1921 they settled near Bagdad, where "Bagdad boil" was very common; but the father, who was an intelligent and educated man, did not know of any direct exposure, or of any exposure to bedbugs, fleas, lice or other biting insects. He stated that the disease was ascribed to eating dates. The family emigrated to the United States in April, 1922, passing inspection without incident. The child had been free from previous illnesses, excepting the immediate effects of severe privation during 1918, and otitis media lasting from 1918 to 1920, without subsequent recurrence. The present illness began in October, 1921, while the child was in Mesopotamia, as a small, indurated, red papule about the size of a pea, on the left buttock, which became gradually larger but apparently did not ulcerate until after April, 1922. The ulcer had gradually increased in extent, and recently two smaller papules had appeared near the original lesion. There had been no constitutional symptoms, and the lesion itself had caused no great discomfort.

*Physical Examination.*—This was essentially negative except for the lesions on the left buttock. The ulcer was roughly circular, about 1½ inches (4 cm.) in diameter, with irregular, ragged, sharply excavated edge and the floor occupied by granulations from which there was very little discharge. Just to the right of the upper end of the internatal fold was a



papule about  $\frac{1}{4}$  inch (7 mm.) in diameter covered with a silvery gray crust. Another small lesion, apparently pustular, was equidistant from the other two. The blood count was essentially normal. Cultures and inoculations (white mouse and dog) of scrapings from the lesions were negative.

The father's statement that the child had a "Bagdad boil" gave the clue to the diagnosis, and scrapings from the three lesions, stained with Wright's stain, revealed after a considerable search a moderate number of characteristic organisms.

**Treatment and Result.**—A 2 per cent. ointment of antimony and potassium tartrate (tartar emetic), as recommended by Manson, showed no prompt curative effect in this case. After a week's application a number of pustules appeared, due no doubt to the drug itself, and complicated the treatment. The lesion rapidly healed after a mixture, prescribed in the skin clinic, was applied. This mixture consisted of creosote, 0.3 c.c.; ointment of mercuric nitrate, 4 gm., and sufficient petrolatum to make 30 gm. By October 7, the lesions were completely healed. The site of the original ulcer was marked by a silvery contracting scar, and of the smaller lesions and pustules by slightly pigmented spots.

#### VARIETIES OF LEISHMANIA INFECTION

These may be separated into two groups, the systemic and the cutaneous. It is highly probable that these are due to different organisms having a morphologic resemblance (*Leishmania donovani* and *Leishmania tropica*). Not only does kala-azar, the systemic infection, show differences of geographic distribution and of other phases of epidemiology, but at least one case has been described in which a single individual contracted both diseases at different times, thus demonstrating lack of

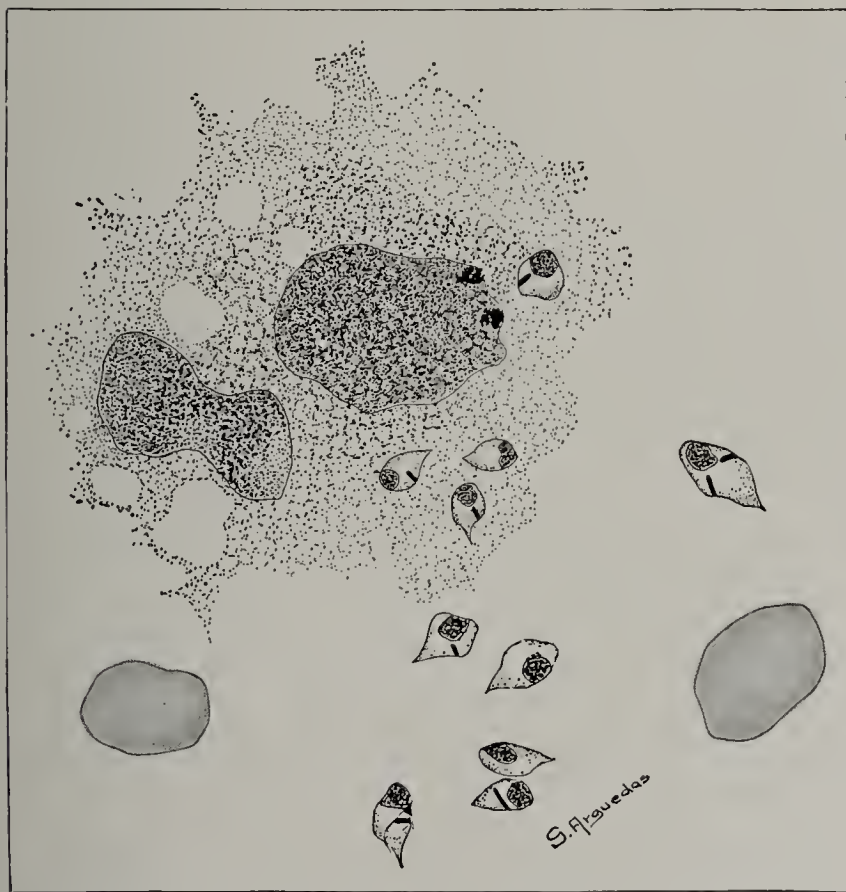


Fig. 2 (Case 1).—Kala-azar: smear from splenic pulp, free forms and cell inclusions.

cross immunization. There is, moreover, a cutaneous form of kala-azar, recently described by Brahmachari<sup>5</sup> occurring in persons incompletely cured of the ordinary form, which does not resemble oriental sore in any respect, and some cases of oriental sore and espundia have systemic symptoms which are not those of kala-azar.

5. Brahmachari, U. N.: A New Form of Cutaneous Leishmaniasis, Indian M. Gaz. 57:125 (April) 1922.

Oriental sore of the Old World and the cutaneous disease of South America (espundia, leishmania americana, and the like) differ in severity and in the tissues commonly attacked, and may be either different diseases or different varieties of the same disease. The former is characterized by the tendency of the lesions to be single or few in number, remaining discrete and

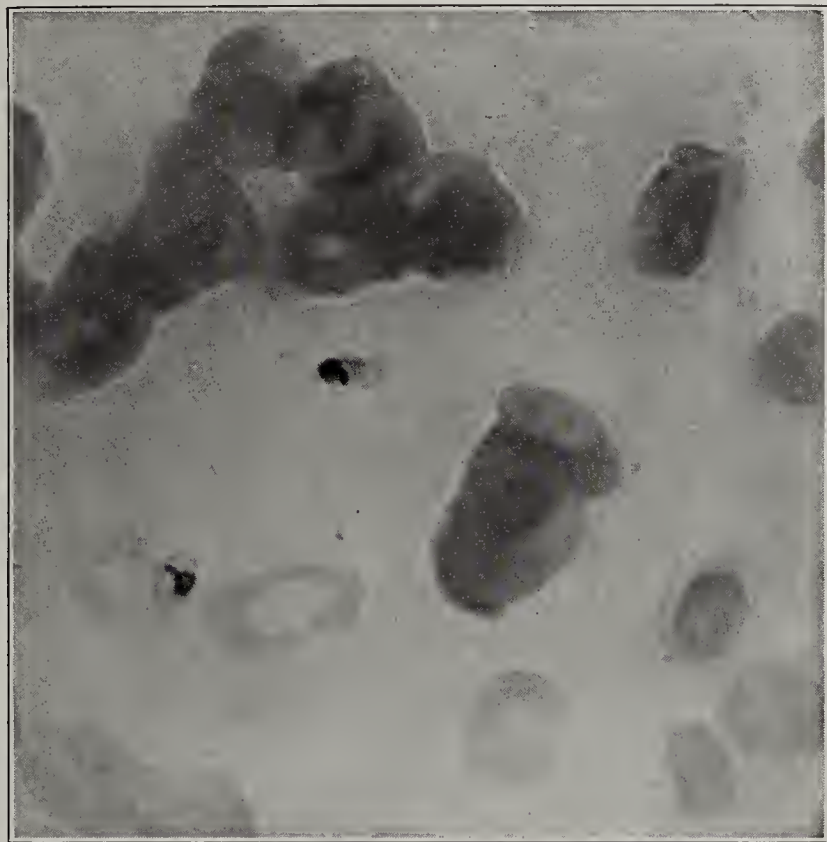


Fig. 3 (Case 1).—Kala-azar: smear from splenic pulp; two Leishman-Donovan bodies, with trophonucleus and blepharoplast.

rarely attacking the mucous membranes; the latter shows a multiplicity of lesions which frequently attack the mucous surfaces, particularly of the nose and lips.

#### GEOGRAPHIC DISTRIBUTION

The accompanying map (Fig. 1), compiled from various sources—largely from Laveran's<sup>6</sup> monograph—shows roughly the regions of the earth where Leishman infections have been found to exist endemically. It will be seen that kala-azar is limited at present to the Old World (excepting three imported cases in the New) between latitudes 10° N. and about 44° N. The three chief centers are (1) the Ganges basin and Madras in India; (2) China between the Yang-tse River, Peking and the Yellow Sea, and (3) the Mediterranean littoral. The great endemic region of oriental sore extends from the eastern shores of the Mediterranean eastward to the Persian Gulf, and thence eastward as far as Delhi in northwestern India. Probably secondary to the Syrian focus are the infected areas on the shores of the Red Sea, and possibly those of southern Italy and Sicily and those of northern Africa in Tunis and Algeria and Morocco. Infected areas also exist in the valley of the Niger not far from the equator. In South America the distribution is very wide, probably involving most of the continent east of the Andes between Panama and latitude 35° S. Large portions of the Amazon valley, of the Guianas, of northern Argentina, and Paraguay are known to be infected; also certain parts of the coastal regions; while cases have been reported from Colombia, Ecuador, Peru, Venezuela and Uruguay. In North

6. Laveran, A.: Leishmanioses, Paris, Masson et Cie, 1917.



America the disease is endemic in Yucatan, and it seems unlikely that Central America has entirely escaped. It is seen, therefore, that in the Old World, oriental sore occurs between  $5^{\circ}$  N. and about  $43^{\circ}$  N., while in the New World it occurs between about  $35^{\circ}$  S. and  $22^{\circ}$  N. Of the imported cases of kala-azar in the New World, one was reported by Migone<sup>1</sup> from Asuncion, Paraguay, in an Italian adult; one from Boston by Talbot and Lyon<sup>2</sup> in a Greek child, and the case here reported from San Francisco, in an Italian. All the cases of oriental sore in the United States and Canada with one exception have come from the Old World, chiefly from Mesopotamia. MacEwen<sup>7</sup> has reported one case, observed in Chicago, originating in South America. It should not be forgotten that from the first American case Wright<sup>8</sup> described and established the morphology of the infecting organism.

#### MODE OF TRANSMISSION

It is probable, though not conclusively proved by inoculation, that the bedbug is the chief if not the only transmitting agent of kala-azar. A recent study of the insect problem by Patton,<sup>9</sup> to which the reader is referred for the details, shows the reasons on which this belief is founded. Adie<sup>10</sup> has recently found the organisms swarming in a bedbug caught in the bed of a patient suspected of kala-azar. It should be noted that Patton believes that the disease is not caused by the bite of the insect but only when it is crushed on the skin, thus freeing the organisms inhabiting the intestine, which then enter the human host through small abrasions, such as might be caused by the insect's proboscis. If this is the case, it would be possible

for one bug to communicate but one case of the disease. This, together with the probability that not more than 5 per cent. of bedbugs coming in contact with kala-azar patients become infected, would explain the very slow spread of epidemics. The natural mode of transmission of oriental sore is still unexplained. Fleas, bedbugs, flies and mosquitoes have all been blamed, but the case has not been proved. Patton incriminates the bedbug, and Wenyon the mosquito. Earlier work pointing to the dog-flea as the carrier has not been confirmed.

Manson<sup>11</sup> states that the most probable insect carrier is some species of *Phlebotomus*.

#### THE MICRO-ORGANISM

In its commonest form, the organism as obtained from the spleen or curettings from the sore is round

or oval, sometimes pointed at one end, usually from 2 to 3 microns in width and from 4 to 5 microns in length. It has an eccentric nucleus (trophonucleus) and a smaller, rodlike, chromatin body (blepharoplast) at or near the periphery of the trophonucleus usually directed radially to the latter (Figs. 2, 3 and 4). With Wright's stain the protoplasm stains a faint blue, the nuclear material a dark blue. Occasionally a small additional granule of nuclear material—the kinetonucleus—can be seen near the trophonucleus. In smears from both diseases large mononuclear phagocytes can be found containing several—occasionally a great many—Leishman-Donovan bodies, sometimes apparently in process of disintegration. Dividing forms are also found, containing several typical nuclear arrangements but with the protoplasm not yet segmented. The flagellate forms, found in cultures and in insects, do not occur in the human lesions.

#### DIAGNOSIS

In answer to the question "Is there a common form of chronic splenomegaly in tropical or subtropical countries distinct from kala-azar and chronic malaria?" Rogers<sup>12</sup> says:

Personally, I came to the conclusion that malaria and kala-azar sufficiently account for all the cases. . . . It is of interest to note in this connection that the so-called Banti's disease has been mainly met with in areas in which infantile kala-azar exists. It has been shown also to affect adults, while in at least one museum specimen of a spleen removed for Banti's disease a *abundant* kala-azar parasites were subsequently found.

Clinically, the disease is characterized by an extremely irregular fever (Fig. 5), with two or more marked remissions or intermissions occurring on

the same day (though this does not occur every day), a very large spleen and a considerably enlarged liver, a very marked leukopenia and a considerable reduction in the red cells. The patient is not benefited by quinin. Such symptoms and signs occurring in a patient who has come from the Mediterranean or other focus of infection justify puncture of the spleen, which rarely fails to show Leishman-Donovan bodies when kala-azar is present. It is of interest to note that the true nature of infantile splenic anemia of the Mediterranean was discovered by this means not much more than a decade ago. In view of the present etiologic obscurity of the conditions occasionally encountered in this country and labeled Banti's disease or splenic anemia, it might be well to investigate more generally the contents of smears of the spleen pulp. Splenic puncture should be cautiously done, a rather small needle, inserted obliquely, being used, and the relative respiratory movement of the spleen and the abdominal wall being prevented by manual pressure.



Fig. 4 (Case 2).—Oriental sore: smear from scrapings; nineteen Leishman-Donovan bodies in one large mononuclear phagocyte.

7. MacEwen, E. L.: Oriental Sore in the Americas, with Report of a Case, *J. Cutan. Dis.* **32**: 275, 1914.

8. Wright, J. H.: Protozoa in a Case of Tropical Ulcer, *J. M. Res.* **5**: 472-482 (Dec.) 1903.

9. Patton, W. S.: Some Reflections on the Kala-azar and Oriental Sore Problems, *Indian J. M. Res.* **9**: 496 (Jan.) 1922.

10. Adie, H. A.: Telegram, *Indian J. M. Res.* **9**, opp. p. 405, 1921-1922.

11. Manson: *Tropical Diseases*, Ed. 7, New York, Cassel & Co., 1921.

12. Rogers, Leonard: *Fevers in the Tropics*, Oxford Med. Pub. London, Ed. 3, Section "Kala-Azar (Indian and Mediterranean or Infantile Forms)," pp. 1-58. To this article is appended a bibliography extending to 1918.



Manson's injunction to use a perfectly dry needle and syringe is essential to prevent disintegration of the parasites. Napier<sup>13</sup> has recently advocated a test for kala-azar which may be of some diagnostic value:

To 1 c.c. of clear (not inactivated) serum from the patient in a test tube one-half inch in diameter, one drop of liquor formaldehydi is added. This is well shaken and kept at room temperature. A strong positive test is present when the serum "sets" in from one to two minutes and becomes opaque in from three to twenty minutes. In children the serum does not become so solid, and any degree of opacity is regarded as positive. In 147 out of 150 cases of enlarged spleen, splenic puncture and the formaldehyd test corresponded. In two of the ninety-one cases of kala-azar in the series, the test was negative. In one case spleen puncture was negative and the test positive; but this was probably a case of kala-azar, because it improved markedly on tartar emetic treatment.

Rogers lays great stress on the diagnostic importance of the leukocyte: erythrocyte ratio. When this is 1:1,500 or less, kala-azar is almost certainly present. In our case the lowest ratio was only 1:710. The differential count shows a relative lymphocytosis, with an increased percentage of large mononuclears and transitionals, and an absence of eosinophils.

In tropical countries, oriental sore has to be differentiated mainly from blastomycosis, desert sore (cutaneous diphtheria), tropical ulcer and tertiary cutaneous syphilis. Nonsyphilitic, granulomatous ulcers occurring in persons who have recently come from infected areas, especially Asia Minor and South America, should be regarded as due to *Leishmania* until proved otherwise. Though most common on the exposed parts, they may, as in our case, occur in the covered parts.

#### TREATMENT

Antimony is probably a true specific. It is still most commonly used as tartar emetic, but without doubt research will discover new combinations that are more effective and less toxic. Intravenous injections of tartar emetic are, however, still standard treatment. A 2 per cent. solution, freshly prepared, in distilled water is generally used, and the dose is from one-half grain to  $1\frac{3}{4}$  grains (32 to 114 mg.). The largest dose that can be tolerated is said by Manson to be 2 grains (130 mg.). According to Rogers,<sup>12</sup> the dose is approximately 2 centigrams for each 10 pounds (4.5 kg.) of body weight. Our own patient, a child, tolerated well the larger dose of 100 mg., repeatedly. The usual practice is to repeat the injections about twice a week until fever has been absent for two months, unless symptoms of intolerance—usually vomiting—occur. Arsenic appears to have some value for the anemia. Intravenous injections of tartar emetic are also regarded as specific for oriental sore. A lanolin ointment of the same drug, in from 2 to 15 per cent. strength, is also recommended, but did not help our

patient. Many other medicaments have had their advocates. The roentgen ray, freezing with ether or carbon dioxid snow, exposure to sunlight and excision have all been used with apparent success. The lesions have a strong tendency to heal spontaneously after from three to twelve months.

#### CONCLUSION

It is urged that medical inspectors of immigrants keep a sharp watch for leishmaniasis. There is a definite possibility that the cutaneous disease at least may become implanted in our soil. Darling<sup>14</sup> has expressed the belief that it may already be lodged in the southern part of the United States and that it may become endemic wherever the average annual temperature is 17.6 C. (63.7 F.) or more and the average winter temperature not lower than 6.3 C. (43.3 F.). Such conditions obtain, of course, in many parts of the United States. If the bedbug is the insect host there are large areas of this country where it can be found, and we have no lack of the other insects that have been incriminated. The latitudes within which the disease occurs elsewhere include more than two thirds of the United States. The danger of kala-azar, though perhaps actually more remote, is theoretically no less.

In the preparation of this paper the treatises of

Rogers and of Manson, and Laveran's monograph have been freely consulted. While the map has been largely compiled from Laveran's book, many additions to his data have been made from later reports, particularly from South America,

where cutaneous leishmaniasis appears to be extraordinarily widespread. We have not quoted all the references, as they would occupy more space than is at our disposal. It perhaps need not be explained that the shaded outlines in the map do not represent exact limits of distribution.

Acknowledgment is made to Dr. Harry A. Wyckoff, who examined specimens from the oriental sore and found the Leishman-Donovan bodies in them; to Dr. E. C. Dickson who made cultures and animal inoculations from the same case, and to Mr. Gustavo Arguedas, who made the camera lucida drawings that accompany the text.

14. Darling, S. T.: Oriental Sore, *J. Cutan. Dis.* **29**: 617, 1911.

13. Napier, L. E.: A New Serum Test for Kala-Azar, *Indian J. M. Res.* **9**: 496, 1921-1922.

**Child Welfare in Peru.**—Child welfare work in Peru, states Dr. C. E. Paz Soldán in his report at the Third American Child Welfare Congress, really began with the foundation at the beginning of the seventeenth century of the foundling asylum of Nuestra Señora de Atocha at Lima. In 1659, a school for orphan and foundling girls was opened. The Office of Public Welfare, in being organized on June 30, 1826, was placed in charge of orphan children. The first maternity was organized in 1826 in Lima, thanks to the efforts of a prominent physician and statesman, H. Unanue, the pioneer of public health work in Peru. Public Welfare Societies date back to 1834. At present, there are fifty-six with an annual appropriation of £375,000, of which about £80,000 are spent on child welfare. At the Lima Maternity, 2,066 infants were born in 1921, and over 4,229 children were cared for during the same year at hospitals and dispensaries.







these waves resemble ventricular extrasystoles in appearance. They are due to a lesion interrupting one of the main right or left branches of the auriculoventricular bundle<sup>4</sup> and are usually associated with a widespread myocardial fibrosis. The curves of the figure are not typical, but are distinctly of this type, suggesting an almost complete loss of function of the right branch of the bundle. Figure 3 shows abnormalities which have been associated with so-called "arborization block."<sup>5</sup> The typical features of the ventricular waves are the wide and notched QRS

notching of the QRS group which is considered significant.<sup>3</sup> Figure 6 shows another form of abnormality of the ventricular waves in that they are all of very small size, and serves as another illustration of a downward T wave in Lead 1. These various types of electrocardiographic abnormality have been considered to be associated with abnormality of the ventricular muscle<sup>7</sup> but the evidence for this is only of a circumstantial character. It has been our hope to contribute toward a settlement of the association of ventricular muscle disease

CLINICAL DIAGNOSIS, ELECTROCARDIOGRAM AND PATHOLOGIC FINDINGS IN CASES STUDIED

Case	Diagnosis	Ventricular Waves	Ventricular Muscle and Coronary Arteries
1	Chronic interstitial nephritis; chronic arteriosclerosis	Borderline R. V. P.; downward T wave in all leads (digitalis)	Heart enlarged, 600 gm.; slight coronary atheroma; muscle normal
2	Aortic stenosis and regurgitation; mitral stenosis; auricular fibrillation; tertiary syphilis	Borderline L. V. P.; downward T wave in all leads (digitalis)	Heart enlarged, 540 gm.; coronaries markedly thickened and calcified, no narrowing or occlusion; muscle normal except for slight fibrous replacement in the left portion of the interventricular septum
3	Rheumatic mitral stenosis and regurgitation; heart block	Slight L. V. P.	Heart large, 425 gm.; coronaries show moderate atheroma, no narrowing; muscle normal
4	Rheumatic aortic regurgitation; mitral regurgitation and stenosis; acute pericarditis with adhesions	Normal except QRS = 0.12 second	Heart greatly enlarged, pericardium adherent in many places; coronaries normal; muscle normal except for slight invasion of the inflammatory process from pericardium
5	Coronary thrombosis; chronic arteriosclerosis	R. V. P.; T wave downward, Leads 2 and 3 and in Lead 3, with an upward convexity before the downward peak (Figure 4)	Heart large, 500 gm.; coronaries thickened, lumen of anterior descending branch occluded by thrombus at its first main division; large pale focus on posterior surface of left ventricle, where fibrous replacement was the predominant feature in sections; both here and in the lower part of the septum, especially on the left side, areas of necrosis of the muscle with the usual accompanying inflammatory reaction; muscle of right ventricle normal except for slight increase of interstitial tissue
6	Chronic arteriosclerosis; coronary artery disease; chronic myocarditis	Borderline L. V. P.; Small QRS excursions, R = 6 mm.; downward T wave in Leads 1 and 2	Heart much enlarged, 875 gm.; endocardium appears normal; wall of left ventricle thinned and has scattered grey areas; coronaries diseased and have calcareous deposits; left artery especially involved and for 3 cm. almost obliterated; marked increase of interstitial fibrous tissue and some fibrous replacement; right ventricle has only increase of interstitial tissue
7	Chronic arteriosclerosis; chronic myocarditis	All waves very small; downward T wave, Leads 1 and 2 (Figure 6)	Heart much enlarged, surface fat abnormally widespread and thick and left ventricular muscle somewhat thinned; coronaries markedly thickened and calcified, and narrowed throughout but no occlusion; considerable fibrous tissue replacement in left ventricle, less in right ventricle, and in septum no replacement, but moderate increase of interstitial fibrous tissue
8	Chronic arteriosclerosis; chronic myocarditis; auricular fibrillation	Marked L. V. P.; notched QRS group; downward T wave in Lead 1	Heart markedly enlarged, 640 gm.; left ventricle has numerous small areas of fibrosis, and at apex a thinned, fibrous, partly calcified area; patchy sclerosis of the endocardium, especially at apical part of left side of septum; coronaries show marked atheroma with narrowing, especially in anterior descending branch of left coronary, which was almost obliterated; muscle has marked increase of interstitial fibrous tissue, no fibrous replacement except in area at apex of left ventricle; right ventricle has only slight change
9	Chronic arteriosclerosis; chronic interstitial nephritis	Marked L. V. P.; notched QRS group; downward T wave, Leads 1 and 2 (Figure 5)	Heart much enlarged, 740 gm.; endocardium of both ventricles thickened, especially on septal surface of left ventricle; coronaries have extensive atheromatous plaques, little thickening, no occlusion; muscle shows diffuse but only slight increase of interstitial fibrous tissue; septal endocardium of left ventricle much thickened
10	Chronic arteriosclerosis; chronic interstitial nephritis; aortitis; auricular fibrillation	Wide QRS group; notched QRS group; curve suggests partial lesion of right branch A-V bundle (Figure 2)	Heart much enlarged, 575 gm.; left ventricle thinned toward apex; endocardium of right ventricle thickened in region between anterior and posterior papillary muscles; coronaries stiffened and tortuous, no occlusion; muscle in left ventricle has numerous dense patches of fibrous tissue replacement, elsewhere a moderate to marked increase of the interstitial fibrous tissue
11	Rheumatic mitral stenosis; mitral regurgitation	Small waves; wide QRS group; notched QRS group; downward T wave in Leads 2 and 3 (Figure 3)	Heart large, 475 gm.; muscle and endocardium appear normal except for diseased mitral valve; coronaries little or not at all thickened, slight atheroma, no narrowing; muscle has considerable fibrous tissue replacement, especially marked in the left ventricle but not accentuated in subendocardial muscle layers

group of small excursions and the T wave directed opposite to the chief deflection of QRS. Figure 4 has a peculiar, sharply downward curve of the T wave, with an upward convexity of the S-T or R-T interval which has been associated with coronary artery occlusion.<sup>6</sup> Figure 5 has two types of abnormality; the T wave is turned downward in Leads 1 and 2, and there is a

and abnormality of the ventricular waves of the electrocardiogram. We have been able to collect the hearts from eleven bodies of persons whose records had been taken shortly before death,<sup>8</sup> and we have carefully examined the coronary arteries and the ventricular muscle in the gross specimen, and microscopic sections from the muscle. Sections were cut from the lateral wall of each ventricle and from the interventricular septum. They were stained with hematoxylin-eosin

4. Eppinger, H., and Stoerek, O.: Zur Klinik des Elektrokardiogramms. *Ztschr. f. klin. Med.* **71**: 157, 1910.

5. Oppenheimer, B. S., and Rothschild, M. A.: Electrocardiographic Changes Associated with Myocardial Involvement, *J. A. M. A.* **69**: 429 (Aug. 11) 1917.

6. Pardee, H. E. B.: An Electrocardiographic Sign of Coronary Artery Occlusion, *Arch. Int. Med.* **26**: 244 (Aug.) 1920. Herrick, J. B.: Thrombosis of the Coronary Arteries, *J. A. M. A.* **72**: 387 (Feb. 8) 1919.

7. Pardee, H. E. B.: The Diagnosis of Myocardial Disease, New York State J. Med. **21**: 282 (Aug.) 1921.

8. These patients were from the medical services of Dr. Lewis A. Conner and of Dr. William R. Williams, one of them being a private patient of the former.



and with Herxheimer's scarlet R. As a control to our interpretation of these sections, twelve hearts from normal persons who had met sudden death by violence were obtained from the Bellevue morgue and similarly cut and stained. This control series is reported elsewhere.<sup>9</sup>

As a result of this work, we are able to make some very interesting comparisons between the degree and character of disease in the ventricular muscle and the character of the electrical curve obtained. The cases have been tabulated to enable the reader to review them easily; the clinical diagnosis, electrocardiogram and pathologic findings being set down for each patient. It is noteworthy that the pathologic changes were all varying degrees or forms of fibrosis with the exception of the one heart with a recently thrombosed artery.

The first four patients were not considered to have significant abnormalities of the ventricular waves. The downward T wave in Leads 1 and 2 of the first two cases could well be due to the considerable amount of digitalis which both of these patients had received, so it was

infarcted area, presented the peculiarity of the T wave which is often seen in this condition, shown in Figure 4. The waves of Case 11, seen in Figure 3, have the peculiarities attributed to "arborization block" and said to be associated with severe and extensive pathologic changes. The heart did not show these extensive and severe changes, though there was a considerable degree of fibrous replacement, especially marked in the left ventricle. Particularly, it did not show the coronary artery disease or the endocardial thickening which would have been expected. Case 8 closely approximated the pathology associated with "arborization block," but did not show the typical electrocardiographic changes. It presented other abnormalities, however.

Case 10, with ventricular waves suggesting a partial lesion of the right branch of the auriculoventricular bundle (Fig. 2), presented a markedly pathologic muscle condition, and, in addition, a thickening of the endocardium of the right ventricle in the area where the right bundle branch comes to lie beneath it. It is unfortunate that we could not attempt to follow

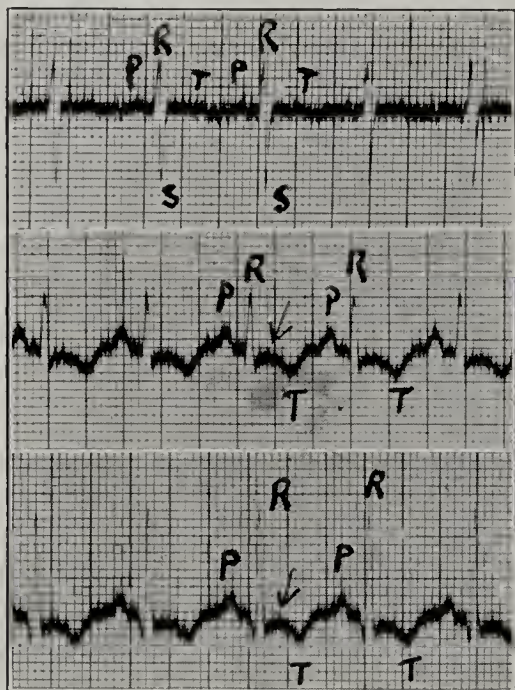


Fig. 4.—Electrocardiogram of Case 5: Right ventricular predominance (R. V. P.) is shown by the large S in Lead 1 and by the fact that R is larger in Lead 3 than in Lead 2. The upward convexity indicated by the arrow just preceding the downward T wave is frequently found after coronary artery occlusion.

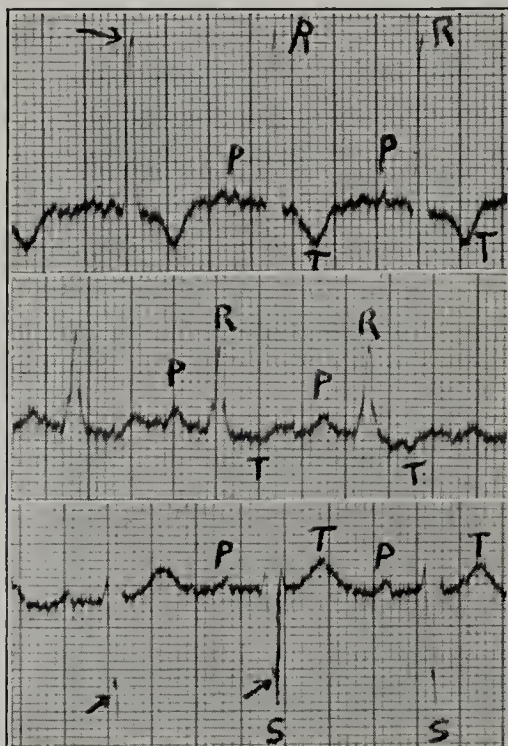


Fig. 5.—Electrocardiogram of Case 9: Notching of the QRS group is indicated by the arrows, and the abnormal downward T wave in Leads 1 and 2 is plainly seen. Left ventricular predominance (L. V. P.) is shown by the large S in Lead 3 and the fact that R is larger in Lead 1 than in Lead 2.

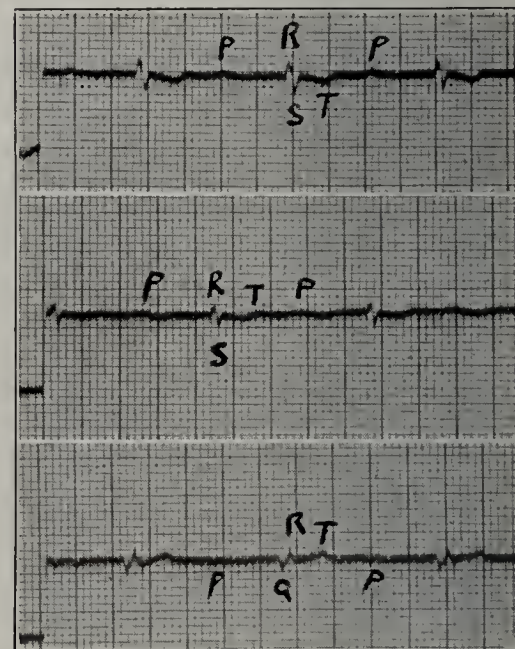


Fig. 6.—Electrocardiogram of Case 7: Prolonged auriculoventricular conduction time is evident (P R = 0.40 second)—a low grade of heart block. Note the small size of the QRS and T waves; also the downward direction of T in Lead 1. The step-like movement at the left end of each lead is due to the application of 1 millivolt.

not felt that this abnormality of the curve should be ascribed to muscle disease.<sup>10</sup> Of these four patients, three had normal ventricular muscle and but slight changes in the coronary arteries. The other (Case 2) had marked thickening and calcification of the coronaries and a slight localized abnormality of the muscle of the left side of the septum.

Cases 5 to 11 each showed one or more of the significant abnormalities of the ventricular waves, and all proved to have a distinctly abnormal ventricular muscle, though great variety in the extent and character of the disease was found. The electrocardiograms of these seven patients likewise showed a great variety of abnormalities. Case 5, with the recently

the bundle branch tissue in this heart. Case 9 (Fig. 5), with notching of the QRS group and an abnormal downward T wave, showed a marked thickening of the endocardium, but did not have marked changes in the muscle. Cases 6 and 7 presented the feature of small excursions common to their ventricular waves (Fig. 6). In both, there was marked disease of the coronary arteries, with calcification and narrowing and marked muscle changes.

It can be clearly seen, then, that all of these hearts that had given abnormal electrocardiograms showed a distinctly diseased ventricular muscle. The condition of the ventricular muscle in these hearts leads us to feel that the bundle branch tissue, and especially its arborizations, have attracted a disproportionate amount of attention from those attempting to interpret abnormal electrocardiograms. The condition of the general mass of the muscle and the possible relation of this

9. Master, A. M.: Fatty Degeneration of the Heart, Arch. Int. Med., to be published.

10. Cohn, A. E.; Fraser, F. R., and Jamieson, R. A.: The Influence of Digitalis on the T Wave of the Human Electrocardiogram, J. Exper. Med. 21: 593, 1915. It is now a well accepted fact that large doses of digitalis can turn downward an otherwise normal upward T wave.



to the abnormality of the waves has been neglected. It seems likely that disease involving the bundle branch arborizations is capable of changing the ventricular waves, provided it is sufficiently extensive; but then the coincident muscle involvement would also be extensive, for disease only very rarely picks out the specialized conducting tissue, leaving the nearby muscle intact.

#### SUMMARY

The coronary arteries and ventricular muscle of eleven patients dying of heart failure were carefully examined, and it was found that muscle disease occurred but rarely in the absence of disease of the coronaries. The outstanding lesion was always a fibrosis, though it varied much in degree and distribution.

The ventricular waves of the electrocardiogram taken shortly before death were normal in four cases: three of these had normal ventricular muscle and the other had but insignificant changes. The ventricular waves were abnormal in seven cases: one of these hearts had a moderate fibrosis, and the remainder had various sorts of marked abnormality of the ventricular muscle.

Though admitting the small number of our cases, we feel that they strongly suggest that an electrocardiogram with the special abnormalities described will indicate the ventricular muscle diseased to a definite degree, which the microscope, if not the naked eye, can discover, and which might well be expected to interfere with its function. If the ventricular waves do not show any of these special abnormalities, the indication is less clear; but it is likely that the ventricular muscle is normal, or at least affected with but the slightest degree of abnormality.

It seems that ventricular muscle disease is a far more important deduction from the finding of abnormal ventricular waves than has been heretofore considered, so that the clinical importance of abnormal electrocardiograms becomes more apparent. They give us indications of the condition of the ventricular muscle much as the stethoscope gives indications of the condition of the valves, and like the sounds of the stethoscope, the records must be very carefully considered before being used as a basis for diagnosis or prognosis.

74 West Forty-Eighth Street—Mount Sinai Hospital.

**Deaths from Falls.**—During 1921, in New York City, 864 persons died as a result of falls, a ratio of almost 12 per hundred thousand. Of this number, 103 persons were killed by falling from buildings and scaffolds. One hundred and thirty-eight persons were killed by falling from fire escapes and windows. Almost one third of these deaths occurred among children under 5 years of age—in other words among little children who were allowed to go out on fire escapes or to lean out of windows. Burns and scalds are another cause of death numerically important, and here, too, children are the greatest sufferers, almost one half of the deaths from this cause occurring during the first five years of life. Under 5 years of age, boys suffer a higher mortality than girls, because they are more venturesome; but in the next period of life, that is, between the ages of 5 and 14, girls suffer the highest mortality, probably because at this age the boys seek their recreation out of doors, whereas girls are more inclined to play indoors, and also because the latter are called upon to assist in the duties of the home, where opportunities for accidents of this sort are greatest.—*School Health News*, November, 1922.

## Clinical Notes, Suggestions, and New Instruments

### A SELF-RETAINING PALATE RETRACTOR

GEORGE D. WOLF, M.D., NEW YORK

This self-retaining instrument is presented in the interest of direct exposure of the rhinopharynx during operative procedure.



Fig. 1.—Instrument used as self-retaining tongue depressor.



Fig. 2.—Instrument used as palate retractor.

In the center of the upper member of the Jennings mouth gag there is attached a downwardly projecting pin about one-fourth inch long, mounted on a narrow plate brazed across the curve that forms the bite. A groove is milled in



this pin near its end, forming thereby a button-like extremity (Fig. 1 *A*).

The small hook on the handle of the author's self-retaining tongue depressor is properly curved and fenestrated to form a palate retractor (Fig. 1 *B*). In the body of the handle is a series of holes (Fig. 1 *C*) drilled 15 degrees from the perpendicular, and of such diameter as to engage in the groove on the pin described above as part of the mouth gag.

The palate retractor, when so engaged, is self-retaining by reason of the traction exerted by the palate (Fig. 2).

The instrument is obtainable from E. B. Meyrowitz, Inc., 520 Fifth Avenue, New York.

815 Park Avenue.

#### INHALATION OF BARIUM IN SOLUTION

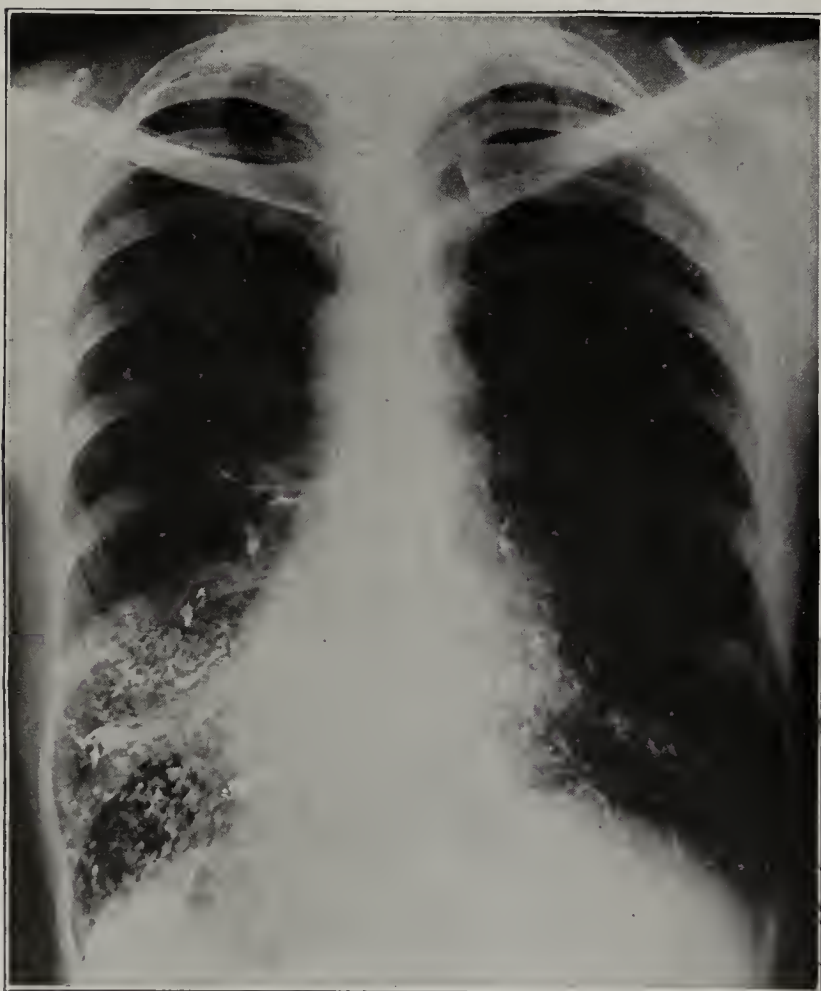
C. R. FISHEL, M.D., TACOMA, WASH.

Miss G. W., aged 46, a schoolteacher, referred by Dr. Broman for complete gastro-intestinal examination, which was negative, stated that five years before she had an abscess at the junction of the esophagus and stomach, and that a cavity still remained which she could wash out by the use of salt water and then regurgitate it.

#### RESULTS OF EXAMINATION

Barium was added to the solution, and she proceeded to wash out the so-called abscess cavity. After one or two unsuccessful attempts she succeeded in getting a liberal amount of the fluid down, which passed directly into the trachea. At the bifurcation, contrary to the usual rule, the greater portion passed into the left bronchus. It passed well out in the smaller bronchi in the lower half of each lung.

The patient showed no more inconvenience to the passage of the fluid into the trachea than she would have shown if



Distribution of barium in bronchi.

it had passed into the esophagus, and insisted on repeating the procedure for the benefit of the referring physician, who had been called to see it.

The patient was examined fluoroscopically daily for several days, very little change being noticed after the first few minutes, during which time the fluid had gravitated toward the base as shown.

The patient returned four months later, in her usual health. The portion in the larger bronchi had been expelled, but a very large percentage still remained unchanged.

Fidelity Building.

#### COMBINATION SEDAN AND AMBULANCE

JOHN B. POTTS, M.D., OMAHA

In many communities where the demand for a regular ambulance is not great, a sedan that has the doors coming together at the center can be converted into an ambulance with very little difficulty. The change is made by removing



Combination sedan and ambulance.

the center post, which is held at the bottom by metal dowels, and at the top by a wing nut. After the post is removed, the larger half of the front seat and the auxiliary seat is taken out, and a board is laid on the floor to make a level surface, on which a carpet is laid. This is done quickly, and requires little or no skill. In a sedan thus converted, the space between the front and rear of the car is sufficiently wide to hold a Bomgardner cot. The foregoing can be furnished by Mr. Pfeiffer of the Pfeiffer Top and Body Corporation, Omaha.

#### COMPLETE ANURIA FOLLOWING A MERCURIC CHLORID DOUCHE; RECOVERY AFTER BILATERAL RENAL DECAPSULATION

GEORGE W. OUTERBRIDGE, M.D., PHILADELPHIA

This case is of interest because of the sudden, intense and protracted symptoms of a profound toxemia, involving the renal, gastro-intestinal and hematopoietic systems, occurring subsequent to a vaginal douche of a small amount of moderately strong mercuric chlorid solution, taken for the purpose of inducing a miscarriage, and because of the ultimate recovery of the patient after numerous threatening complications and an unusually high nitrogen retention figure.

Mrs. V. F., aged 38, a tertipara, being two days overdue, on the afternoon of May 27, 1922, dissolved two mercuric chlorid tablets in a glass of water and used this as a vaginal douche. (Assuming a glass to equal approximately one-half pint, this would make about a 1:250 solution.) Almost immediately she began to have severe burning in the vaginal region, and abdominal cramps, with a chill lasting half an hour, followed by vomiting and diarrhea. She said that she walked the floor in agony all that night. The next day she called a physician, who packed the vagina loosely with gauze. On the afternoon of May 29, the patient was sent to the Abington Hospital, where she was admitted to the isolation ward, as she had been taking care of her children, who were sick with measles.

On admission, the teeth were bad, the gums reddened. The breath was fetid, the tongue dry and splotted. There was excessive secretion of saliva. The heart and lungs were normal. The abdomen was scaphoid; it was not tender;



there was gurgling peristalsis. The external genitalia very much swollen and excoriated; the entire vagina was fiery red except where covered with irregular patches of greenish-gray exudate; there were similar patches on the vaginal portion of the cervix; there was a very foul vaginal discharge; the vagina was entirely anesthetic on examination. The temperature and pulse were normal. Blood examination revealed: hemoglobin, 65 per cent.; erythrocytes, 3,100,000; leukocytes, 14,400. No urine was obtainable for examination, and the patient stated that she had passed practically none all day.

Because of the lapse of forty-eight hours between the use of the douche and admission of the patient to the hospital, it was not felt that calcium sulphid would be of any avail, and she was therefore put on ordinary eliminative treatment, but she responded very poorly, refused nourishment, vomited persistently, and was obviously getting gradually worse.

From admission at 2:30 p. m., May 29, to operation at 7 p. m., May 31, a period of about fifty-two hours, no urine whatever was passed, and repeated catheterizations revealed the bladder absolutely empty. Under gas-oxygen anesthesia, therefore, both kidneys were decapsulated. The right kidney was large, pale and easily delivered; the left was much smaller, deeply congested, and could not be delivered, the parenchyma tearing very easily at the least attempt to grasp it. It was therefore decapsulated in situ. Both capsules were thin, and stripped easily. That night the patient passed 2 ounces of urine, and a total of 8 ounces in the first twenty-four hours after operation. For the next six days the amounts ran from about 6 to 12 ounces in each twenty-four hours; on the eighth day after operation, elimination rose to 18 ounces, on the eleventh day to 30 ounces, and on the twelfth day to 64 ounces. From then on the daily output ranged from 90 to 110 ounces.

A specimen of blood sent to the laboratory, May 31, just before operation, for urea nitrogen estimation was unfortunately not accompanied by a warning that unusually high values should be expected, and the test was therefore made only for a maximum of 80 mg. for each hundred cubic centimeters. This amount was present, but how much more could not be determined. A second estimation, made three days later, however, showed the remarkably high figure of 260 mg. for each hundred cubic centimeters; but since this was taken after at least some elimination had been taking place for two days, it may not represent the highest figure actually reached.

Following operation, the patient was given hot packs and other customary eliminative treatment, to which she responded poorly at first, and somewhat better after a few days. She soon developed an intense gastro-enteritis, marked by very frequent, thin, liquid, brownish or bloody stools, and severe abdominal pain and tenderness. This continued for several days, and then gradually cleared up.

June 7, a typical measles rash appeared, which soon became most intense over the entire body, and ran a typical course, followed by very free desquamation. June 11, the patient began passing blood and clots by the vagina, and aborted the next day. Examination at this time revealed a sloughing of large portions of the vaginal mucosa; but there was some tenderness on palpation, in contradistinction to the complete lack of sensation noted on admission. Ophthalmoscopic examination, June 16, disclosed a mild neuroretinitis. By this time the blood urea nitrogen had fallen to 40 mg.; it rose again, July 1, to 143 mg., and then fell gradually to 60 mg., July 8, and to 12 mg., July 26. At no time did the systolic blood pressure go above 140. One of the kidney incisions healed promptly, but the other suppurated and required daily dressings for some time.

Through the latter half of June the patient appeared to be progressing favorably, but about the end of the month she began to manifest signs of great irritability, became irrational at times, and developed a definite cardiac murmur and a high grade anemia, the blood count having fallen by July 1 to hemoglobin, 25 per cent.; erythrocytes, 1,500,000; leukocytes, 6,000. Approximately the same count was maintained for the next five or six weeks in spite of energetic oral and hypodermic administration of iron and arsenic. July 4, the temperature, which had been about normal, began to go up,

soon reaching about 102 F., where it remained persistently. July 20, the bladder urine showed a pure culture of *B. coli*, and the next day a cystoscopic examination was performed and the ureters catheterized, the urine obtained from each kidney likewise showing *B. coli* infection in pure culture. Each renal pelvis was irrigated with 1 per cent. solution of mercurochrome-220 soluble, and the ureteral catheters were left in place for an hour for drainage. The following day the patient's temperature shot up to 104, but then dropped gradually, and reached normal in five days, remaining there from that time on, save for a brief rise incident to transfusion, August 8.

Because of the persistent anemia, with general rather unfavorable progress of the patient, who refused almost all nourishment at times, and became much emaciated, with dry, scaly skin, and marked prostration, a blood transfusion with her husband's blood was attempted by the citrate method, August 8. The bloods were both typed and matched, both being Type 4, and appearing to be compatible; but after the introduction of a few cubic centimeters a sharp reaction took place, the temperature rising rapidly to 104 and the pulse to 150. For a time the patient's condition seemed critical, but the transfusion was immediately stopped, and atropin and epinephrin were administered hypodermically, and in a few hours she reacted. Her condition gradually improved, and barring minor complications, such as urinary incontinence for a time when lying down, and a superficial abscess in one of the incisions, requiring reopening, August 30, her progress was satisfactory after the middle of August; she took nourishment better, the vaginal mucosa healed without any adhesions or stenosis, and she was discharged, September 6, in fairly good condition. At this time the blood count was still low, however: hemoglobin, 35 per cent.; erythrocytes, 2,300,000; leukocytes, 6,000. The phenolsulphonephthalein elimination at the time of discharge was 35 per cent. in two hours; and culture of the urine disclosed merely a few colonies of staphylococci.

Examination of the patient, December 4, revealed that she was in excellent condition; she looked and felt well, had a good color, had gained rapidly in weight and strength, and was able to do her housework and take care of her children. The blood count was: hemoglobin, 70 per cent.; erythrocytes, 3,730,000; leukocytes, 7,600. Vaginal examination was negative, save that the mucosa in considerable areas appeared very pale, smooth and atrophic. The urine was entirely normal, and showed no albumin, casts or pus.

1927 Spruce Street.

#### DOUBLE UTERUS: CESAREAN SECTION FOR DELIVERY OF PREGNANT RIGHT UTERUS AT TERM

JOHN A. SHOEMAKER, M.D., BEREA, OHIO

Cesarean section is not rare enough to be noteworthy except when it is performed under exceptional circumstances, and when, as the operation of choice, it is attended by success. In the case reported here, its selection and justification are strikingly brought out.

#### REPORT OF CASE

*History and Examination.*—E. W. B., aged 24, a normal appearing white woman of negative family history, who came under observation in July, 1921, was married in April, 1921, and had menstruated in April, but not since. Examination revealed a mass in the culdesac of the pelvis. She was so constipated that an enema was ordered to clean out the rectum. Later examination revealed a double uterus, a double cervix, a fibrous vaginal septum and a pregnant left uterus. For confirmation of these findings, she was referred to an obstetrician, who agreed with the diagnosis of double uterus but did not think she was pregnant. However, a miscarriage of two months' fetus occurred from the left uterus, two days later. She made a good recovery, and an examination in August, 1921, revealed each uterus of normal size, the left perhaps a little larger. Her weight was then 116 pounds (53 kg.). By October, 1921, she was perfectly normal, and menstruated regularly from both uteri.



In January, 1922, the patient reappeared for examination, stating that her last menstruation had occurred, December 6; and, early in February, examination revealed undoubted pregnancy of the right uterus. She was suffering from emesis and had all the classic symptoms of pregnancy. In April, her weight had increased to 126 pounds (57 kg.). The right uterus was enlarging and occupying the right flank. The left uterus remained normal in size. The blood pressure at this time was systolic, 110, diastolic, 50. Urine examination was negative. The pelvic measurements were: intertrochanteric, 35 cm.; interspinal, 30 cm.; intercrystal, 25 cm.; external conjugate, 17 cm.

June 1, the blood pressure was 110, systolic; the weight, 127 pounds (57.7 kg.). The patient was feeling very well. The pregnant uterus was still enlarging to the right flank, the left side of the abdomen being unoccupied. June 29, there was considerable discharge of blood from the right uterus, but a week's rest in bed was sufficient to avert a miscarriage. The fetus was lively. In August, the patient's weight was 135 pounds (61 kg.). Examination was entirely negative so far as untoward symptoms were concerned, and she was referred to a surgeon for confirmation of my opinion that a cesarean section at term should be the operation of choice, as offering the best chance for child and mother. The vaginal septum was so fibrous as to prove an obstruction to labor, and there was no means of telling the thickness of the uterine wall which divided the two uteri. It is well known that a thin wall is not uncommon in a bicornate uterus, and labor possibly would rupture the pregnant uterus.

The consultant advised a cesarean section at term, which was estimated to be from September 4 to 9. He also advised sterilization of the mother after delivery. Accordingly, arrangements were made for the patient to go to the hospital, September 1, for delivery; but, without warning, at 8:30 p. m., August 13, the membranes ruptured and she began to have pain. She was brought to the hospital at 10:30 p. m., and admitted at once to the delivery room, where rectal examination disclosed that labor was in progress, with vigorous pains and three fingers' dilatation. A vertex presentation was found; the fetal heart sounds were strong, with a rate of 130. The patient was shaved for laparotomy.

*Operation* (Dr. Clement).—Ether was administered at 1:45 a. m. Five per cent. iodine in alcohol was employed in preparing the patient for the incision. External examination revealed a right uterus completely filling the right flank and right hypochondrium. An enlarged left uterus could be felt through the abdominal wall, about the size of an orange. A long median incision to the left of the umbilicus was made through the skin and fascia down to the peritoneum, which was lifted and incised. Some serous fluid was found free in the abdomen. The pregnant uterus was pushed from the right to the midline, and incised from the lower uterine segment almost to the cervix. A live baby was quickly delivered, the cord clamped and the placenta extracted. Hemorrhage was slight. The uterus contracted promptly. There were two distinct organs joined together almost as low down as the cervix. Each fundus apparently had a complete wall, and a single tube and ovary to each uterus. The left uterus was soft and evidently hyperplastic. Both tubes were doubled, ligated and cut. Uterine repair was accomplished by four-layer continuous mattress sutures of chromic catgut. The peritoneum was closed with continuous suture. Muscles and fascia were closed with interrupted suture, and the skin was closed with silkworm gut and clips. Anesthesia was begun at 1:45 a. m. The incision was made at 2 o'clock, the baby was born at 2:05, the placenta was delivered at 2:10, and the operation was completed at 2:30. Both mother and baby were in good condition at 3:30 a. m., when the mother awoke from the anesthetic. The infant was a girl, normal, weighing 5 pounds and ten ounces (2,552 gm.).

*Outcome.*—The convalescence was uninterrupted, except for a slight rise in temperature the second day. The clamps were out on the sixth day, and except for some difficulty with the bowels, the period of the patient's stay in the hospital might have been shorter. As it was, a mother who thought her confinement had been easy was removed from the hospital the fourteenth day, with a normal, healthy baby.

#### REPORT OF A CASE OF FUNCTIONAL APHONIA, CURED UNDER GENERAL ANESTHETIC

C. NORMAN HOWARD, M.D., WARSAW, IND.

Mrs. M. T., aged 51, whose nervous system has been below par since her husband committed suicide, a year and a half ago, in January, 1922, contracted influenza. Prior to February 1, she enjoyed the full use of her voice, but that morning she found that she could not talk above a whisper. She ascribed the condition to the influenza. A number of chiropractic treatments were taken, but the voice remained a whisper. For the relief of this condition, she reported, Oct. 30, 1922. The loss of the voice had then persisted continuously for nine months.

Examination of the larynx revealed a slight redness of the posterior fourth of the left vocal cord. There was no paralysis of either cord. Examination revealed that the heart, lungs and kidneys were negative; the Wassermann reaction was negative, and there was no aortic aneurysm or goiter. A diagnosis was made of functional aphonia, also known as hysterical or nervous aphonia.

The patient was informed that there was no paralysis of the cords; that people affected in this way always recovered, and that the voice usually came back suddenly, just as it had left. The next day, she was told that we would put her to sleep and apply medicine to the parts, and that when she woke up she could talk. She was given ether, and, while she was under the anesthetic, the region was painted with 1 per cent. silver nitrate as a local fillip to the parts. In coming out of the anesthetic, and while only partly conscious, she mumbled something above a whisper. She was encouraged to talk louder and asked to count out loud, and did so. She has since then been talking normally.

#### SOME PRACTICAL SURGICAL PATHOLOGIC OBSERVATIONS AND DEDUCTIONS \*

ALBERT C. BRODERS, M.D., ROCHESTER, MINN.

In the practice of surgical pathology, many points of interest are accumulated that cannot be obtained from textbooks. The pathologist, in his application of his self-gained knowledge, may feel that it has been acquired intuitively, while in reality it is the result of long experience. Certain of the following observations are common knowledge; others I believe to be original.

Exophthalmic goiter is almost never associated with primary malignant neoplasia of the thyroid gland.

Calcareous deposits, except in small amounts, are almost never associated with primary malignant neoplasia of the thyroid gland.

Carcinoma of the thyroid is usually smooth and glistening and of a pale pinkish tint. However, not all pale pinkish thyroid tumors are carcinomas.

Calcareous deposits, except in small amount, are almost never intimately associated with malignant neoplasia in any part of the body, because the calcareous material follows a degenerative process, and the malignant neoplasia represents an atypical regenerative process.

When uterine scrapings are examined in the fresh state and are found to be smooth, reddish or brownish, and glistening, the condition is practically always benign. On the other hand, if the scrapings are whitish or grayish and granular, or sometimes resemble brain tissue, the condition is practically always malignant.

If a pathologist receives a mass from an ovary or fallopian tube filled with a whitish putty-like material, a very simple test will show whether the mass is a dermoid cyst, or the end-result of a tuberculous process. If cold water is allowed to run over some of the substance held in the fingers, and it washes off, the condition practically always is tuberculosis; but if the substance sticks to the fingers it is practically always the product of a dermoid cyst. The substance that washes off contains a large amount of calcium carbonate, and that which sticks is made up, for the most part, of sebaceous material.

\* From the Section on Surgical Pathology, Mayo Clinic.



If a careful microscopic examination is made of the walls of the sac that contains the substance that washes off easily, definite evidence of tuberculosis will be demonstrated in most instances. This material is usually found in the fallopian tubes, ovaries, testicles, epididymides, vasa deferentia, kidneys, lymph nodes in various parts of the body, lungs, and sometimes beneath the skin.

If a lymph node is found to be dirty brown on section, the diagnosis is practically always noncaseating tuberculosis. Sometimes a lymphosarcomatous lymph node will have a brownish tinge, but it is pale compared to the noncaseating tuberculous node. The microscopic examination of this type of tuberculosis reveals numerous ill-defined tubercles which contain a large number of epithelioid cells, but very few foreign body giant cells.

It is well known that tuberculous fallopian tubes are practically always open, and gonorrheal tubes are practically always closed. It is also well known that sticking a needle in the little bodies which are often found on the serosa of the fallopian tube will usually indicate whether one is dealing with tuberculosis or simple inflammatory cysts. If the little bodies collapse they are inflammatory cysts, but if they do not they are tuberculous.

Epithelioma is not often found in an eroded cystic cervix or in the cervix of a prolapsed sclerotic uterus.

If a cervix has numerous cysts it is almost certain not to be cancerous, but one should be on the lookout for adenomyoma of the body of the uterus, particularly if the cysts are associated with a polypoid endometrium.

A prolapsed uterus should be examined thoroughly, since fibromyomas are often present that are almost impossible to detect without slicing sections of a specimen with a sharp knife.

A boardlike stomach, a mass or an ulcer in the stomach, associated with white lines on the serosa, is practically always cancerous, as the white lines are the result of cancer cells metastasizing through the lymphatics.

The boardlike or leather-bottle stomach should be searched very carefully for carcinoma, and if none is found the adjacent lymph nodes must be searched, with the chances that the cancer will be located and definitely recognized. The reason cancer is so often hard to find in the leather-bottle stomach is that the cells are squeezed out in such a manner by the excessive amount of fibrous tissue that it is difficult to distinguish them from fibroblasts. I believe there is a condition of linitis plastica, but the diagnosis should not be made until the tissue has been most thoroughly examined for cancer, and even then the diagnosis should be qualified.

So far as we know, the uncomplicated syphilitic stomach is devoid of white lines on the serosa. Microscopically, besides marked fibrosis there is perivascular round-cell or plasma-cell infiltration; foreign body giant cells are found in scant numbers. A mass in the stomach, with white lines on the serosa, could be tuberculous, but tuberculosis of the stomach is such a rare condition that it can practically always be excluded.

MacCarty's rule that a gastric ulcer is malignant when it is 2.5 cm. or more in diameter is a good rule to follow, as the exception is relatively rare.

Multiple ulcers of the stomach, like multiple tumors of the breast, are not so likely to be malignant as are single ulcers of the stomach, or single tumors of the breast. However, this should not be depended on alone: it is safer to make a microscopic examination.

The diagnosis of lymphosarcoma or Hodgkin's disease of a lymph node should be made guardedly in the presence of germ centers, as in these conditions the architecture of the node is usually destroyed.

All blood clots or hematomas, not caused by operation, should be thoroughly examined, as a malignant neoplasm may be encountered that would otherwise be overlooked, particularly if the blood clot or hematoma is in the region of the kidney or testicle. All hemorrhagic masses in the fallopian tubes of women of the child-bearing period should be considered ectopic pregnancies until proved otherwise.

All pyometras should be thoroughly examined, as a carcinoma may be lurking in the background.

All sinuses, abscesses or postoperative wounds that refuse to heal should be examined for tuberculosis or actinomycosis, as the former condition is often found and the latter is not rarely encountered; as a matter of fact, tuberculosis should be kept in mind in the routine of pathologic examinations, as it may be found almost everywhere. The dirty brownish granulation tissue should be selected, as tuberculosis is more likely to be found in this than in the fibrous areas. Tuberculosis and malignant neoplasia should not be regarded as antagonistic, because the two conditions thrive side by side.

Melano-epithelioma is usually easy to diagnose, but is sometimes difficult to distinguish from hemangioma, especially if the endothelial cells of the latter neoplasm have picked up blood pigment, giving them an appearance similar to epithelial cells that contain melanin. If one is confronted with this condition, it is best to test the neoplasm for iron. If it is a melano-epithelioma, it will be iron-free; if it is an hemangioma, it will contain iron. The differentiation of these two neoplasms has a very important bearing on prognosis, as every one knows that melano-epithelioma is very malignant and that hemangioma is benign.

Benign foreign body giant-cell tumors have cells that contain blood pigment, or one or more of the lipoids; it may be necessary sometimes to distinguish these cells from epithelial cells containing melanin.

If a lymph node of the groin is examined and found to be melano-epithelioma, and the clinician cannot find the primary growth, he should be instructed to examine the bottom of the patient's foot, or toes, as an apparently insignificant black mole or black spot may be causing the trouble.

A pathologic diagnosis should be made on what is seen macroscopically and microscopically, and care should be taken not to lean too heavily on the clinical findings lest the diagnosis be biased. For instance, if a surgeon sends in a mass of uterine scrapings on a piece of gauze, it is not necessary for the pathologist to know the age of the patient or whether she has been bleeding or not; the thing for him to do is to make a diagnosis of the tissue that he has in his hand. The most important thing to know is the location of the tissue.

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#### PNEUMONIA FROM INHALATION OF ZINC STEARATE TALCUM POWDER

WILLIAM EDMONDS, M.D., NEBRASKA CITY, NEB.

A child, aged 8 months old, who was given a can of zinc stearate talcum to play with, was heard to cough, drawing the mother's attention. Talcum was found on the child's face and in its mouth. The mother washed out what she could, and then called me. I arrived in a few minutes, Nov. 18, 1922, and gave an emetic, which brought up some powder. The child seemed limp, with shallow respirations, and the pulse ranging about 90. At midnight the condition became rapidly worse. The lungs became congested, breathing was difficult, and the child moaned. The temperature rose to 104.6 and remained there in spite of treatment. High enemas brought gray and whitish discharges. The baby nursed until eighteen hours before the end, which came, November 20. The lungs were congested and filled with liquid. The temperature was 105, the respiration 97 and the pulse 105, according to the nurse's count.

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**Rectal Binder.**—DR. SIDNEY FURST, New York, writes: In *THE JOURNAL*, Dec. 9, 1922, p. 2000, Dr. A. J. Chisholm described a satisfactory rectal binder. A binder that I have used for some time, which I consider good, cheap and easy to obtain, is simply the ordinary jock strap used by athletes. This consists of a girdle and three flaps. The central or broad flap is used to hold firmly the testicles, and the two lateral flaps go over the respective gluteal regions. Now, if the jock strap is reversed, the central flap will cover firmly the rectal region, and hold in place any desired dressing. The jock strap can be had at any store that carries athletic supplies, or at most drug stores. The girdle comes in various sizes. The entire strap is made of elastic material, and will stand several washings.



## New and Nonofficial Remedies

### ANTIBERIBERI VITAMIN CONCENTRATE-METZ

#### Preliminary Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report on the experimental status of Antiberiberi Vitamin Concentrate-Metz.

W. A. PUCKNER, Secretary.

The Metz Laboratories, Incorporated, have requested the acceptance for New and Nonofficial Remedies of Antiberiberi Vitamin Concentrate-Metz. The firm has supplied adequate information in regard to the process whereby the product is obtained, and has presented evidence to show that the potency of the product is controlled by adequate animal tests. The firm, however, has presented no proof to indicate that the product is of value therapeutically in human beings, and hence it cannot be admitted to New and Nonofficial Remedies.

The Metz Laboratories frankly admit that there is no evidence to show that Antiberiberi Vitamin Concentrate-Metz is of value in the treatment of human disease. The firm wishes only to make available to students and investigators of nutrition a product which is claimed to be antineuritic (antiberiberi) when fed to pigeons. It increases the food intake of rats fed on substance deficient in vitamin B and caused increased weight, but not to the same extent as does the vitamin B (according to McCollum's nomenclature). The product is offered without therapeutic claims and no dosage is given excepting for pigeons. It is made available as a scientific article for investigation and trial.

The Council believes that, from a scientific standpoint, Antiberiberi Vitamin Concentrate-Metz is suitable for study, suitable for animal experiments and for controlled experiments on man.

For the preparation of Antiberiberi Vitamin Concentrate-Metz, freshly pressed brewers' yeast (from dark beer) is extracted according to the method described by Casimir Funk (*J. Physiol.* **45**:75, 1912) except that mercuric chlorid is used before, instead of after, the phosphotungstic acid, and that instead of silver nitrate another silver salt is used. The extract is tested on pigeons to determine its power to check and cure avian polyneuritis, and on rats to determine its relative freedom from the fraction which promotes the growth of yeast (Funk and Dubin, *J. Biol. Chem.* **48**:437, 1921). The vitamin extract is diluted with sucrose so that 0.065 gm. (1 grain) shall represent the antineuritic potency of 10 gm. of freshly pressed brewers' yeast. Approximately, the finished preparation contains  $\frac{1}{8}$  grain of the vitamin extract and  $\frac{7}{8}$  grain sucrose.

Antiberiberi Vitamin Concentrate-Metz is marketed in the following forms:

*Antiberiberi Vitamin Concentrate-Metz Powder:* 0.065 gm. (1 grain) represents the antineuritic potency of 10 gm. of freshly pressed brewers' yeast.

*Antiberiberi Vitamin Concentrate-Metz Tablets:* Each tablet represents the antineuritic potency of 10 gm. of freshly pressed brewers' yeast.

*Antiberiberi Vitamin Concentrate-Metz Ampules, 1 c.c.:* an aqueous solution of Antiberiberi Vitamin Concentrate-Metz, containing in 1 c.c. the antineuritic potency of 10 gm. of freshly pressed brewers' yeast. This solution is stated to retain its potency for at least six weeks.

Antiberiberi Vitamin Concentrate-Metz is not claimed to be identical in effect with vitamin B in the sense of McCollum's nomenclature, but rather with the antiberiberi vitamin as first described by Funk (*J. Physiol.* **45**:75, 1912). Funk's attempt was directed to the isolation of a substance that would cure beriberi and particularly its analogue, avian polyneuritis. Subsequent investigators (Hoskins, Osborne, Mendel, McCollum et al.) found that yeast extract and many other food derivatives keep (or maintain) rats, mice and other animals eating and growing if the other components of the diet are adequate. These also prevented and cured avian polyneuritis. The Metz Laboratories claim that the Antiberiberi Vitamin Concentrate-Metz stimulates the growth of rats pronouncedly although not to the same extent as the vitamin B (according to McCollum's nomenclature).

Whether the antineuritic factor is identical with the "yeast effect" (McCollum B factor) in growing rats is debated. Funk claims that the rat factor for growth contains something more than the antineuritic—that is, the conventional yeast B is a mixture, one of which (D) is essential for yeast. This likewise is debated.

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

**DIGITAN** (See New and Nonofficial Remedies, 1922, p. 105).

The following dosage forms have been accepted:

*Digitan Ampules (for Hypodermic Use):* Each contains 16 minims (1 Cc.) of a sterilized solution of digitan equivalent to digitan,  $1\frac{1}{2}$  grains (0.1 Gm.).

*Digitan Solution (for Oral Use):* 1 Cc. contains digitan,  $1\frac{1}{2}$  grains (0.1 Gm.).

## Special Article

### THE CARE AND FEEDING OF INFANTS

(Continued from page 35)

[NOTE.—This is the second of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

#### CONDITIONS TEMPORARILY AFFECTING THE QUANTITY AND QUALITY OF BREAST MILK

In many women the return of the menstrual period is associated with changes in the breast milk. This is especially true of the first menstrual period. In some instances they may occur with each menstruation. They may be both quantitative and qualitative. In cases of simple reduction in the food, the infant will frequently show signs of hunger. At other times, when there are also qualitative changes, colic and indigestion, the latter associated with frequent stools, occurs.

Menstruation is never an indication for weaning, and only rarely should any of the feedings be discontinued at these times, even though they cause minor disturbances in the infant. Disturbances are most frequently seen either before or during the first menstrual period.

The mental condition of the mother may have a direct influence on the milk secretion. These changes are, however, usually only temporary. When the infant is distressed at these times, it may be wise temporarily to remove it from the breast for one or two days, until the mother has recovered from the underlying cause, such as grief, shock, fright or anxiety. Expression should be practiced in the interim.

*Drugs.*—Alkaloids of opium, hyoscyamus, belladonna and similar drugs not infrequently pass into the milk and should therefore never be administered in large quantities to the nursing mother. Belladonna may cause a decrease in milk secretion and should be administered with caution during the period of lactation. Mercury, iodids and the newer salts of arsenic are also



secreted in the milk and may be used to advantage when a syphilitic mother is nursing her infant.

*Contraindications to Nursing.*—Tuberculosis, when progressive or open, is always a contraindication to nursing, because of the danger to the infant and the strain on the mother. With proper precautions, and when the breast is not diseased and human milk is not obtainable from other sources, it may be well to tide a weak infant over its first weeks by expressing the milk from the mother's breasts. It must be boiled before it is used.

Syphilis of the mother, except in freedom from infection on the part of the infant, is not a contraindication. Lack of the symptoms on the part of the mother in congenital syphilis is a very common occurrence; a Wassermann reaction on the mother's blood will usually clear up any doubt.

Any grave constitutional disease in which there is an extraordinary drain on the resources of the body, such as diabetes, heart disease with disturbed compensation, nephritis, exophthalmic goiter, malignant neoplasms, epilepsy and psychoses are contraindications to nursing.

Acute diseases should only in exceptional cases be considered as contraindications to nursing. Only conditions in which there is danger of overburdening the mother and infecting the infant should lead to its removal from the breast.

In acute infections in the mother, such as pneumonia, and the acute contagious diseases, such as scarlet fever, after considering the condition of the mother, one must weigh the danger from exposure to infection of the infant, as against the quality of the artificial food and environment in the individual case.

In the milder contagious diseases, such as measles or mumps, it is true that young breast-fed infants are rarely infected. Pertussis is an exception and has a high mortality in the new-born and young infants, and the infant should under all circumstances be protected from exposure. In the presence of diphtheria, the infant can be immunized with safety.

*Pregnancy.*—Only under exceptional circumstances, such as congenital weakness or illness on the part of the infant, should a mother be called on to prolong lactation after she becomes aware of her condition. First, she should not be called on to undergo the strain of nourishing her infant, the fetus and herself. Secondly, conception rarely occurs during the first months of lactation, the infant thereby having had the benefit of a good start on the breast, and bottle feeding can usually be instituted without great danger.

#### EXAMINATION OF HUMAN MILK

No baby should be deprived of its mother's milk because of the results obtained on chemical analysis. The baby, and not the laboratory, offers the practical test for judging the quality of breast milk. It is well known that the composition of milk, more especially in its fat and to a lesser degree in its protein and sugar content, varies greatly in the same individual, not only from day to day, but also at different periods of the same nursing. An analysis, therefore, to be of value, should be made from a specimen obtained from several expressions during the twenty-four hours, and each specimen should consist of the milk of an entire expression or the middle portion. The latter can be accomplished by allowing the infant to nurse for two

or three minutes before the sample is expressed. A safer method would be to collect samples at all of the regular nursing periods. It is also essential for any conclusion that the total amount of the milk obtained in twenty-four hours be known through weighing the baby before and after each feeding. It is also to be remembered that the quality of the milk cannot be gaged by simple chemical analysis, because of the impossibility of estimating some of its most vital contents. Repeated examination of the milk from different wetnurses secreting about the same average quantities has shown marked variations in the chemical composition, notwithstanding which fact the infants under observation made equally good progress on the different milks. Again, normal chemical averages may be found in milk lacking essentials for the proper growth of the infant.

The average composition of mature breast milk approximates the figures given in Table 1.

TABLE 1.—COMPOSITION OF MATURE BREAST MILK

Reaction.....	Amphoteric or alkaline
Specific gravity.....	From 1.010 to 1.040
Fat .....	3.0 to 4.0 per cent.
Sugar .....	6.0 to 7.0 per cent.
Protein .....	1.5 to 2.0 per cent.
Salts .....	0.2 per cent.
Water .....	86.0 to 88.0 per cent.

On the addition of rennin it clots in fine curds. Oppenheimer<sup>4</sup> says:

In general, variations in quality determined by analysis fall into three types:

1. All elements too high: This type is most frequently found in women who do too little and eat too much and too rich food.
2. Fat and sugar low, proteins high: This type is usually found in women of the poorer classes who are overworked and underfed.
3. Fat and sugar very low, proteins very high: This type is usually found in the highly strung, overeducated and highly civilized women of the larger cities, but may be found in neurotic women of any class or community.

In recent years variations in the nutritional properties of human milk have been shown to be due to its vitamin content. The vitamins of human milk are supplied from the food taken by the mother; if they are not present in sufficient quantities in her food, the milk suffers. The effect of an insufficient amount or absence of these substances is exhibited in the child. Scurvy, for example, in the breast fed has been shown to develop because of the deficiency of the antiscorbutic factor in the mother's food. The development of rickets in the breast fed has also been shown to be due to a deficiency in the mother's diet, reflected in the quality of her milk.

#### THE NURSING PROPER

*Regularity in Nursing.*—The breast that is emptied at definite intervals invariably functions better than does one which is not, as regards not only the quantity, but also the quality of the milk. Thus, regular habits in breast feeding are as essential to milk production as to its digestion and assimilation. *The baby should be awakened to be fed.*

The average mother will supply the needs of the individual meal with one breast, and the breasts

4. Oppenheimer, E.: Pub. 83, Breast Feeding Children's Bureau, Washington, D. C.



should be alternated in successive feedings. Thorough emptying of the breast should be encouraged under all circumstances, as this is our best method for increasing the milk supply, and the baby is the only means at hand by which this can be accomplished. This should be encouraged in every instance. It is most readily thwarted by allowing a lazy baby partially to empty both breasts, as this will soon lead to a diminished milk secretion.

Sometimes, however, it is advisable to give *both breasts* at each feeding, e. g., (1) during the first few days to stimulate secretion, and a little later to relieve the congested breasts; (2) to weak babies when there is an abundance of milk and they are not strong enough to get the last milk, which comes harder; this is to be followed by expression; (3) to overfed babies, when it is desirable to give them only the first and weakest milk and to lessen the yield of milk from the breast; (4) as the milk supplied by one breast fails to meet the needs of the infant. The first breast should be thoroughly emptied before the baby is allowed to take the second breast and the next nursing started on the second breast given in the last feeding.

*Number of Feedings in Twenty-four Hours.*—Four-hour intervals should be observed at the outset, with either five or six feedings in twenty-four hours, according to the individual needs of the child. Night nursing can often be discontinued by the second month, and babies properly fed will go from 10 p. m. to 6 a. m. without anything but perhaps a drink of water.

A three-hour nursing period is more especially indicated when the mother's breasts are small and poorly developed, as the more frequent stimulation will result in a larger twenty-four hour quantity. The same is true of a small and weak infant who finds it difficult to remain at the breast through the entire nursing period.

*Length of Nursing.*—As a rule, a robust baby takes three fourths of the milk obtained from a good breast in the first five minutes of a twenty-minute nursing. From fifteen to twenty minutes should be the limit for the nursing period.

The quantity received at individual nursings will vary greatly throughout the day. The early morning nursings will often yield twice the amount of the later nursings. Therefore it is necessary to ascertain the twenty-four hour quantity in order to estimate the total value of milk received.

When one breast does not meet the infant's demands, both breasts should be given at each feeding, the normal nursing time of fifteen or twenty minutes being divided between the two breasts, either equally or by alternating a long and short feeding period of fifteen and five minutes, so that each breast will receive a long nursing period at alternate feedings. Weak and lazy babies may require awakening during the nursing period to keep them at work. Very weak babies may require a longer period, with short intervals in which they rest.

*The Daily Total of Milk Required.*—Most young infants will satisfy their requirements for growth and development when receiving an average of  $2\frac{1}{2}$  ounces (75 c.c.) of human milk for each pound (0.45 kg.) of body weight in twenty-four hours. Roughly, this may be stated as one sixth of the body weight in milk daily (50 calories for each pound). Older infants will usually thrive on 2 ounces (60 c.c.), or 42 calories of

breast milk for each pound, or one eighth of their weight.

While infants of the same weight and age under the same conditions will require virtually the same amounts to provide for growth and development, on the whole the fat baby will require less for each pound than the thin one.

Heubner thus expresses the needs of breast-fed infants in terms of energy quotient:

During the first few months, an infant requires 100 calories per kilogram daily of breast milk; after the sixth month the energy quotient gradually comes down to 80 or 85 at the end of the first year. An energy quotient of 70 is the minimum amount that an infant can take without losing weight.

Human milk can be estimated at 21 calories for each ounce, or about 70 calories for each hundred cubic centimeters of milk. With these figures in mind, it is easy to determine whether a breast-fed infant gets the right amount of food. It may well be emphasized that the infant who is making a normal gain should offer little cause for anxiety as to the exact quantity it may be receiving from day to day.

*Water Requirements.*—When the infant is receiving one sixth of its body weight in milk during the day, little if any additional water is required. When the breast milk does not meet this requirement, additional water and other food must be administered to meet the required one sixth of the body weight in fluids. During the first days of life, when the breast milk supply is insufficient, total fluids should be administered to meet the needs mentioned above. From 1 to 3 ounces (30 to 90 c.c.) of a 2 to 5 per cent. solution of sucrose or lactose which has been boiled may be given to the infant at four hour intervals until the milk appears.

Before the water is given, the infant should be placed at the breast at each feeding. Even when milk is plentiful, the administration of water two or three times daily from a nursing bottle accustoms the infant to taking the food in this way. An infant so trained will meet emergencies of weaning more readily than one unaccustomed to bottle feeding.

*Feeding During the First Days.*—During the first day of life, food may be withheld for twelve hours, the infant being kept in a warm crib. It usually soon falls asleep, and as a rule it should be awakened only to change diapers. As a rule, the child does not evidence its initial sensation of hunger by crying until after its first half day of life; and even then, in many cases, it is difficult to obtain the cooperation of the infant in administering its food. During the second twelve hours the infant may be put to the breast two or three times in order to stimulate secretion and to teach it to nurse. During the second twenty-four hours the baby should be put to the breast at regular four-hour intervals. The sixth feeding may be omitted. By the third or fourth day the infant will usually receive most of its required food from the breast. If a night feeding is to be instituted, it is well to waken the baby at the regular hour in order to cultivate regular habits, which are so essential to the mother's welfare. The infant should at all times be *taught to take food by the clock*. This means that it should not be nursed before the accustomed hour nor should its feedings be delayed beyond its regular time unless an emergency arises. When the infant either cannot take or does not receive sufficient food on the four-hour nursing period, with five or six nurs-



ings in the day, it should be put on a three-hour period, with seven feedings in twenty-four hours. The average infant can be trained by the second month to wait regularly for its food; and if the milk is of proper quality and of sufficient quantity it will sleep quietly for most of the interval between nursings.

*Initial Weight Loss.*—An initial weight loss is physiologic, and in the main is due to the loss of water through the skin, lungs and kidneys, and the meconium, by way of the intestinal tract. Necessarily, the weight loss is directly influenced by the amount of fluids ingested. To a certain extent the weight decrease depends on the size of the child, the weight loss, on the whole, being greater in a large infant than in a small one. The decrease usually continues for from two to five days after birth. The average weight loss will range between 8 and 10 per cent. of the body weight. Losses above the latter figure should always lead to careful study of the milk supply and water intake, and usually indicate a necessity for complementary feedings of carbohydrate solutions alone, if the breasts seem of good quality, or of milk mixtures. Schick<sup>5</sup> has found that he can prevent most of this initial weight loss by the feeding of sugar solutions during these first days, giving as high as 1 ounce (30 gm.) of sucrose during the twenty-four hours. More recently it has been found practical to use a 5 or 10 per cent. solution of corn syrup as complementary feeding, the total day's feeding, including the breast milk, averaging one sixth of the infant's body weight.

*The Total Nursing Period.*—Some mothers will be able to carry on the nursing for only two or three months; others as long as nine months. In outpatient as well as in private practice it is exceptional to find a breast milk supply which is sufficient for the infant after the ninth month. It is usually wise to allow one bottle feeding daily by the end of the third or fourth month in order to relieve the mother and at the same time train the baby in bottle feeding.

*Protracted Nursing.*—Weaning may be delayed when the infant is passing through the hot months of summer and when the quality of the cow's milk supply is uncertain. It may also be delayed when the infant is convalescing from a recent illness or in the presence of epidemics of acute infectious diseases.

*Signs of Successful Nursing.*—The normal full-term infant shows a gain of not less than 4 ounces (120 gm.) weekly. This is the minimum weekly gain that may safely be allowed. When a nursing baby remains stationary in weight or makes a gain of only 2 or 3 ounces (60 or 90 gm.) a week, it means that something is wrong, and the defect will usually, but not invariably, be found in the milk supply. When the baby is nursed at proper intervals and the supply of milk is ample and of good quality, it is satisfied at the completion of the nursing. Under 3 months of age it falls asleep after ten or twenty minutes at the breast. When the nursing period again approaches, it becomes restless and unhappy, crying lustily if the nursing is delayed. When the breast is offered, it takes it greedily. The weekly gain in weight under such conditions is usually from 4 to 8 ounces (120 to 240 gm.). At the fifth month the baby will have doubled, and at the twelfth month trebled its birth weight. The average

gain for each week during the first year usually approximates 5 ounces.

*Stools.*—The feces of breast-fed babies are strikingly uniform and are like no other bowel movement in infancy. Normally there are two or three a day, sometimes only one, or, again, more than three. They are soft or mushy, homogeneous, of an egg-yellow or gold color, and have a slightly sour, not at all unpleasant odor. They are never formed and always cling to the diaper. The nature of the bowel movement, and its uniformity, is due to the "physiologic fecal flora" which is brought about by the ingestion of breast milk into the germ-laden intestinal tract. The dominating organisms have a fermentative rather than a putrefactive action on the food. The gases normally formed are carbon dioxide and hydrogen, and these are almost odorless. The acidity of the movement, its softness, and the mechanical action of the gases present, all insure active peristalsis and ready emptying of the bowels, so that true constipation is an exceptional condition in a breast-fed baby, and, if present, nearly always suggests too little food, or abdominal and intestinal muscles too little developed and too weak to force the stool past the anal sphincter. More often the stool is simply retained above the anus, owing to lack of peristalsis sufficient to overcome the anal sphincter. The latter condition is commonly interpreted as constipation by the laity.

The feces of the breast-fed baby are frequently not wholly normal; they quite commonly, especially during the first few months, contain small, soft, white or yellowish fat curds, an excess of mucus, and are often greenish, and may be more frequent than normal. *Such a condition is perfectly consistent with a normal growth and well-being of the baby, and should never in itself be a cause of worry, or an indication for a change of food.* This is a very important point that is commonly neglected. The condition of the bowel movements is only one factor, and in the breast-fed a minor one, in determining a baby's nutrition.

*Signs of Unsuccessful Nursing.*—The most significant symptoms are a stationary or insufficient gain in weight or losses in weight, fretfulness on the part of the infant while nursing, a tendency to remain for too long a time at the breast, and crying when it is removed from the breast. Small stools composed largely of mucus are usually an indication of insufficient food, especially when only one or two are passed daily. While every effort should be directed toward maintaining the breast-milk supply, it is of equal importance to interpret the symptoms of underfeeding as indications for complementary or supplemental feedings.

Except in the presence of extreme emergency, breast feedings should not be discontinued suddenly. It is always wise to continue as many feedings at the breast as may be warranted by the circumstances in the individual case.

(To be continued)

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**Deaths from Childbirth.**—The Department of Commerce announces that provisional figures compiled by the Bureau of the Census show lower death rates of mothers from childbirth or puerperal causes in 1921 than in any year since 1917. Of the twenty-seven states for which figures are available, South Carolina has the highest 1921 death rate from puerperal causes (9.8 per thousand live births) and Connecticut the lowest (5.3). The ratio of deaths from childbirth to the number of women bearing children in the year 1921 was about 1 to 150.

5. Schick: Ztschr. f. Kinderh. 27: 57, 1920.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JANUARY 13, 1923

## PRESENT POSSIBILITIES FOR SPECIFIC CHEMOTHERAPY OF BACTERIAL INFECTIONS

Despite the fact that bacterial infections play a far larger part in human affairs than does invasion by protozoa and other animal parasites, most of the investigative work heretofore done on the possibility of specific chemical disinfection has concerned the latter group of invaders. When we think of specific chemotherapy, we recall malaria and quinin; trypanosomiasis and the several chemicals that destroy the parasites involved; amebic dysentery and emetin; bilharziasis and antimony and potassium tartrate; spirilloes and the arsphenamins; but most of us do not associate successful specific chemotherapy with bacterial infections. Theoretically, at least, we have the right to expect even more ready attack on bacteria than on protozoa, since the former are less closely related to mammalian organisms than the protozoa, and in chemotherapy we are seeking for cell poisons that will select the parasite rather than the host.<sup>1</sup> Up to the present time, however, we have no such successes to record with antibacterial chemotherapy as are contained in the foregoing list; but it is important to recollect that we have not a few positive items that encourage the hope that the day is not far distant when we may have an armamentarium as efficient against some, if not all, bacterial diseases as we now have against so many of the protozoan infections.

In the first place, the spirilloes represent invasions by organisms so closely related to bacteria that their classification with protozoa has been much contested; yet here we find our most remarkable example of a chemical antiseptics specific for a whole group of parasites. When we find an infection with spirillar organisms, we anticipate with confidence a positive therapeutic effect from arsphenamin, even when the diseases are so dissimilar clinically and anatomically as relapsing fever and yaws. Again, we have several demonstrations that chemical antiseptics do exist

capable of specifically attacking a definite bacterium. One of the most striking of these is the quinin derivative ethylhydrocuprein, which has a most remarkably specific capacity to destroy the pneumococcus when it has infected an experimental animal. So slight a change in the composition of the complex ethylhydrocuprein molecule as the substitution for its ethyl radical of either a methyl or a propyl radical reduces its efficiency. Although this drug will certainly prevent or cure an otherwise lethal pneumococcus infection of mice, it has not solved the problem of the cure of human pneumonia, probably because in man the curative and toxic doses are too nearly the same. Nevertheless, it has been found of value in the treatment of local pneumococcus infections, such as corneal ulcers, and several reports have appeared of its successful use in pneumococcus meningitis. In the more or less efficient treatment of leprosy by chaulmoogra oil and its derivatives, we have evidence that even so resistant an organism as the acid-fast leprosy bacillus may be attacked by chemical means, thus holding out hope for a similar solution of infection with its more widespread relative, the tubercle bacillus.

Churchman<sup>2</sup> has stimulated much interest and furnished encouragement as to the ultimate possibilities of local sterilization of infected tissues and surfaces. His pioneer demonstration that gentian violet and other related dyes selectively inhibit or kill such bacteria as stain by Gram's method is widely known, and some therapeutic successes have been reported in the sterilization of infected wound surfaces and serous cavities with gentian violet. More recently he has found that a commonly used dye, acid fuchsin, has quite the reverse selectivity of gentian violet, for it acts specifically on bacteria that do not stain by Gram's method. In England, Browning and his co-workers have made important observations on the bactericidal action of certain dyes, particularly such members of the acridin group as the flavines.

Morgenroth, who was for many years associated with Ehrlich in chemotherapeutic investigations, has reported observations on two substances, one a new derivative of quinin, the other a derivative of acridin. These have a marked antiseptic action in tissues infected with streptococci and staphylococci. It has been found possible experimentally to infect mice subcutaneously with doses of the pus cocci which produce extensive local phlegmonous suppuration, associated with bacterial invasion of the blood, and then to sterilize both the local infection and the blood by injecting these chemicals into the subcutaneous tissues about the infected area.<sup>3</sup> This complete bacterial sterilization of the mouse may be obtained, it is claimed, even when the infection has been under way for eighteen hours.

2. Churchman, J. W.: *The Anilin Dyes in Therapeutics*, J. A. M. A. 79: 1657 (Nov. 11) 1922.

3. A lecture by Morgenroth gives a recapitulation of his work in this field: Morgenroth, J.: *Ziele und Wege der chemotherapeutischen Antisepsis*, Klin. Wchnschr. 1: 353 (Feb. 18) 1922.

1. Schlossberger, H.: *Development and Problems of Modern Chemotherapy of Infectious Diseases*, New York M. J. 115: 26 (Jan. 4) 1922.



The exact quantitative studies that Morgenroth has carried out on experimental animals cannot well be duplicated in human infections. Nevertheless, German surgeons are beginning to describe a similar efficiency of the acridin derivative in clinical cases. Morgenroth says:

What yesterday seemed absurd, tomorrow will seem banal. Today it is no longer a question for debate whether or not there can be a prophylactic and curative chemotherapeutic antiseptics, but merely a question of when, where and how. The future of chemotherapeutic antiseptics will probably resemble the present situation in respect to local and general anesthesia, for the future surgeon will inquire in each case whether the antiseptics should be local or be general through the circulation, which antiseptic is to be selected, what concentration and quantity, etc., just as he now does with his anesthetics.

If the foregoing optimistic forecast is true, the logical extension of these conclusions is that other, nonsurgical infections may equally well be overcome by similar methods. Somewhat rash these prophecies, perhaps; but when we consider the undoubted advances made in this field of chemotherapeutics in a few years by a very few workers, we have every right to anticipate much more to come. A larger appreciation of the possibilities of chemical attack on bacterial infections may lead to the expenditure of the quantity of brains and money that are warranted by the importance of the problems and the prospects of invaluable results.

#### THE QUEST OF POTENTIAL ENERGY

During the nineteenth century, the science of physiology learned the significance of the energy aspects of nutrition. As Lusk<sup>1</sup> has recently reminded us anew, in a delightful review of the history of metabolism, Rubner was the first to solve the problem initiated by Lavoisier, of demonstrating that the law of the conservation of energy held true for the animal organism. The crucial experiments were conducted within the memory of many persons still living. Calorimetry has attained large importance not only in the study of the chemical changes taking place in the organism but also in determining the possible value of food materials as sources of energy. Thus, calories enter into our daily reckonings in various ways in relation to the fuel needs of the human and animal mechanisms as well as the engines of human construction. Indeed, the struggle for existence has been described by a distinguished physicist as essentially a fight for the potential energies of coal, sugar and meat. Mendel<sup>2</sup> has remarked that, in view of the increase of population, it has been a favorite pastime for scientists to calculate the possibilities of the food supply of the future, and to venture prophecies involving the prospect of impending failures. A quarter of a century ago, Sir William Crookes provoked widespread discussion when he forecast the

failure of the wheat crop to supply the needs of an increasing population of bread eaters in the present generation. Although his fears have not been entirely justified, there are signs that increase in production cannot go on indefinitely.<sup>2</sup>

Meanwhile, our food resources appear to be threatened from another direction. Man has become an implement-using animal, and has greatly increased his efficiency by employing the power-driven machine. Spohr<sup>3</sup> has presented this disconcerting picture:

The source of energy which drives these machines is not a steady stream: it is being drawn from the accumulation of centuries. A year's consumption of coal at the present rate represents the accumulation of hundreds of years. The power of man to do work, physical work, the unit one-man power, is now an almost insignificant factor. A return to such a physical standard would almost certainly follow the failure of such sources of energy as man now has at his disposal. The quest of these sources of energy, coal and oil, is at present being pushed with a feverish intensity that has never been known before, and the competition for the possession of these stores recognizes no principles. The destiny of civilization is guided by and reflects the amount of available energy. When coal and oil are exhausted, the daily ration of solar energy will represent almost the entire means of livelihood; our mushroom civilization must pass like the historic empires of the past, and we may expect the reappearance in the world once more of galley slaves and serfs.

Through its truly remarkable property of photosynthesis, the plant is enabled to capture the solar energy and store it in the form of organic constituents. These may serve not only as food fuel for man, but also as fuel sources for the industrial world. Wood may replace coal; and alcohol produced by fermentation from the carbohydrates of plants may supplant petroleum in our heat engines. But the photosynthetic capacities of forestry and agriculture are limited, at best. Organic nature is wasteful. Out of hundreds of units of energy represented in solar radiation on a wheat field, for example, scarcely a single unit can be stored in a growing season. Boyd<sup>4</sup> has calculated that, if the entire corn crop of the United States produced by an acreage more than four times the total area of the state of Ohio were diverted to produce alcohol for fuel purposes, its heating value would scarcely exceed that of the present gasoline production of this country.

Obviously, if this is correct, we cannot afford to divert our indispensable food resources in the form of farm crops to motor fuel production. This brings us face to face with the scientific problem of rivaling nature in harnessing solar energy for the industrial uses which threaten to compete with man's needs of food fuel. As Spohr has remarked, it is the duty of the scientist to learn the precise manner in which this is accomplished. He need not be timid about competing with nature. He has many cases to his credit of surpassing the processes of nature both in efficiency and in reliability. There are many substances now effec-

1. Lusk, Graham: *A History of Metabolism*, in *Endocrinology and Metabolism*, 1922, p. 75.

2. Mendel, L. B.: *Changes in the Food Supply and Their Relation to Nutrition*, Yale University Press.

3. Spohr, H. A.: *Photosynthesis and the Possible Use of Solar Energy*, *J. Indust. & Engin. Chem.* **14**: 1142 (Dec.) 1922.

4. Boyd: *Motor Fuel from Vegetation*, *J. Indust. & Engin. Chem.* **13**: 836, 1922.



tively produced artificially that were formerly obtainable only from plants or animals. The physician is daily called on to correct or improve on nature. He does so when he corrects vision with glasses or increases the immunity factors in the blood so that man becomes more resistant to disease. Why should man hesitate to meet the problem of utilizing energy in order to promote his efficiency, if not actually to accomplish self-preservation?

#### DOES SCHOOL WORK IMPAIR HEALTH?

Many events in connection with human life are determined on a chronological basis solely with respect to the age of the individual concerned. In at least two of these it must seem somewhat strange, on careful consideration, to find that chronological rather than physiologic age has so often been made the basis for features of great importance in human experience. In many states the law carefully defines the age below which children may not leave school to engage in wage-earning labor. Thus, the problem of child labor is settled, in practice, on the basis of age, without necessary reference to the biologic or other fitness of the young worker concerned. The minimal standards for children entering employment, as formulated in a report<sup>1</sup> of the Children's Bureau Conferences in 1919, refers frequently to minimal ages for a variety of employment demanding varying degrees of physical endurance and skill. Everywhere one reads of an age minimum, although a novel addendum is found in the suggestion that a child shall not be allowed to go to work until he has had a physical examination by a public health physician and has been found to be of normal development for a person of his age, and physically fit for the work at which he is to be employed. It will mark a great step in advance when fitness to engage in manual labor or in other sorts of tasks at the end of a normal school life shall be based on the physiologic and mental equipment of the person concerned, as much as on the number of years that have elapsed since his birth.

A second event in which, all too often, years rather than physique and personality seem to be principles guiding to decision, involves the time in life at which children should begin their school work. We have no desire to enter into the debate as to when the preschool days should end. Certain facts in reference to the arguments often advanced deserve, however, to be known. It is frequently stated that the acceleration of the educational process through school attendance may in the long run be detrimental rather than otherwise. In other words, this concerns the question whether it would be better for the health of most children if they were not sent to school when the law says they are old enough to go, but were kept out until they are older. As the views entertained by both physicians and educa-

tors have usually represented personal opinions based on unsubstantiated impressions or chance observations, the U. S. Public Health Service<sup>2</sup> has conducted investigations bearing directly on the subject. A study of the schoolchildren in a typical American community has shown that the work of the elementary grades had little, if any, adverse effect on the pupils' weight. Of the children who entered the schools up to the standard of weight in the fall, remarkably few were underweight in March. This was observed entirely irrespective of the age of the pupil, the underage child making as good a showing as the normal age or overage child. Sterling<sup>2</sup> concludes that parents need not hesitate to send a healthy child to school at the age of 6, which was the entrance age of the school studied. When the investigator regards it as plain that school life, apart from detrimental influences which may exist in the home environment, is not ordinarily a menace to the child's state of nutrition, good sense seems to be adequately supported by a critical inspection of existing school conditions. Such justified generalizations cannot fail to be a helpful guide to him who may be the chief guide and counselor as well as physician in many families.

#### EXPERIMENTAL ASCARIASIS IN MAN

Until recently the life history of the eelworm, *Ascaris lumbricoides*, in man was believed to involve no intermediate host, and was usually stated to indicate a comparatively uncomplicated sojourn in the organism. The assumption was that when the developed eggs are swallowed, either in contaminated food or in water, or from hands soiled with dirt containing the eggs, the embryo develops directly to the adult stage.<sup>3</sup> The habitat of the parasite in its various stages of development was supposed to be the alimentary tract, although an occasional wandering of the worms was recognized as a dangerous aspect of ascariasis. Stiles,<sup>3</sup> in his elaborate review of the subject in 1907, mentioned that the escape of erratic eelworms by the mouth or nose is not very rare, and he regarded this aspect of the infections as particularly indicative of the importance of prophylactic treatment.

Through the more recent investigations of Stewart,<sup>4</sup> it has become probable that *Ascaris* cannot develop continuously and directly in the intestine of the host. The evidence secured in experiments on animals indicates that the larvae can and often do penetrate the intestinal wall, ultimately finding their way to the lungs. From there it is a short step for them to reach the esophagus and thus be returned to the intestine. The larvae have actually been found in many parts of the body. Ransom and Foster<sup>5</sup> of the Bureau of Animal

2. Sterling, E. Blanche: Nutrition and Education, Pub. Health Rep. 37: 2798 (Nov. 10) 1922.

3. Stiles, C. W.: The Zoo-Parasitic Diseases of Man, Osler's Modern Medicine 1: 596, 1907.

4. Stewart, F. H.: On the Life History of *Ascaris Lumbricoides*, Parasitology 10: 197, 1918; 11: 385, 1919; 13: 37, 1920.

5. Ransom, B. H., and Foster, W. D.: Observations on the Life History of *Ascaris Lumbricoides*, Bull. 817, U. S. Dept. Agric., 1920.

1. Standards of Child Welfare, Conference Series 1, Publication 60, Children's Bureau, U. S. Dept. Labor, 1919.



Industry are in substantial accord with Stewart in respect to the erratic path of the parasites in the body. Newly hatched larvae may be eliminated in the feces; others may penetrate the intestine and go to the liver and lungs and occasionally other organs, including the abdominal cavity. The pathway from the alimentary canal has been debated; but the most cogent evidence points to the veins and pulmonary artery as the route, although a small proportion of the migrating larvae may travel by the lymph stream or perforate the diaphragm from the abdominal cavity.

The outstanding fact in the recent studies is the early appearance of larvae in the lungs, and the small numbers in remote organs such as the spleen and kidneys, in experimentally infested animals. The indication that something similar occurs in human cases of ascariasis is afforded by the somewhat heroic experiments of Koino<sup>6</sup> of Tokyo on men. After he himself had swallowed two thousand mature eggs of *Ascaris lumbricoides*—the human parasite—and another person had ingested the eggs of the pig ascaris, *Ascaris suilla*, symptoms attributable to larval migrations as in experimental animals occurred in both cases. There were headaches, fever, respiratory difficulties and other untoward results. Pneumonia ensued, and larvae were found in the sputum. The human host proved to be unfavorable for the pig parasite. These facts, though they afford evidence far more indirect and circumstantial than the more carefully controllable studies on man, serve, nevertheless, to fix attention anew on the dangers from *Ascaris* migration in the body.

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## Current Comment

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### THE DURATION OF BREAST MILK FEEDINGS

The artificial feeding of infants, and particularly so-called bottle feeding, is essentially an imitation of the procedure whereby the nursing secures its supply of food at the mother's breast. If the period of nursing is made too brief, the resulting inability to secure sufficient nutriment must be obvious. How long, on the other hand, it may be wise or advantageous to permit the nursing to remain at the breast is not so readily answered in definite terms. It is taking, perhaps, a somewhat unhumanitarian or unideal point of view to estimate the loss of time which unnecessary devotion to such feeding may represent on the part of the mother; nevertheless, the total may actually amount to hours rather than a few minutes in the course of a day. To the wage earner or the head of a large household, this is not an entirely insignificant consideration. But there is also the question as to whether undue prolongation of the act of nursing may not be a positive detriment rather than merely a matter of indifference with respect to the welfare of the infant itself. There is a widely observed tradition that twenty minutes is the

"proper" duration for each feeding. It may come as a surprise to many, therefore, to learn the results of a large number of actual determinations recently made at the Department of Diseases of Children of Columbia University, New York, by Smith and Merritt.<sup>1</sup> Through successive weighing of nursing infants, it was ascertained that they obtain the greater part of their feeding of breast milk in the first few minutes—from 40 to 60 per cent. in the first two minutes, and from 60 to 85 per cent. in the first four minutes. This holds true whether the supply is abundant, moderate or scanty. After eight minutes, very few babies get any milk whatever. Most pediatricians are agreed that prolonged feeding is undesirable for babies for several reasons; it is also not desirable for the mothers. The findings just referred to warrant the general conclusion that a normal baby that gets enough milk from one breast needs to nurse, as a rule, only from six to eight minutes; rarely from ten to twelve minutes. Smith and Merritt go a step further in their conclusion with the advice that, if the baby empties the breast in from five to eight minutes and shows no signs of discomfort from an adequate feeding obtained in that time, there seems to be no good reason why he should not take his bottle in about the same time. The reign of economy seems to be including the daily routine of man from the earliest days of his infancy.

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### EARLY SILICOSIS AND EARLY TUBERCULOSIS

If Paracelsus and Ramazzini had been pathologists, pulmonary disease associated with the inhalation of dust would have assumed importance generations ago, for they were the first to describe the condition now known as pneumoconiosis. As it was, the pathology of the condition was unrecognized by the early writers, and at the time of Laënnec was confused with that of pulmonary tuberculosis. About 1825, Alison drew attention to certain similarities and differences between these diseases, and opened a discussion as to their intimate relation which has never entirely closed. In view of recent investigation, the fundamental changes arising from the inhalation of dust should be more generally recognized. When any sort of dust enters the lung, a host of wandering cells appears in the alveoli and takes up the dust particles. Then, or later, many of the laden "dust-cells" escape through the air passages without doing harm, but others fail to escape. Dust-cells which remain in the lung ordinarily survive only a short time. They are carried off by the lymphatics, they are autolyzed, or they undergo digestion by the tissue juices, leaving their loads of dust in situ. Coal dust, for example, to which an animal had been exposed some weeks before, was found<sup>2</sup> lying on the outer surface of the blood vessels where it could readily escape into the air tubes. In such cases elimination follows fairly closely on the heels of invasion, and the injury is slight. With some other dusts, however, among which silica is the most striking example, definite, marked pathologic changes occur whose extent depends on the

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6. Koino, S.: Experimental Infections on Human Body with *Ascaris*, Japan Med. World 2: 317 (Nov. 15) 1922.

1. Smith, C. H., and Merritt, K. K.: The Rate of Secretion of Breast Milk, Am. J. Dis. Child. 24: 413 (Nov.) 1922.

2. Mavrogordato, A.: Studies in Experimental Silicosis and Other Pneumoconioses, Publications of the South African Institute for Medical Research, March, 1922.



quantity and quality of dust inhaled. Silica preserves, so to speak, the dust-cells which pick it up, prevents their autolysis or digestion in the lymph, and thus causes their accumulation in the lymph channels, which they eventually fill up and block. Behaving now somewhat as foreign bodies in the lymphatics, fibrotic changes occur in which the cells themselves merge into fixed connective tissue cells and ultimately coarse white fibers, and thus completely and perhaps permanently obstruct the lymph channel. When the affected lymphatics are perivascular, the fibrosis continues until the blood vessel itself is converted into a solid rod of fibrous tissue. Although all dusts tend to "drift" toward the visceral pleura, cells laden with silica differ from some others in collecting there in bunches, which, to the bacteriologist, at least, suggest a positive Widal agglutination. Mavrogordato terms these aggregations of dust-filled cells "pseudo-tubercles," since the method of formation and the cells concerned are the same as in the true tubercle. It is in these bodies that silicotic fibrosis first arises, and their presence on the visceral pleura is one of the earliest changes found at necropsy. There are thus three stages in the development of simple silicosis: (1) the provocation of "dust-cells"; (2) the accumulation of these cells in the lymphatics and their collection into "pseudo-tubercles," and (3) the fibrosis of obstructed lymphatics and of pseudo-tubercles. The early lesions of silicosis and pulmonary tuberculosis are much alike. The difficulty of differentiating them may be insurmountable. It is important, however, to realize that silica alone, without the association of the tubercle bacillus or other infective agent, can produce all the early stages of a pulmonary disease so similar to early tuberculosis.

## Association News

### THE SAN FRANCISCO SESSION

#### Applications for Space in Scientific Exhibit and for Time on Motion Picture Theater Program

Plans are under way for the Scientific Exhibit to be held at the San Francisco session of the American Medical Association. Application blanks for either exhibit space or time on the Motion Picture Theater Program will be ready, March 1. Those desiring application blanks should forward their names and addresses to Director Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago.

#### American Medical Association Eastern District Official Tour to San Francisco

The annual session of the American Medical Association will be held at San Francisco, June 25-29, 1923. The subcommittee appointed by the secretaries of the medical societies of the Eastern states has arranged a twenty-five day tour to San Francisco and return, stopping at interesting and important points. All details of the trip will be taken care of, and all arrangements made by an experienced tourist representative, who will accompany the party and take entire charge of the tour. In order to make this tour a success, and to have a special train with all conveniences, including diners, special Pullmans and baggage car, it will be necessary to have at least 125 Fellows subscribe to the tour. The state medical societies of the Eastern states and of some of the Middle states have appointed, as a subcommittee to

arrange for the tour, Drs. Edward Livingston Hunt, Wilbur Ward and Malcolm C. Rose.

The committee extends to all who contemplate attending the annual session a cordial invitation to join the tour, further details of which will be published later.

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## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**County Health Units.**—There will soon be a complete chain of health units across the northern counties of Alabama, it was announced recently. Limestone County has appropriated \$5,000 for a full-time health officer and health unit, and when Jackson County makes a similar appropriation, which it now proposes to do, it will complete the chain.

### ARKANSAS

**Personal.**—Dr. C. A. Williams, El Dorado, has been appointed full-time health officer to succeed Dr. S. J. McGraw, who recently resigned as head of the health board.

### CALIFORNIA

**Medical School Gets Higher Rating.**—The College of Medical Evangelists, Los Angeles, has recently been granted a rating in Class A by the Council on Medical Education and Hospitals of the American Medical Association.

**Former University President Dies.**—Prof. William Thomas Reid, president of the University of California in 1881, died, December 18, in Berkeley, reports state. Dr. Reid was a graduate of Harvard University and received his LL.D. from the University of California.

**Los Angeles Officers Elected.**—At the annual meeting of the Los Angeles County Medical Association the following officers were elected for 1923: president, Dr. William H. Gilbert; vice president, Dr. Joseph K. Swindt, and secretary-treasurer, Dr. Harlan Shoemaker. An address was given by Dr. Donald J. Frick, the retiring president.

**Popular Medical Lectures.**—Stanford University Medical School announces the forty-first course of popular medical lectures, to be given at Lane Hall, beginning January 12. The first lecture was given by Dr. Philip King Brown on "Building Up Resistance to Disease: An Individual and Community Problem." January 26, Dr. Lewis M. Terman will speak on "Gifted Children." Mr. Astredo of the juvenile court will speak on the "Problem of the Delinquent Child," February 9. "Care of the Dependent Child" will be Miss Felton's subject, February 23. The fifth lecture will be delivered by Guy S. Millberry, D.D.S., March 9, on "Modern Views on Dental Hygiene in Childhood," and the sixth and final lecture will be given, March 23, by Dr. William C. Hassler, health officer of San Francisco, on "San Francisco's Health Program for Children: The Medical Aspects."

### COLORADO

**Dr. Powers Leaves Legacy to Medicine.**—Dr. Charles Powers, who died suddenly, December 23, in the University Club, Denver, left a large part of his estate for the advancement of surgery and medicine. The income from \$3,000 he left in trust for the Medical Society of the City and County of Denver, for the purchase of medical books and journals for the library. All of his books, instruments and pictures he bequeathed to the International Trust Company for distribution as deemed advisable. The remainder of the estate was left in trust, one half the income, on the death of his step-father, to go to the Children's Hospital of Denver; the other half of the income from the trust funds, on the death of Miss Hurd, a former secretary, to be paid to the trustees



of the New York Academy of Medicine of New York City, one half the income therefrom for the purchase of books on surgery and anatomy, and the other half to be devoted to the expenses of an annual lecture course "which shall embody results of original research in the department of surgery and surgical pathology, the lectures to be selected by the president of the academy, the senior professor of surgery, and the senior professor of medicine for the time being of the College of Physicians and Surgeons of New York."

#### DELAWARE

**County Medical Meeting.**—At the annual meeting of the New Castle County Medical Society at Wilmington, December 19, the following officers were elected: president, Dr. William E. Bird; vice president, Dr. William O. Lamotte, and secretary-treasurer, Dr. Charles P. White (reelected).

#### ILLINOIS

**Conference on Sanitation.**—The chief sanitary engineer of the department of public health recently met with the officers of the Fox River and Lakes Improvement Association, to complete plans for making the waters of the upper Fox River and Lakes safe for bathing purposes. Property owners concerned and members of the association will be advised to comply with sanitary regulations recommended by the department.

**Diphtheria Closes Schools.**—The Highland Park health commissioner has ordered restrictions placed on the movements of all children below the age of 14 years, and all grade schools closed, following the development of more than twenty-five cases of diphtheria during the last few days. High school classes will also be suspended, and policemen have been stationed at skating rinks and moving picture theaters to keep out all children under 14, in an effort to prevent the spread of the disease.

**Infant Welfare Stations Established.**—New infant welfare stations were opened during December at Freeport, Wilmington and Steger. At Freeport, the station will be maintained by the Amity Society, the clinics being conducted by Dr. J. A. Poling, city health officer. At Wilmington and Steger, the centers were established through the efforts of the county nurse and superintendent of schools, and the clinics will be conducted by members of the local medical societies. Dr. Elizabeth B. Ball, pediatrician, attached to the state department of public health, directed the opening of the station and the first clinic at each place, her services having been requested by the local agencies concerned.

**County Medical Meetings.**—Drs. Charles M. Doty and Christian H. Diehl were elected president and secretary, respectively, of the Effingham County Medical Society at the annual meeting. Will County Medical Society elected Dr. Earl R. Steen president for 1923, and Dr. Edwin R. Talbot was reelected secretary. At the annual meeting of the Morgan County Medical Society, Dr. Thomas G. McLin was elected president and Dr. Ellsworth Black, secretary. Dr. Warren W. Murfin of Patoka was elected president of the Marion County Medical Society, December 15, and Dr. John E. Schoonover, Salem, secretary-treasurer. Dr. William K. Farley, Fulton, has been elected president of the Whiteside County Medical Society.

#### Chicago

**Banquet for Senator Copeland.**—Chicago physicians gave a banquet in honor of Dr. Royal S. Copeland, health commissioner of New York City, January 9, at the Chicago Athletic Club. Dr. P. J. H. Farrell was toastmaster. Dr. Copeland spoke on the immigration peril and advocated examination on the other side—moral, mental and physical—and allocation, so far as possible, according to industrial or professional preparation. Dr. Charles E. Humiston, former president of the Illinois State Medical Society, and Dr. John Dill Robertson, formerly city health commissioner, also gave addresses.

**Personal.**—Dr. Joseph L. Miller, Rush Medical College, spoke on "Protein Metabolism" before the Elgin Physicians' Club, Elgin, December 18. Dr. Duncan D. Campbell, on the staff of the Chicago State Hospital, has been appointed by the Missouri State Eleemosynary Board as superintendent of Hospital No. 2, St. Joseph, Mo., to succeed Dr. Aden C. Vickrey, who recently resigned. Dr. Edwin Bruce Godfrey, Chicago, formerly city physician of Springfield, sailed, December 25, for Greece, where he will take charge of the American Red Cross work. Dr. Godfrey served during the World War in France with the rank of major in

the American Expeditionary Forces.—Dr. Charles E. Galloway sailed, December 16, for Cherbourg and Southampton, on the White Star liner *Majestic*.

#### INDIANA

**Dinner for Amos Butler.**—The friends of Amos W. Butler, secretary of the Indiana Board of Charities, gave a dinner for him, December 2, on the completion of twenty-five years of service as secretary and manager. Governor McCray spoke of the splendid work of Mr. Butler.

**Methodist Medical Meeting.**—The research society of the Methodist Hospital, Indianapolis, gave a dinner for Dr. Samuel A. Levine of Boston, at the Columbia Club, December 1. Following the dinner, Dr. Levine gave an address on "Diagnosis and Treatment of Heart Lesions." Dr. Charles P. Emerson also gave a dinner for Dr. Levine.

#### IOWA

**Large Gifts for Iowa University.**—President Jessup of the State University of Iowa College of Medicine announced, December 27, two gifts of \$1,125,000 each to the college, one from the General Education Board and one from the Rockefeller Foundation. The money will be used to erect and equip a new hospital and laboratory, it was announced. At its next session, the state legislature will be asked to appropriate \$450,000 annually for the next five years to equal the gifts of the two foundations. As soon as the legislature accepts the plan, construction work will be commenced on the new buildings, for which sketches and estimates have already been prepared. The buildings will be erected on the west bluff of the Iowa River, facing the old capitol building.

#### MAINE

**Kennebec County Medical Society.**—At the annual meeting of the society in Augusta, December 29, Dr. Kendall urged closer cooperation between local and private health groups and the Maine State Public Health Association. Officers elected for 1923 were as follows: president, Dr. Ralph L. Reynolds, Waterville; vice president, Dr. Silas O. Clason, Gardiner, and secretary-treasurer, Dr. Herbert W. Hall, Augusta.

#### MARYLAND

**Board of Mental Hygiene.**—This board, which took the place of the state lunacy commission, January 1, under the state reorganization plan, has announced the following appointments made by Governor Ritchie: Drs. Hugh H. Young, George H. Hocking, Henry J. Berkley and J. Albert Chatard, all of whom were members of the old lunacy commission. In addition, H. Findlay Finch and Mrs. Athey have been appointed. The board will meet this month and will recommend the appointment of a commissioner of mental hygiene.

**Personal.**—Dr. Benjamin C. Perry, Bethesda, has been appointed a member of the state board of health, his term expiring in May, 1928. Dr. Perry is president of the board of county commissioners of Montgomery County. Dr. William H. Welch, director of the School of Hygiene and Public Health, Johns Hopkins University, Baltimore, and Dr. A. W. Freeman, resident lecturer on public health administration at the School of Hygiene and Public Health, will address a public health meeting at Catonsville, January 18. Dr. Edward H. Hume, dean and professor of medicine at Hunan-Yale College of Medicine, Changsha, China, gave a lecture at Johns Hopkins University, January 4, on "China and America Today," in which he pictured conditions in China as both "discouraging and hopeful."

**Johns Hopkins University News.**—Plans for a new chemical laboratory for the Johns Hopkins University, to be located at Homewood, at a cost of about \$600,000, have been completed. The details of the building have not been made public, but it is known that the type of architecture will conform to the colonial style of the Homewood group. Action to hasten the construction of the new laboratory has been influenced largely by present housing facilities of the chemical department. As soon as the board of trustees makes the proper authorization, bids will be placed. Bids also for contracts for the new \$1,000,000 home of the Johns Hopkins School of Hygiene and Public Health, which will be located at Monument and Wolfe streets, as a part of the hospital group, will shortly be asked. Plans have already been completed, and final revision of specifications is being rushed.



This structure will be of Italian architecture of brick and stone, and is provided through a donation to the school by the Rockefeller Foundation.

#### MICHIGAN

**Each Prison to Have Full-Time Physician.**—A new plan for medical and surgical service in the state penal institutions, under which a full-time resident physician will be assigned to each prison, will become effective shortly, it has been announced by Dr. R. M. Olin, state health commissioner. Dr. Russell L. Finch, Ann Arbor, has been appointed resident physician to the Marquette Prison, to succeed Dr. Harold B. Markham, who formerly did the work in addition to caring for his private practice.

**County Elections.**—At the annual meeting of the Muskegon County Medical Society, recently, Dr. Samuel A. Jackson was elected president; Dr. Albertus B. Poppen, vice president, and Dr. Fred N. Morfold, secretary-treasurer.—Dr. Daniel G. Castell was elected president, and Dr. Frederick A. Baker, secretary of the Oakland County Medical Society at the annual meeting in Pontiac.—Berrien County Medical Society elected Dr. Alvan A. Rosenberry, Benton Harbor, president, and Dr. Ralph B. Howard, Benton Harbor, secretary, of the society for 1923.

#### MINNESOTA

**Medical Men Plan Law for Practitioners.**—Physicians, chiropractors, osteopaths and practitioners of all other systems of healing, except mental and spiritual healing, will have to submit evidence of adequate training in anatomy, chemistry, pathology and physiology in order to obtain admission to examinations for licenses to practice their respective callings in Minnesota, if a law proposed by the Minnesota State Medical Association is enacted. The standard of fitness will be the same for all. Fitness must be demonstrated ordinarily by examinations, but evidence of having passed examinations before certain examining boards outside of Minnesota may be accepted. A new board, to be known as the State Board of Examiners in the Basic Sciences, will be charged with the execution of the law, and no licensing board may admit any candidate to its examinations, or license any candidate by reciprocity or in any other way, unless he has presented a certificate of fitness issued by the Board of Examiners in the Basic Sciences. It is to be optional with the licensing boards whether they will or will not accept such certificates as evidence of qualification in anatomy, chemistry, pathology and physiology, in lieu of examinations conducted by the licensing boards themselves.

#### MISSOURI

**St. Louis Medical Society.**—At the annual meeting of the society, January 2, held under the presidency of Dr. William W. Graves, the following officers were elected for 1923: president, Dr. William H. Vogt; vice presidents, Drs. Horace W. Soper and Robert F. Hyland, and secretary, Dr. Thomas Noxon Toomey.

**Personal.**—Dr. Jacob J. Singer, St. Louis, has been appointed consultant in diseases of the chest at the State Sanatorium, Mount Vernon.—Dr. R. T. Terry, professor of anatomy, Washington University School of Medicine, St. Louis, was elected secretary for the anthropologic section of the American Association for the Advancement of Science, at a meeting held, Dec. 29, 1922.

**Honor for Dr. Opie.**—The National Tuberculosis Association, after careful study of all research work being carried on in that field of work, has assigned first rank to the investigations of Dr. Eugene L. Opie, professor of pathology in the school of medicine, Washington University, St. Louis, and in recognition of his work has awarded him a grant of \$3,000 for the twelve months beginning Nov. 1, 1922, for the further prosecution of his researches.

#### NEBRASKA

**Personal.**—Dr. Henry J. Lehnhoff, Lincoln, has been reappointed a member of the educational examining board in medicine.—Dr. Stuart A. Campbell, Norfolk, has recently returned from the Augustana Hospital, Chicago, where he underwent an operation for caries of the maxillae.

**County Societies Elect Officers.**—At the annual meeting of the Phelps County Medical Society at Holdrege, December 12, Dr. Guy W. Clark, Bertrand, was elected president and

Dr. Jay A. Magill, Holdrege, was elected secretary of the society.—Drs. David D. Stonecypher, Peru, and Isaiah W. Irvin, Auburn, were elected president and secretary-treasurer, respectively, of the Nemaha County Medical Society at the annual meeting, December 13.

#### NEW YORK

**To Honor Memory of Physician.**—The Taxpayers Association of Canarsie have requested that the place be named "Estabrook" in honor of the late Dr. Curtis G. Estabrook, who died, January 1.

**Graduates Hold Reunion.**—A reunion of the class of 1919 was recently held at Long Island College Hospital, Brooklyn. Dr. James Egbert, president of the Long Island College Hospital; Dr. Frank D. Jennings, president of the Kings County Medical Society, and Drs. John O. Polak and William A. Jewett, were among the speakers.

**Typhoid in Queens Village.**—An outbreak of typhoid fever in Queens Village, Queens County, in which twenty-seven cases have been reported and two deaths have occurred, has been traced to a confectionery store near the public school. Thirteen children who attend the school and several adults in the neighborhood are victims, and it is believed that the epidemic was caused by ice cream served at a recent festival in the school. The store that sold the ice cream has been closed.

**Formation of New Society.**—The Eastern New York Eye, Ear, Nose and Throat Association was recently organized by men interested in these specialties in Troy, Albany and Schenectady, in order that mutual interchange of subjects might be made. Meetings will be held the third Wednesday of each month, alternately in the different cities. The following officers were elected: president, Dr. Eugene E. Hinman, Albany; vice president, Dr. John J. O'Brien, Schenectady, and secretary-treasurer, Dr. Frank M. Sulzman, Troy.

**Chiropractor Fined.**—Mrs. Stella Kubista, whose license as a midwife was revoked for illegal practices by the state department of health, and now a chiropractor, was placed on trial, November 29, at Buffalo, on the charge of performing illegal operations on a number of girls. After selection of the jury she pleaded guilty to the charge of assault in the second degree. Judge Dudley fined her \$500, and sentenced her to serve from two and one half to five years in Auburn Prison, sentence suspended during good behavior. The district attorney's office and the health department are cooperating in stamping out this practice, and only recently two women were sentenced to Auburn for terms of from ten to fifteen years.

#### New York City

**Harvey Society Lecture.**—The fifth Harvey Society lecture will be delivered by Dr. Bela Schick, professor of pediatrics, University of Vienna, at the New York Academy of Medicine, January 27. His subject will be "The Prevention of Diphtheria."

**Bronx Officers Elected.**—At the annual meeting of the Bronx County Medical Society Dr. Joshua H. Leiner was elected president; Drs. Edward C. Podvin and Simon M. Jacobs, vice presidents; Dr. Isadore J. Landsman, secretary, and Dr. Jacob Adlair Keller, treasurer.

**Health Exhibition.**—The educational health exhibition held last year at the Grand Central Palace will be held there again, January 22-25, as a part of the campaign of the health department to make New York a healthy city. Each day will have a special feature, and every city department will help to make these features both interesting and instructive.

**Establish Nurses' Training in France.**—At a meeting of the American Committee for Devastated France, recently held in this city, it was announced that the first adequate and modern training school for nurses has been established in France. The committee will assume charge of this work for several years to come, not only because of France's inability to finance the work, but also because public health nursing is not well established in France, and teachers are few.

**City Death Rate for 1922.**—The number of deaths in New York City in 1922 increased by 5,432 over those in 1921, and there was a decrease of 4,557 births and 2,654 marriages. During the year, there were 69,689 deaths reported, with a rate of 11.93 per thousand of the population, as compared with a rate of 11.17 in 1921. This increase in the number of deaths is due to two severe epidemics of measles in the early part of last year and to the reappearance of influenza.



There were 129 deaths from typhoid fever, as compared with 123 in 1921. To influenza were attributed 869 deaths, compared with 384 for the preceding year. There were 5,944 deaths attributed to cancer, as compared with 5,573, an increase of 371. The number of deaths from nephritis increased by 343, and deaths from accidental causes increased 189. There were 337 homicides, as compared with 303 for 1921. There was an increase of 1,174 in deaths of children under 5 years of age. The number of deaths from measles was 976, as compared with 165 for 1921. The greatest increase was among the respiratory diseases, there being an increase from pneumonia alone of 2,317 over the number of deaths from that cause during the preceding year. Organic heart diseases also showed an increase.

#### OHIO

**Cleveland Academy of Medicine.**—At the annual meeting of the academy, the following officers were elected for the ensuing year: president, Dr. Clyde L. Cummer; president-elect, Dr. J. E. Tuckerman; vice president, Dr. Marion A. Blankenhorn, and secretary-treasurer, Dr. Harry V. Paryzek. In addition, the council will include Dr. Lester Taylor, formerly secretary-treasurer, and Dr. John Philips, ex-president.

**Health Legislation Asked.**—The special legislative bulletin of the Ohio Public Health Association recently issued outlines the legislative efforts which will be made by the association this year. A proposal will be made to amend the administrative code relative to the method of appointment of the director of health; there will be opposition to any attempt to amend the Hughes-Griswold local health law which does not strengthen the present health administration; more adequate state provision for promotion of mental hygiene will be advocated, and there will be opposition to any proposals which seek to weaken the state medical practice act.

#### OKLAHOMA

**Annual Medical Meeting.**—The annual banquet of the Logan County Medical Society was held in Guthrie, December 20. Following the banquet, Dr. Charles B. Barker was elected president of the society for 1923; Dr. Henry W. Larkin, vice president, and Dr. John L. Houseworth, secretary-treasurer.

#### OREGON

**Former Dean is Honored.**—At the annual banquet of past presidents of the Portland City and County Medical Society, December 20, an oil painting of Dr. Simeon E. Josephi, first president of the society (1884) and first dean of the University of Oregon Medical School, Portland, was presented to the members. The donor was Dr. J. Guy Strohm, president of the society. The portrait will be hung in the proposed new building of the medical school on Marquam Hill. Dr. W. T. Williamson made the presentation speech, and Dr. Richard B. Dillehunt, dean of the medical school, responded. Dr. Josephi spoke of the organization of the university medical school in 1887, in a small shack, and of his work as dean of the school for twenty-five years. Following the banquet, officers of the medical society were elected for the ensuing year as follows: president, Dr. George Parrish, city health officer of Portland; vice president, Dr. Calvin S. White; secretary, Dr. Harold C. Bean, and treasurer, Dr. Kittie Plummer, both the latter being reelected.

#### PENNSYLVANIA

**Personal.**—Dr. Francis Victor Laurent, Pittsburgh, who recently returned from a trip devoted to the study of the effect of climate on the organs of respiration, in which he traveled 30,000 miles by land, sea and air, in Europe, Africa and Asia, will leave this month on another voyage for research in the waters around South America.

**Society Banquets.**—The annual banquet of the Lancaster City and County Medical Society was held, January 3. Officers elected for 1923 previous to the banquet were: president, Dr. H. C. Kinzer, and secretary-treasurer, Dr. Charles P. Stahr. The annual banquet of the Berks County Medical Society was held in Reading, January 9. Drs. Dorsett, Beardsley, Rugh, Burr and McCrae gave addresses.

**Entire Health Board Ousted.**—The board of health of East Pittsburgh has been discharged and a new board appointed by Chairman of Council Carrigan, as a result of a report by the health and garbage committee that insanitary conditions

which existed at a dwelling had remained unremedied, notwithstanding complaints to the board. A motion was adopted to discharge the board and the chairman of council appointed Drs. Louis Weiss, Albert R. Trevaskis, John E. Newhouse, J. H. Lanigan and D. C. Mahoney on the new board. Drs. Trevaskis and Newhouse were members of the discharged board.

#### Philadelphia

**France Honors Physicians.**—At a luncheon given by Dr. Etienne Burnet, special representative of the French republic, January 3, in Philadelphia, Dr. Charles E. Sajous was made an officer of the French Legion of Honor, and Drs. James M. Anders and Francis X. Dercum, chevaliers of the Legion of Honor.

**Philadelphia Clinical Association.**—At the annual meeting of the association, recently, Dr. Charles S. Barnes was elected president; Drs. Louis H. Jacob and Frederick C. Hutton, vice presidents; Dr. William Hersey Thomas, treasurer, and Dr. James F. Donnelly, secretary.

**Philadelphia Death Rate Higher.**—The death rate in the city for 1922 was higher than that of the preceding year, while the birth rate, as recorded, was smaller according to the state department of health. It is stated that physicians have been negligent in recording births, as a canvass by nurses in the department in one section of the city brought to light 400 unregistered births. This condition has caused the health director to file complaint with the state authorities. The total of deaths from all causes was 24,990, an increase of 1,286 over 1921. There was a drop of nearly 3,000 in the number of births. Deaths from vehicular accidents of all kinds during 1922 totaled 289. The number of persons injured was 8,413. Saturday and Sunday are not included in these tabulations.

#### SOUTH CAROLINA

**Personal.**—Dr. Bayliss H. Earle, Greenville, retired surgeon, U. S. Public Health Service, has been appointed health officer of the county to succeed Dr. Eugene O. Chimene, who resigned recently.

**New Whisky Endorsements.**—It is announced by Dr. James A. Haync, state health officer, that hereafter he will discontinue the issuance of endorsements of requests for whisky to be used for medicinal purposes. There is a conflict between state and federal laws as to the issuance of permits, and the state law being the stricter, forbidding druggists to honor whisky prescriptions, Dr. Hayne announces that only the state law will be observed by him, owing to a recent ruling of the U. S. Supreme Court to the effect that, when two laws conflict, the more stringent is to be observed.

#### SOUTH DAKOTA

**Personal.**—Dr. Louis Holtz, Aberdeen, former city health officer, is leaving for Europe, where he will spend a year attending clinics in Germany, Austria, France and England. Dr. Guy R. Duer of Stoughton, Wis., will succeed Dr. Holtz in his practice. Dr. Stephen A. Donahoe, Sioux Falls, was recently elected president of the South Dakota Seventh District Medical Society.

#### TENNESSEE

**Bill Proposed to Help Addicts.**—Legislation will be introduced at the next session of the legislature, by Judge Fitzhugh, providing for power to sentence drug addicts without means to secure medical aid, to a county and city institution. It is hoped to have a farm in operation in the early spring, so that all addicts that are in desperate need of relief may be given treatment at an institution, which will later become self-supporting.

#### TEXAS

**New Children's Clinic.**—A building is under construction at the Richmond Freeman Hospital, Dallas, at a cost of \$60,000, including equipment. The new addition will be devoted to a children's clinic.

**County Elections.**—Dr. Lewis W. Pollock, Temple, was elected president of the Bell County Medical Society recently. Ellis County elected Dr. Samuel L. Wadely, Palmer, president of the medical society. Drs. Elbert D. Rice and Hugh H. Wisdom were elected president and secretary, respectively, of the Smith County Medical Society. Williamson County Medical Society elected Dr. Melton R. Sharp, Granger, president, and Dr. W. G. Pettus, secretary.



## PHILIPPINE ISLANDS

**New Health Regulations.**—All cooks and house servants in Manila must report to the health authorities of the city for regular inspection and certification that they are free from disease, under new regulations issued by the health department in its campaign against contagious diseases. It is believed that many epidemics and much of the communicable disease are spread by cooks handling food, especially in the restaurants. —Recently a municipal ordinance was effected in Manila to prevent small stores and shops from giving drinking water to their patrons, since such water, usually taken from infected wells, was a constant source of infection in the spread of typhoid.

## PORTO RICO

**Medical Association of Porto Rico.**—At the twenty-first annual meeting of the association, held at Ponce, December 16-17, under the presidency of Dr. P. Gutierrez Igaravidez, San Juan, the following officers were elected for the ensuing year: president, Dr. A. Martinez Alvarez, San Juan; vice president, Dr. Osvaldo Goyco, Ponce; treasurer, Dr. Jacinto Avilés, San Juan, and secretary, Dr. Agustin R. Laugier, San Juan. Both the secretary and treasurer were reelected. San Juan was selected for the 1923 meeting.

## CANADA

**Vital Statistics.**—In the city of Toronto, Ont., during 1922, there were 13,304 births and 6,105 deaths, as compared with 13,976 births and 5,867 deaths in 1921. —London, Ont., had 1,516 births and 970 deaths in 1922, against 1,536 births and 1,003 deaths in 1921.

**"Insulin" Accepted by Great Britain.**—It is announced by the *Canadian Medical Association Journal* that the medical research council of Great Britain has accepted the patents for the manufacture of "insulin," the pancreatic extract isolated by Dr. Banting and Dr. Best in the physiologic laboratory at the University of Toronto. The council will act as sponsors for the distribution of insulin in Great Britain.

**Canadian Association of Nurses.**—At the annual convention of the Canadian National Association of Nurses held in Edmonton, it was decided to establish a national office for the association, with a paid executive secretary in Winnipeg. —The nurses of Canada are collecting \$65,000 for the purpose of erecting a memorial to the Canadian nurses who lost their lives in the World War. This memorial will be erected in Ottawa.

**Memorial to Colonel McCrae in France.**—The Imperial Grave Committee have finally accepted the plan for a memorial to the late Col. John McCrae, C. A. M. C., in Wimereux Cemetery, France, for which funds have been subscribed by the Canadian Clubs of Canada. The suggested memorial is in the form of a stone seat at the entrance to the cemetery, at one side of which there is to be a house of records and at the other a shelter, both handsome structures. On the seat will be inscribed a verse from Colonel McCrae's poem "In Flanders' Fields."

**Personal.**—Dr. Violet Amelia Shaw, Toronto, sailed recently for China, where she will act as a medical missionary. —Dr. Frederick G. Banting has been awarded the Reeve prize by the University of Toronto for his research work on the treatment of diabetes by "insulin." —Dr. Dorothy M. Trapp, Toronto, has been appointed a member of the resident staff of the Toronto General Hospital. —Dr. Joseph Edgar Bates has been awarded the Ellen Mickle fellowship in the University of Toronto, and will continue his work in the department of pathology. —Dr. Alexander E. Garrow, Montreal, has recently returned from Europe. —Dr. Ronald Levesque, Montreal, sailed recently on the *Empress of France* for Liverpool.

## GENERAL

**Veterinarians Convene.**—The fifteenth annual conference of the veterinarians was held at the New York State Veterinary College at Cornell University, Ithaca, N. Y., January 11-12. Dr. Livingston Farrand, president of Cornell University, gave the address of welcome. Prof. C. L. Durham spoke on "Veterinarians in the Days of the Romans." Medical and surgical demonstrations were given during the afternoon of the 12th.

**Western Surgical Association.**—At the annual meeting of the association in Minneapolis, December 8-9, the following officers were elected for the ensuing year: president, Dr.

Horace G. Wetherill, Denver; vice presidents, Drs. Willis D. Gatch, Indianapolis, and Clarence G. Toland, Los Angeles, and secretary-treasurer, Dr. Warren A. Dennis, St. Paul. The next meeting of the society will be held in December, 1923, at Colorado Springs, Colo.

**Preventable Accidents.**—Approximately 8,000 persons were killed in automobile accidents in the fourteen states where statistics on such fatalities are kept, according to the United Press. This has broken all records for former years, and fully 95 per cent. of the accidents, traffic experts estimate, were of the "preventable" type. New York was first, with 2,000 persons killed, and Pennsylvania second, with a casualty list of 1,100. Illinois and California ranked third in the list, with 1,000 killed in each state from automobile accidents.

**Bill Proposed in Senate to Define Intoxicating Beverage.**—A bill introduced by Senator Spencer of Missouri would provide for the appointment of a commission to investigate and determine what alcoholic content in a beverage makes the beverage intoxicating. The commission is given power to summon witnesses and to conduct experiments to enable it to report findings on the general subject. Senator Spencer asserted that the measure would determine "in a fair and scientific manner, as far as human investigation can determine the question, what amount of alcohol does make a beverage intoxicating."

**International Cooperation on Illicit Use of Narcotics.**—Col. O. G. Forrer, former assistant director of the prohibition bureau's narcotic division, has been sent to Europe to confer with foreign governments for the purpose of stopping the illicit shipment of drugs and narcotics into the United States. He carries full credentials from the state department to similar officials in several countries. His plans call for conferences with the authorities in Italy, Spain, France and possibly Germany, with a view to securing their cooperation. The decision to carry the antidrug campaign overseas was reached on information obtained by the federal authorities with the recent seizure in New York of a record shipment of morphin and cocain which had just been landed from a transatlantic steamer.

**The Voight Filled Milk Bill Favorably Reported.**—The Voight filled milk bill, which has passed the House of Representatives, has been favorably reported to the Senate from the Senate committee on agriculture. It is one of several measures demanded by the "farm bloc" Senators for passage at the present session of Congress. The bill defines filled milk as "any milk, cream or skimmed milk, evaporated, concentrated or dried, to which has been added any fat or other milk fat so that the product is in imitation or semblance of milk, cream or skimmed milk." The bill is directed particularly against manufacturers who combine skimmed milk and coconut oil, and sell it as an imitation of evaporated milk. The bill declares such filled milk is "an adulterated article of food injurious to public health, and its sale constitutes a fraud upon the public." Its shipment in interstate commerce is forbidden under a penalty of \$1,000. The committee's report to the Senate states:

Your committee does not doubt that the sale of filled milk as at present carried on is a violation, if not of the letter, of the spirit of the pure food and drugs act. This act cannot regulate the conduct of the retail dealer. He can buy this compound for about 3 cents per 1-pound can less than he is obliged to pay for the genuine article. Many instances were brought to the attention of your committee where retail dealers advertised the compound as "Hebe milk," "Silver Key milk," etc., and investigations conducted in many of our large cities reveal that the dealers were selling the compound as being as good and better than regular evaporated milk. It was shown that the compound was largely sold in sections of cities inhabited by people unable to read the label and people of limited means.

## LATIN AMERICA

**Medal to Guiteras.**—The *Médica* of Matanzas relates that Dr. Juan Guiteras is living a quiet, rural life since his retirement from the charge of the national public health service in Cuba. On the occasion of the recent Sixth Latin-American Medical Congress at Havana, the Sociedad de Estudios Clínicos presented Dr. Guiteras with a gold medal as a tribute to his distinguished services to science. The address on the presentation of the medal was by Dr. Vicente Pardo Castello, followed by one of the delegates from Brazil to the congress. They spoke of Guiteras' work on yellow fever and his trip to Africa in 1916 to study epidemics under the auspices of the Rockefeller Foundation, and especially of his share in reducing the death rate from tropical diseases, not only in Cuba but also throughout the world.

**Personal.**—Dr. Julio de Novaes has been appointed director of the Rio de Janeiro public health service in the place of



Prof. Luiz Barbosa.—Dr. Federico Córdova was presented recently with a gold medal by the Medicolegal Association of Cuba, as a tribute to his fifty years of service as medicolegal consultant in the municipality of Havana.—Dr. Manoel de Abreu has returned to Rio de Janeiro from Europe, where he was sent on an official mission to study roentgen-ray installations, in view of the roentgen laboratory to be installed soon in the Emergency Hospital.—Dr. Julião do Amaral has been elected president of the newly organized Medical Club at Rio. Dr. Queiroz Lopez and Dr. G. de Figueiredo were the two secretaries elected. The *Folha Medica* states that fifty-six physicians signed as founders of the society. The committee to draw up the constitution includes, besides the officers, Drs. Lameira Ramos, A. F. dos Santos, H. Machado Silva and Eudoxio dos Santos.—Dr. Mario d'Utra e Silva has returned to Rio after five years abroad.—Dr. J. T. Borda was recently tendered a banquet by his friends in celebration of his appointment to the chair of psychiatry at the University of Buenos Aires.

**Four Years of Public Health in Brazil.**—The retiring president of Brazil has published a review of what has been accomplished in the four years of his incumbency. The *Folha Medica* reproduces the part devoted to public health matters. The retiring president organized the national public health service on a new and comprehensive basis. There are now four tuberculosis preventoria in Rio and thirteen for leprosy and venereal disease, and twenty-seven others have been founded elsewhere in the country. The milk supply, and the sanitary service of the merchant marine were the subject of special regulations, and a laboratory for food inspection was founded. Several new hospitals were organized and an old asylum was transformed into a modern hospital of 250 beds, with a model training school for nurses. Fourteen states now have antivenereal disease stations and two more will soon have them. The system of Prophylaxis Rural to combat malaria, etc., has been installed in fourteen states; and the Guinle-Gaffrée Foundation has provided four dispensaries in Rio and two others are under way, as are also the plans for a 200 bed hospital. An army convalescent home was recently inaugurated; and the first public hospital for the tuberculous is soon to be thrown open, and a second one is already under way. These three institutions are at an altitude of 407, 600 and 820 meters, respectively.

## FOREIGN

**Royal Institution.**—At a general meeting, December 4, with Sir James Crichton-Browne in the chair, Sir Arthur Keith was elected secretary to succeed the late Col. E. H. Grove-Hills. Professors Urbain (Paris), Ehrenfest (Leyden), Knudsen (Copenhagen), Bjercknes (Christiania), and Dr. Irving Langmuir were elected honorary members.

**Biologic Neuropsychiatric Reunions.**—Under this heading, a series of conferences have been organized at Paris for physicians to inspect for themselves the new specialist procedures in diagnosis and treatment of nervous and mental disease. The new procedures will be demonstrated by experts and moving pictures, and questions answered on general biology as applied to neuropsychiatry. Dr. A. Brousseau, Asile clinique Sainte-Anne, is in charge of these "reunions," which are to be held at intervals during the winter.

**Infectious Diseases in Italy.**—The statistics for 1921 have just been published. They show a total of 278 cases of epidemic (lethargic) encephalitis, but only eighty-six cases of epidemic meningitis. There was a notable decrease in the new cases of pellagra, but at Ronciglione, in the Rome District, about 1,000 cases of spirochetal jaundice were reported. There were 25,527 cases of typhoid reported; in some places, this amounted to 15 or 19 per 10,000 inhabitants. In Umbria, Venice, Tuscany and Calabria, it averaged 10 to 14 per 10,000.

**A Medical Flyer in Belles Lettres.**—A group of physicians has founded an artistic and literary review as the organ of the Groupement international des médecins artistes et littérateurs. Dr. Giuliani of Paris is the director, and the review publishes nothing that has been published elsewhere. The October issue contains a novelette by Dr. L. Graux of Paris, a serial novel by Dr. F. Brexals, a play by Dr. G. Trezel, and poems. The name of the review is *Epidaure*, and the address of Dr. L. Giuliani is rue Monge 62, Paris, France. The temple of Aesculapius was at Epidauros.

**Military Medical and Chemical Congress.**—The Second International Military Medical and Chemical Congress will be held in Rome, May 28-June 2, 1923. The following

subjects will be discussed: Evacuation, collaboration between civil and military authorities on questions of health, the treatment of penetrating wounds of the chest and their sequels, and chemical laboratories in the field, their rôle and methods. The official organ of the meeting is the *Giornale di Medicina Militare*. Communications regarding the meeting should be addressed to the Ministero della Guerra (Minister of War), Via XX Settembre, Rome, Italy.

**New Curriculum at University of Paris.**—A new plan for medical courses will be instituted at the University of Paris with the opening session of 1923, it has been announced by Professor Roger, dean of the school of medicine. The outline as it pertains to the different years is as follows: first year: morphologic studies, as represented by anatomy, histology and embryology; second year: study of function, as represented by physiology, biochemistry and pharmacology; third year: studies in pathology, as pathologic anatomy and histology; experimental pathology, surgical pathology, bacteriology and parasitology; fourth year: special pathology, diagnosis, clinical medicine, surgery and obstetrics; fifth year: first semester, hygiene, public health, clinical specialties; second semester, elective, general "perfection," and sixth year: hospital intern service.

**Medical News from China.**—Dr. Edward M. Merrins, following a prolonged illness, has returned to his duties as editor of the *China Medical Journal*. Dr. Lincoln, St. John's University, Shanghai, acted as editor in Dr. Merrins' absence.—The Hunan-Yale College of Medicine opened its school session, September 25, with an enrolment of eleven new students. The following additions have been made to the faculty: Drs. R. M. Atwater, A. B. Dayton, Louise W. Farnam, William C. Grosvenor, W. S. T. Neville and Chow F. Tang.—Dr. W. K. McCandliss has gone to Kichow, where he will superintend the erection of new hospital buildings. While traveling on the North River from Canton and Lienchow, he and his party were attacked by bandits and robbed of all their possessions, including their clothing.—The Hongkong University announces that it needs additional quarters for its students. Plans have been prepared for the enlargement of St. John's and Missionary halls at a cost of \$196,000. A campaign will be conducted to raise the necessary amount.—Dr. L. F. Heimburger, formerly of Weihsien, has been appointed professor of dermatology at the Shantung Christian University School of Medicine, Tsinanfu.—It is announced by the Amalgamated Association of Cigarette Shop Unions that red-headed matches (presumably consisting of a mixture of red phosphorus and antimony trisulphid) have been responsible for a number of suicides in China. A resolution was passed against further production of them.—Dr. Joseph L. Harvey, resident physician in the John G. Kerr Hospital for the Insane, has been appointed roentgenologist to the Canton Medical College.—During August and September, the number of cases of cholera admitted to the Municipal Isolation Hospital for Chinese and to the two Chinese Red Cross cholera hospitals was 283, with thirty-one deaths.—Arrangements have been completed for the translation of the British Pharmacopoeia into Chinese, at an approximate cost of \$5,000, the money being guaranteed by the wholesale druggists and manufacturing chemists of Great Britain.—Nearly half a million taels' worth of opium and cocaine was seized by the customs officers at Shanghai, from Japanese steamers entering that port recently, it is reported.—The American Church Mission Hospital at Changshu was formally opened in September. Dr. Walter H. Port is superintendent.—It is reported that no less than twenty-eight missionaries and several natives are at present suffering from sprue in Korea, and that typhus is killing thousands of Koreans at Pingyang.

## Deaths in Other Countries

Dr. Samuel Hammond in Queensland, Australia, aged 86.—Dr. Frederick Bryan, alienist, in Scotland, suddenly from angina pectoris.—Sir Isaac Balfour, M.D., for thirty-four years professor of botany at the University of Edinburgh, aged 69.—Dr. C. A. L. Rademaker of Amsterdam, aged 61.—Dr. Felix García, medical inspector for the port of Matanzas, Cuba.—Dr. Mahaux of Brussels, shot in his home by an insane woman in revenge for his testimony as to her mental condition.—Dr. G. R. Marone of Acireale, who had been decorated several times for distinguished service in the Libyan campaign and during the World War.—Dr. J. J. Maats of Purmerend, aged 81.—The *Revista de Medicina y Cirugia* of Havana mentions the death of Dr. Francisco Rayneri at an advanced age. He had been a medicolegal expert for the city of Havana.



## Government Services

### The Army School of Aviation Medicine

The Army School of Aviation Medicine completed its three-month course at Mitchel Field, L. I., last week, according to information given out by the Surgeon General. Seven officers of the Army Medical Corps and eleven officers of the Navy Medical Corps were graduated, thereby qualifying to serve at flying fields and other places in connection with aviation. The graduation exercises were attended by Major Gen. Merritte W. Ireland, Surgeon General of the Army; Major Gen. Mason M. Patrick, chief of the Army Air Service, and representatives of the bureau of medicine and surgery and the bureau of aeronautics of the Navy. The graduation class included: Majors B. B. Warriner, W. S. Woolford, and J. F. Duckworth, and Captains I. J. Gibson, D. M. Blakely, B. J. Peters, and C. V. Hart of the Army Medical Corps; and Lieuts. A. C. Smith, R. P. Henderson, F. R. Bealer, J. C. Adams, F. H. Clements, J. R. Poppen, G. L. McClintock, W. W. Davies, W. H. Wynn, J. D. and C. C. Ammerman of the Navy Medical Corps. The following officers of the Naval Medical Corps have been detailed to take the next course, commencing January 15: Lieut.-Com. Frederick Ceres and Lieuts. Bertram Groesbeck, Jr., George D. Thompson, Robert G. Doris, Stuart J. Trowbridge, Clinton G. DeFoney, Louis E. Mueller, John L. Farmer, Grover C. Wilson, George T. Dill and Earl E. Dockery. It is expected that about six officers of the Army Medical Corps will be detailed to take the instruction.

### Policy as to Annual Physical Examination Changed

Circular No. 211, the formal order for the annual physical examination of officers and warrant officers of the army, has been issued. The order requires that all officers be physically examined during the calendar year 1923, and that such examination be held, as far as practicable, in the month of January. It may be held at a later period for the purpose of avoiding expense or for other good reasons. The primary purposes of these examinations are disease prevention and the conservation of health, to be accomplished largely by the early detection and treatment of latent physical defects. In former years, these examinations were often the basis for retirement of army officers. The present policy of the War Department is to employ these examinations not for the purpose of disqualification, but to locate incipient and obscure physical and mental defects which may impair the health of the officer, and to remedy and overcome defects which, if allowed to continue, would result in disqualification.

### U. S. Veterans' Bureau Hospital Construction

During the calendar year 1922, six additional Veterans' Bureau hospitals were established, three of which, totaling approximately 1,142 beds, are for tuberculous patients; two others, totaling 705 beds, are for neuropsychiatric patients; and one hospital, furnishing 165 beds, for general cases. In addition to these, there were added to existing veterans' hospitals throughout the year a total of 1,072 new beds at four different hospitals, 300 of which were for neuropsychiatric cases, the remainder for tuberculous cases. At present, there are under construction or being planned fifteen new hospitals, totaling 5,059 beds, of which 1,878 are for tuberculous patients; 2,931 for neuropsychiatrics, and 250 for general cases. In addition, there are under construction, at four existing U. S. Veterans' Bureau hospitals, new modern hospital units which will provide for a total of 1,268 beds, of which 1,068 will be for neuropsychiatric cases. This excludes such hospital beds as were opened during the calendar year.

### Advisory Committee on Education of Sanitarians

At the meeting of the advisory committee to the Surgeon-General on the Education of Sanitarians and the Future of Public Health in the United States, held in Washington, D. C., Jan. 3, 1923, the following were present: Dr. Haven Emerson and Dr. Wickliff Rose of New York, Dr. Winslow of New Haven, Dr. Howell and Dr. Welch of Baltimore, Dr. E. G. Williams of Virginia and Dr. A. J. McLaughlin of the Public Health Service. Among other matters discussed was the question of holding a joint meeting with the Committee on Medical Education and Licensure and Public

Health and Hospitals of the American Medical Association in Chicago on March 7. Favorable action was taken and the program is now being arranged. New members added to the advisory committee are Dr. William H. Park of New York, Dr. A. C. Abbott of Pennsylvania, Dr. Frederick W. Sears of New York, Dr. John Sundwall of the University of Michigan, Prof. C. E. Turner of Boston, Dr. Lindsley R. Williams of New York and Dr. Henry Vaughan of Detroit.

### Commissioned Status for Sanitary Engineers

Sanitary engineers in the public health service, under the terms of a bill introduced by Senator Watson of Indiana, would be given the pay, allowances and rank of medical officers. There is a proviso in the bill requiring them to pass an examination conducted by commissioned officers of the service.

### Board to Recommend Medals

Work of the board of officers of the Army convened in Washington recently to recommend officers and enlisted men for medals and other awards for distinguished and exceptionally meritorious service is progressing satisfactorily. Under the law, decorations for World War service must be awarded before April 1, next. Several members of the Medical Corps, it is said, are being considered by the board for awards.

### Medical Officers Recently Retired

Ninety-two officers of the Army have been found incapacitated for active service and have been transferred to the retired list, according to an announcement made by the War Department. The list includes the following members of the medical department of the Army:

Col. James S. Wilson, Medical Corps.

Lieut.-Cols. George H. R. Gosman, William M. Smart and George F. Juenemann, Medical Corps.

Majors Henry N. Stilphen, Joseph L. Siner, Frederick S. Macy, John P. Kelly and Corydon G. Snow, Medical Corps.

Capt. Zera E. Bolin, Medical Corps.

Cpts. Carl Graner and Edward A. Lovelly, Jr., Medical Administrative Corps.

### Women's Advisory Council Meets

There was a meeting of the Women's Advisory Council to the Public Health Service in the office of the Surgeon-General at Washington, January 12 and 13. The greater part of the program was devoted to the subject of immigration in its relation to public health. Among those who accepted invitations to address the conference were: the Hon. Albert Johnson, chairman of the House committee on immigration and naturalization; the Hon. W. W. Husband, commissioner-general of immigration, and Dr. Elizabeth B. Thelberg.

### President Vetoes Bursum Bill

President Harding last week vetoed the Bursum pension bill that recently passed both houses of Congress. This measure carried increases in pensions to veterans of the Civil and Mexican wars and their widows, including nurses. The sum fixed was \$50 a month. President Harding based his veto on the ground that these pension increases would cost the government \$108,000,000. He also was opposed to paying pensions to widows who married veterans fifty years after the Civil War, as was specified in the bill.

### Hospitals Authorized

Pursuant to instructions from the Adjutant-General of the Army, the organization of a veterinary station hospital, organized reserves, to be known as Veterinary Station Hospital No. 6 (a seventh corps area unit) has been authorized.—A veterinary evacuation hospital, to be known as Veterinary Evacuation Hospital No. 7 (organized reserve, a ninth corps area unit) has also been authorized by the Adjutant-General of the Army.—Pursuant to instructions of the Secretary of War, the organization of an evacuation hospital, organized reserves, to be known as Evacuation Hospital No. 24 (St. Vincent's Infirmary Unit, Little Rock, Ark.) has been authorized by the Surgeon-General.



## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Dec. 18, 1922.

#### Protection Against Anthrax

In a previous letter, the establishment by the government of a station for the disinfection of wool and hair at Liverpool was described. A report has now been issued on the work done. The disinfection process is carried out in seven stages; the machinery for opening the bales, feeding the material into machines, disinfecting, drying, cooling and rebaling is so designed as to permit of the carrying out of all seven stages in sequence as one operation, without handling of the material by workmen. Hydraulically pressed bales, as imported, are placed on the moving platform of a feeding and opening machine, and the steel bands and canvas covers are removed. The material is delivered into the first process machine, where it is submitted for ten minutes to a dilute alkaline solution at 102 F., to remove the albuminous material by which the anthrax spores are protected. It is then squeezed through rollers and delivered into the second process machine, where it is acted on for twenty minutes by a dilute alkaline soap solution at 102 F., in two successive baths, to promote a condition of the spores in which they can be killed with ease. This stage also cleanses the material completely. It then passes through rollers into the next process machine, where the disinfection is performed in two successive baths (with rollers between) of a 2.3 per cent. solution of formaldehyd at 106 F. It again passes through rollers, and is blown by air into a drying machine, from which it is discharged into a cooling machine, and thence is blown by air into the charging box of a baling machine.

The machines containing the formaldehyd solution are completely enclosed. When they have to be entered, for example for rewrapping the rollers, the workers wear army box-respirators filled with charcoal. No ill effects have occurred among the workers. To control the efficiency of the disinfection, samples of material before and after the process are examined by an independent bacteriologist. Since proper control of the disinfection has been established, anthrax bacilli have not been found after the process, though present before it in twenty-nine of 306 samples. Bacteria other than anthrax have been cultivated after the process, but this does not necessarily indicate insufficient disinfection, though the cultivation of more than five colonies of other organisms is regarded as pointing to insufficiencies. A charge is made for disinfection, and it is calculated that this should be 3 cents a pound to make disinfection a paying proposition. The suggestion was made that by the combined use of ultra-violet and roentgen rays disinfection could be carried out, and much more cheaply. But a trial of this method showed it to be a failure.

#### The Elixir of Life Again

One learns from the lay press—for so far the medical journals have taken no notice of the subject—that Dr. Conrad Buchardi has come from Vienna to practice "the Steinach operation of restoring youth." We are told that he has operated on nine patients—six women and three men—and that his engagement book is full. In a press interview, Dr. Buchardi has said: "I have just treated a woman of 67 with the roentgen rays, and I am hopeful of the result. The operation takes about half an hour. Women have to be treated three or four times. For men there is just a simple gland operation, and it takes the patients from one to three months to regain their lost energies. The operation can be

repeated once. There may be a first operation on one side which will restore from 5 to 20 years of age. At the end of that period the other gland can be treated and the patient obtain another five to twenty years' lease of life. After that, old age comes on in the ordinary way and there is no sudden collapse." Dr. Buchardi states that film and theatrical people, to whom looks mean so much, are seeking his services. He alleges that he has operated in Vienna and Germany on Englishmen and Americans "with complete success." Why Germans have not participated in the benefits he can confer he does not explain. Provided "decay has not gone too far," the operation can be performed up to the age of 70. He was reminded of the operation on Mr. Wilson, who died suddenly on the night before he was to lecture in London on his rejuvenescence by Steinach, but he made no comment.

#### The Indianization of the Indian Medical Service

In previous letters, the effect on the Indian medical service of the government policy of extending the rights of Indians was described. This service at one time offered such opportunities for research and such excellent emoluments that it was eagerly entered by the ablest young physicians after graduation. There was a very difficult competitive examination at which only the highly competent stood a chance. The government still requires the services of European physicians, but the desire to enter the service has so diminished that, instead of a competitive examination, the vacancies are announced in the press, and physicians are invited to apply for them. Candidates must be under the age of 32. Service as an officer in the war counts for pay promotion and pension purposes. Thus, an officer with three years' war service enters as a captain and receives \$2,800 a year. A free passage to India is provided for himself and his family. He has the right to retire at the end of five years with a gratuity of \$5,000 and a free return passage.

#### Heredity and School Education

In a lecture delivered to school teachers, Karl Pearson said that the child is made by his parents, and all that teachers can do is to temper the steel. The physician and the teacher are not going to alter to any great extent the health or intelligence of the child. That did not mean that education was not possible, but that the material was given to them, and the teacher was not going to alter it. It was impossible to say that there was any significant increase of intelligence with age between 4 and 19. Quick or sullen temper was not modified with age, nor was shyness, conscientiousness or aptitude for athletics or handwriting. Kipling's strictures on "flanneled fools at the wicket, and muddled oafs at the goal" were not justified by the facts. Athletics generally went with quickness and intelligence. Referring to physical characteristics, Pearson said that medieval writers viewed red hair with suspicion, and in morality plays Judas was always given a red beard; but red-haired boys and girls today were the most conscientious, athletic and popular.

#### Syphilis Attributed to the Hire of a Wig

An action was brought against a well-known theatrical costumier in which syphilis was stated to have been contracted in a novel way. The plaintiff, a man of 33, went to the defendant's shop to hire a wig for the part of a woman at a concert for a discharged soldiers' fund. He was shown a number of wigs, which appeared to be kept in a heap in a drawer. He tried on one which had evidently been used before, because grease paint still adhered to the lining. The wig was prepared for him, and he wore it three times. Soon afterward a sore appeared on the right side of the head about where the edge of the wig would come, and later a



rash broke out. He consulted a specialist, Mr. J. E. R. McDonagh, who diagnosed syphilis, with primary sore on the head, and considered that the infection probably came from the wig. In cross-examination he said that he did not think that an abrasion was necessary for the contraction of syphilis. Another specialist, Mr. Arthur Whitfield, corroborated this evidence, and suggested that the grease paint might keep the spirochetes alive. Syphilis might be contracted in hair cutting, combing the hair or rubbing the head on a pillow. Evidence was given for the defendant that his wigs were cleaned in a rotary machine and soaked in benzine, which would remove all grease as well as dirt. A wig returned from hire was never handed to another customer until it had been cleaned. The judge pointed out that the syphilis might have been contracted in the other ways mentioned. The jury was not satisfied that the evidence proved infection from the wig, and gave a verdict for the defendant.

#### The Prevention of Anthrax

The International Advisory Committee on Anthrax, sitting in London, has adopted a report by its subcommittee on the criteria to be employed in settling a list of countries to be exempted from compulsory disinfection of wool, hides and animals. The report recommended exemption of those countries in which the raw material had not caused any cases of anthrax in the importing country for five years, unless anthrax spores had been discovered in the raw material by bacteriologic examination, and also of those countries of origin in which there was an absence of anthrax in an epidemic state among animals, or in which there was an application of strict measures for stamping out any outbreak at the source.

#### Insurance Against Smallpox

The outbreak of smallpox at Poplar has been successfully checked, and only scattered cases have followed in London. In the whole country there have been 902 cases of smallpox in the first eleven months of 1922, of which twenty-seven were fatal. It is supposed to have been due to the importation from eastern Europe of a particularly virulent type of infection; hence its high mortality. The outbreak has given rise to a novel form of insurance. Underwriters at Lloyds have provided for financial indemnity should the assured fall a victim to smallpox within twelve months. The rates quoted are 0.05 per cent. should the applicant have been vaccinated within the last ten years, and 0.1 per cent. if there has been no such vaccination.

### PARIS

(From Our Regular Correspondent)

Dec. 15, 1922.

#### Professor Bernard's Impressions of the United States

Dr. Léon Bernard, professor of hygiene at the Faculté de médecine of Paris, at the invitation of the Rockefeller Foundation visited the principal institutions in the United States that are concerned with the advancement of public health. Recently he presented to the Academy of Medicine an account of his visit.

Bernard stated that the essential principle that lies at the basis of the organization of public health in the United States is that public health work should be administered by special functionaries termed "health officers." He emphasized particularly the large measure of authority exercised by these officers. Another thing that impressed Bernard was the fact that all the health officers are technicians, from the health officer of the village up to the state commissioner of public health. The state has organized special short courses to train small town health officers in the exercise of

their duties. For the higher positions, physicians are chosen who have completed special courses of instruction in the universities.

The three forms of activity on which the functioning of the public health services are based are the collection of vital statistics, work in experimental laboratories, and educational propaganda. All these tend to encourage the idea of early medical intervention, which is seconded and prolonged through the aid of the visiting nurse. Bernard states that, in order to comprehend the high degree of importance ascribed by American hygienists to vital statistics, which was a source of wonder to those of us who collaborated during the war period with American organizations, it must be borne in mind that, in the United States, not only do these statistics constitute a basis for investigations, in which they have become a professional necessity, as it were, but also that hygienists have the responsibility of collecting them. He explains, further, that the administration of a civil state, as we conceive of it in France, does not exist in the United States. In the cities, the states and the central government, the reports of births and deaths are made to the department of public health. The result is that, instead of these being regarded merely as the basis of simple administrative or demographic considerations, they are taken as evidence of the degree of efficiency of the public health department in question. Another result is that the filling out of death certificates, instead of being a simple formality entrusted to the family of the deceased and controlled by a physician unfamiliar with the case, must be done by the attending physician (except in cases of death by accident), who is obliged to state the cause of death. These declarations become consequently authentic documents, the collation of which gives a clear idea of the state of the public health; this also makes it possible to control the exactitude of the declarations of diseases. It will be seen how much superior this system of collecting vital statistics is to that in vogue in France, to the defects of which I referred in detail in a previous letter (THE JOURNAL, Dec. 30, 1922, p. 2244).

Speaking of the development of the laboratories in the United States, Bernard stressed the point that the work of these laboratories is not confined to the performing of clinical examinations; they are all centers of scientific research. The same spirit and the same zeal for research are found in the laboratories that make clinical examinations for the public as are observable in the laboratories of the universities or of the private institutes. The workers are encouraged by the administrators themselves to do research work, and special funds are often provided for such purposes.

Bernard praises also the progress made in the United States in instruction in hygiene, which is all the more remarkable when compared with the wretched condition of such instruction in France, where the need is so great.

As for the social scourges, the campaign that is being waged against them in the United States is more effective than in France. The means of combating tuberculosis are the dispensary with its physician and visiting nurse, the sanatorium, the special hospital and educational propaganda. Compulsory notification for all cases of pulmonary tuberculosis has been established in all the states. The campaign against venereal disease has been no less vigorous.

Absolute prohibition of alcohol is regarded by Bernard as the culminating event of social hygiene in the United States. He is quite familiar (as we all are) with the exaggerated stories, often circulated by persons with ulterior motives, in regard to contraband alcoholics, clandestine manufacture, and intoxication by alcoholics of questionable origin and by various narcotics. This should not prevent us from recognizing the great, incontrovertible fact, which rises



above these petty infractions of the law, that a country with 110 million inhabitants has accepted the interdiction of the sale and the consumption of all alcoholic beverages. One passes through good-sized cities and vast rural districts without encountering a single saloon. Under these conditions, the regular alcoholization of the masses is rendered impossible. Although accurate statistics have not been collected as yet, it can already be observed that the prisons and the hospitals for the insane have fewer inmates. It has been noted also that there has been an upward trend in the labor output, and an improvement in general conditions as affecting the life of workingmen. It may be said, therefore, that a people capable of such renunciation as regards the gratification of a desire as old as humanity itself is, indeed, a great people.

#### Insanity in Relation to the War

Dr. Paul Cassel, general secretary of the departmental committee of the war injured of the department of the North, has just published an interesting study on the subject of insanity in relation to the war, his findings being based on statistics collected in the department of the North. His statistics show that the incidence of insanity has not increased, as the result of the war. It is true, there has been a greater frequency of "melancholic states," but this increase is largely compensated for by a decrease in the number of cases of *folie alcoolique* (insanity from alcoholics). However, it must be admitted that the war has been responsible for certain cases of jacksonian epilepsy, incomplete types of exophthalmic goiter, and syndromes arising in those who have suffered brain injuries and who consequently present problems for the psychiatrist. It should be added that the effects of this terrible period of four years of war are manifested not only in the hospitals for the insane. There seems to be reason to fear that the large number of syphilitics in the army whose condition was either not diagnosed or who received inadequate treatment may cause, in the next few years, an increase in the already high incidence of general paralysis. Just as it is not feasible, at the present time, to write a history of the military events of the war, it is likewise impracticable to produce a clear account of contemporaneous medical happenings, especially when we are concerned with phenomena so delicate in their mechanism, so complex in their origin, and so variable in their evolution and their duration as are cerebral troubles.

#### The Factory Physician

Professor Cazeneuve of Lyons called attention recently to the necessity of special instruction for physicians appointed to look after the sick in large commercial chemical houses (THE JOURNAL, Nov. 25, 1922, p. 1860). In a recent number of the *Journal de médecine de Lyon*, Prof. Etienne Martin takes up the same subject and emphasizes the same need. He holds that the "factory physician," before taking on the responsibilities associated with the employment and conservation of labor, should acquire special theoretical and technical knowledge in the field of occupational diseases and industrial toxicology. It will not be necessary to create in our medical schools special chairs for this purpose. All that will be needed will be to adapt certain courses of instruction to this new function, and to assign to the professors responsible for these courses the needed collaborators and the means of carrying out this adaptation. The main thing would be to amplify the instruction in industrial toxicology and to develop further our knowledge of occupational diseases. The instruction, however, should not be confined to theoretical lectures on these subjects, but should include practical demonstrations. Professors of medical jurisprudence are, for the most part, members of the councils on public health.

They might easily use the influence that goes with their official position to secure from manufacturers the necessary authorization for their pupils who intend to become factory physicians to visit chemical plants and study conditions at first hand. Students would thus gain a practical experience that would be exceedingly valuable to them.

#### Vital Statistics for France During the First Six Months of 1922

The *Journal officiel* has just published the vital statistics for France during the first six months of 1922, and compares them with the statistics for the corresponding period of 1921:

	1922	1921
Living births.....	396,726	421,180
Deaths .....	387,681	348,329
Excess of births over deaths.....	9,045	72,851

The results, unfortunately, are quite unfavorable. The number of births has decreased, from one year to the other, by more than 25,000, while the number of deaths was increased by approximately 40,000. The net result is that the excess of births, which, in 1921, amounted to 72,851, has been reduced, this year, to 9,045. During the same period, the number of marriages decreased by nearly 45,000 (193,454 as against 238,185).

#### Election of Professor Vincent to the Academy of Sciences

At its last meeting, the Academy of Sciences elected Prof. H. Vincent as a member to fill the vacancy in the section of medicine and surgery caused by the death of Professor Laveran. Professor Vincent is a member of the faculty of the Ecole d'application de médecine et de pharmacie militaires of Val-de-Grâce. He also holds the office of general medical inspector of the army, with the rank of general of a division. He is known chiefly for his works on antityphoid vaccination, fusospirillar symbiosis (Vincent's angina), etc.

#### A New Medical School

A joint faculty of general and colonial medicine and of pharmacy has been recently established by government order in the city of Marseilles. Special emphasis will be placed, at this school, on instruction and special researches in colonial and tropical medicine. The school will not be opened until the delegates of the minister of public instruction have inspected and approved the buildings, library and general equipment.

#### Estimation of Disability in Industrial Accidents

While engaged at his regular work, a workman whose right hand was injured in the war had his left hand caught in a roller. The court of Besançon estimated at 50 per cent. the reduction in the working capacity of the man, taking as the basis "the percentage of disability usually allowed by law for the loss of the left hand" in a workman who has no other infirmity. The case was brought before the court of cassation (the highest court of France), which refused to accept the judgment of the lower court. The supreme court held that the indemnity due a workman who is the victim of an industrial accident depends solely on two factors, to wit: the wages that he was receiving before the accident, and the capacity for work that he retained after the accident. The condition of health or infirmity of the victim before the accident must not be taken into consideration. The total amount received in wages in one year furnishes the legal basis for his industrial value. More particularly, when a workman whose right hand was injured in the war loses his left hand as the result of an industrial accident, the judge may not, in fixing the indemnity to which he is entitled, take as a basis for the reduction of his capacity



"the percentage of disability usually allowed by law for the loss of the left hand"; he must consider the workman's actual condition, taking into account the almost complete incapacitation of both hands.

## BELGIUM

(From Our Regular Correspondent)

Dec. 12, 1922.

### Child Welfare in the Belgian Congo

There exists in the Belgian Congo a Ligue pour la protection de l'enfance noire. The purpose of this league is to combat child mortality on the Congo and to counteract harmful conditions that militate against the development of the native population. The headquarters of the league is at Brussels.

The activity of this league on the Congo is manifested by the organization of consultation centers for infants at all the stations where are found a physician, a hospital, a religious mission and a group of women interested in welfare work. At present, consultation centers have been regularly established at forty different stations. At these centers, babies are weighed, and receive milk, clothing and medicines.

### Bad Housing Conditions in Antwerp

The city of Antwerp has instituted an investigation of the housing conditions prevailing, and the publication of a preliminary report sheds light on the acuteness of the housing crisis.

### Anniversary of the Founding of the University of Brussels

The president announced that the commission of the foundation for the educational relief of Belgium, of which Mr. Hoover is chairman, had placed at the disposal of our alma mater a large sum of money which would not only allow the university to carry on its present plans without anxiety, but also permit the elaboration of new plans to bring all the faculties up to the level of what the Faculté de médecine would be in three years when the changes already provided for shall have been made; for it may be said that the pace for the marvelous development of the University of Brussels was set by the Faculté de médecine, for it was the first, in our capital, to expand its organization, its equipment and its institutes.

### Visiting Nurses in the Home

The association of visiting nurses of Belgium has organized a home service of visiting nurses which will permit all classes of society to enjoy the benefits, when occasion requires, of a graduate nurse. Following the request of the attending physician for such service, a visiting nurse will be sent to the home of a patient, but she may remain only such time as is required to carry out the physician's prescriptions.

### Radium in Relation to Tumors of the Mouth

Dr. Sluys recently called attention to the importance of an early diagnosis of tumors of the mouth. Dentists are the ones who can be expected to detect buccal cancers in the initial stage. We are just beginning to realize the great benefits that may be derived from early diagnosis since the application of radium in the early stages has given such remarkable results.

### The Schick Test in Relation to Antidiphtheric Immunization

Dr. Vernieuwe presented recently to the Academy of Medicine a communication on the value of the Schick test after immunization with toxin-antitoxin mixture in diphtheric rhinitis. He stated that persons suffering from ulcerative diphtheric rhinitis usually react positively to the Schick test. When treated with the specific serum, they make rapid

progress toward recovery; but as soon as the antitoxin is eliminated, the reaction becomes positive.

Antidiphtheric vaccination by the injection of an under-neutralized toxin-antitoxin mixture modifies the state of receptivity of these subjects, and immunizes them (Schick test negative). It seems even capable of preventing the micro-organisms from persisting on the mucous membrane in an inactive form. However, this finding ought to be confirmed by wider investigation before it is considered as an established fact.

This research appears to have established another important finding, namely, that the creation of an operative wound in the pharynx or the rhinopharynx of a patient with diphtheric rhinitis may produce a new focus of diphtheria. This fact must not be lost sight of in operating on this region. This fact throws light on the pathogenesis of the affection, since it shows that the presence of the micro-organism, together with the receptivity of the subject, are not sufficient to produce it; there must be also a lesion of the mucous membrane or of the tissues.

## BERLIN

(From Our Regular Correspondent)

Dec. 9, 1922.

### Serotherapy and Chemotherapy in Puerperal Fever

Professor Bumm, director of the Berlin Universitätsfrauenklinik, at a recent meeting of the Berlin Medizinische Gesellschaft discussed his treatment of puerperal fever by means of a streptococcus serum and chemotherapeutic antiseptic. Of his 120 cases of severe streptococcus puerperal fever, the mortality of which usually ranges around 50 per cent., only 1.5 per cent. resulted fatally. Bumm admits that it is hard to determine whether, in view of the fact that the condition began with a local infection of the uterine mucosa, his treatment caused the process to remain localized, or whether the same result would have been reached without treatment. However, Bumm is inclined to assume the former to be true, since, following the treatment, the fever terminated by crisis and since a diminution of the number of bacteria in the blood could be established. The changes in the puerperal secretion also supported this view.

### Welfare Work Among Patients with Venereal Disease

According to statements issued by the Dresden dermatologist Professor Galewsky, the incidence of venereal diseases in Saxony, even before the war, was greater than in other German states (excluding such large cities as Berlin and Hamburg). This condition still exists, and there has been a great increase in venereal disease, especially in the rural districts of Saxony. The percentage of women affected is much higher than formerly; according to the report of the local health insurance society of Dresden, the percentage in 1917 was 1.4, whereas in 1921 it had risen to 4.9. In Saxony there are three large special wards for venereal disease in the general hospitals of Dresden, Leipzig and Chemnitz. In the smaller cities, such as Plauen, Zwickau and Zittau, smaller services are established in a central location. In addition, there are various wards for children suffering from venereal disease. For ambulant patients there are two smaller polyclinics in Dresden and one in connection with the university clinic of Leipzig; their total number of consultations in 1920 was 8,441. The lack of polyclinics is partially compensated for by twelve consultation centers that were established in 1916 by the Landesversicherungs-Anstalt. Since the close of the war, the consultation centers of Saxony have given advice and treatment to 1,547 ex-service men and to 201 men who were still in the service. The number of consultations for the period from 1916 to 1921 was: 1916, 54; 1917, 976; 1918,



2,149; 1919, 8,133; 1920, 17,356; 1921, 24,707. In Leipzig and Dresden, special welfare centers have been established which endeavor to rescue and care for morally delinquent (or endangered) juveniles especially women and girls, without the interference of the police, and thus prevent them from taking the path that leads to ruin. The number of juveniles suffering from venereal disease, as registered in the Dresden consultation center, was:

INCIDENCE OF VENEREAL DISEASE AMONG JUVENILES

Year	Males	Females
1917.....	34	13
1918.....	52	20
1919.....	60	63
1920.....	76	122
1921.....	31	66

In addition to the welfare centers, seventeen institutions and homes of the Saxon evangelical conference have taken over the care of moral delinquents who have left school. Up to Dec. 31, 1921, 19,690 girls had passed through these institutions and homes. The welfare agencies of the Catholic Church have also been active in Saxony, but their figures do not run so high. Through the aid of the Landesverband der Deutschen Gesellschaft für Bekämpfung der Geschlechtskrankheiten (society for combating venereal disease), acting conjointly with the Deutsches Hygienemuseum, the state commission for the instruction of the people on public health problems, and the authorities in general, a campaign of enlightenment in regard to the dangers and the significance of venereal diseases has been carried on by means of lectures and exhibits in all parts of Saxony.

Personal

R. Oestreich, extraordinary professor of general pathology and pathologic anatomy at the University of Berlin, died suddenly, December 2, following an attack of apoplexy, at the age of 58. He was one of the last assistants of Rudolf Virchow, and after Virchow's death he remained at the pathologic institute under the direction of Virchow's successor, Professor Orth. He served also as prosecutor at the Augusta Hospital, having succeeded Professor Hansemann, who died several years ago. Besides several treatises on his special field of study, Oestreich published a number of textbooks on anatomicopathologic diagnosis. He was also an instructor in pathologic anatomy for students of dentistry.

Marriages

JOHN C. KASSMEYER, East Dubuque, Ill., to Miss Lillian May Minges of Dubuque, Iowa, at Oak Park, recently.

GLENN R. GROSS, Baltimore, to Miss Janet Langford of Frostburg, Md., at Washington, D. C., November 25.

JOHN SAMUEL TALLEY, Troutmans, N. C., to Miss Edith Murdock McLaughlin of Statesville, October 12.

BURTON RAYMOND WESTON, Mason City, Iowa, to Miss Dorothy Ellen White of Oskaloosa, recently.

JOHN MORTON DAVIS, Lynchburg, Va., to Miss Dorothy Talbott Thomas of Danville, November 18.

STUART W. HARRINGTON, Rochester, Minn., to Miss Gertrude Jones of Douglas, November 17.

JULIAN M. HOWE, Washington, D. C., to Miss Eleanor E. Elliott of Jackson, Miss., October 24.

FRANCIS E. PROCTOR, Allentown, N. J., to Miss Dorothy Mary Ford of Wayne, November 25.

ROBERT A. BUCHANAN to Miss Helen M. Dake, both of Wessington, S. D., December 14.

Martin Robert Broman to DR. MILDRED JESSIE ROBERTS, both of Chicago, December 28.

Deaths

**Charles Andrew Powers** ☉ Denver; died suddenly at the University Club, Denver, December 23, from cerebral hemorrhage. His body was interred in Arlington National Cemetery, Washington, D. C., in compliance with his own desire, the hour and date of the service coinciding with that set aside for the award to Dr. Powers of the distinguished service medal, which was voted him in recognition of his services during the World War. The medal was conferred posthumously by Col. Harry G. Lee, the ribbons of the decoration being pinned to the uniform in which Dr. Powers was buried. Dr. Powers was born in Lawrence, Mass., in 1858 and graduated from the College of Physicians and Surgeons (Columbia University), New York, in 1883. After serving as attending surgeon at the New York Cancer, and St. Luke's hospitals, he located in Denver in 1894. He was emeritus professor of surgery at the University of Colorado School of Medicine, and had served as surgeon at the Denver City, St. Luke's and Mercy hospitals, and the State Home for Dependent and Neglected Children; from 1908 to 1917 he was a first lieutenant in the M. O. R. C. and in 1916 went to Paris as attending surgeon of the American Ambulance Hospital Unit for French wounded. When the United States entered the war Dr. Powers was made a major and was assigned to the American Hospital at Neuilly. He received his honorable discharge in 1918 and was commissioned lieutenant-colonel, M. O. R. C., in 1919. For his services in France (notably his facial reconstruction work) he received the Belgian Order of Leopold, the Médaille de la Reconnaissance Française, the French Legion of Honor and a citation from General Pershing. Dr. Powers was president of the American Surgical Association in 1912; a member of the International Urological Society, the International Surgical Society, the American Society of Clinical Surgery, and at the time of his death was president of the American Society for the Control of Cancer.

**Erasmus Guy Hopkins** ☉ Richmond, Va.; University College of Medicine, Richmond, Va., 1899; died, December 19, at his home in Glen Allen, from carcinoma. Dr. Hopkins was born in Fredericksburg in 1877. Following his graduation he became city bacteriologist of Richmond, and served as pathologist at St. Luke's Hospital since 1907; professor of clinical pathology since 1917, and director of the clinical laboratory since 1913 at the University of Virginia Department of Medicine; laboratory director of the Retreat for the Sick and Stuart Circle hospitals; served in the M. C., U. S. Army, during the World War, in France, at Base Hospital No. 45, and at Justice Hospital Group, Toul; was honorably discharged, April 25, 1919 with the rank of major. He was a member of the American Public Health Association, the American Bacteriological Society, and Association of Military Surgeons of the United States.

**William Stephen Disbrow** ☉ Newark, N. J.; Medical Department of the University of the City of New York, 1887; for twenty years professor at the New Jersey College of Pharmacy; formerly on the staff of the Hospital of St. Barnabas and the Newark City Hospital; member, and at one time president, of the Newark Board of Health; aged 61; died, December 26, at the home of his son in Summit, from cerebral hemorrhage.

**Isaac Roscoe Goodspeed**, San Mateo, Calif.; Medical School of Maine, Portland, 1854; for ten years justice of the peace, constable, coroner and postmaster at Pescadero and associate judge of San Cruz County; for thirty-five years physician of San Mateo County; aged 91; died, December 22, at the California Sanatorium, Belmont, from senility.

**John Franklin Thompson** ☉ Portland, Me.; Medical School of Maine, Portland, 1886; member of the American Gynecological Society and the American Academy of Medicine; formerly professor of diseases of women at his alma mater; for twenty-five years on the staff of the Maine General Hospital; aged 63; died, December 27, from pneumonia.

**Sidney Kinsman Fenollosa** ☉ Pittsburgh; University of Pennsylvania School of Medicine, Philadelphia, 1902; formerly instructor of medicine at the University of Pittsburgh; on the staff of the Pittsburgh Hospital; served in the M. C., U. S. Army, during the World War; aged 49; died, December 11, from pneumonia.

**Shirley Calhoun Gage**, Waco, Texas; University of Louisville Medical Department, Louisville, Ky., 1895; member of the State Medical Association of Texas; served in the M. C.,



U. S. Army, during the World War; aged 51; died, December 19, in a local sanitarium, from mastoid abscess following an operation.

**Claude Dalby Kellam** ☉ Norfolk, Va.; University College of Medicine, Richmond, 1903; served in the M. C., U. S. Army, during the World War, with the rank of captain; formerly consulting surgeon at the U. S. Marine Hospital No. 29, Norfolk; aged 41; died, December 15, at the U. S. Naval Hospital.

**Louis Sydney Bassford Robinson**, Camp Kearney, Calif.; Medical School of Harvard University, Boston, 1901; served in the M. C., U. S. Army, during the World War; surgeon in U. S. Public Health Service Reserve, stationed at U. S. Veterans' Hospital No. 64; aged 48; died, December 17, at San Diego.

**Charles A. Wilcox**, Amboy, Ill.; Rush Medical College, Chicago, 1870; formerly mayor of Amboy; at one time postmaster of Ottawa, and coroner of La Salle County; member of the board of education; for several years surgeon for the Illinois Central Railroad Company; aged 75; died, December 23.

**Edward Lindon Mellus**, Brookline, Mass.; Jefferson Medical College of Philadelphia, 1878; member of the New England Society of Psychiatry and the American Association of Anatomists; retired thirty years ago to take up research work in neurological physiology; aged 74; died, December 17.

**Louis Willard Luscher**, Kansas City, Mo.; College of Physicians and Surgeons of Kansas City, Kansas City, Mo., 1879; member of the Missouri State Medical Association; formerly professor of surgery at the University Medical College, Kansas City, Mo.; aged 64; died, December 26.

**Lemuel Hart Neville**, Galion, Ohio; Medical College of Ohio, Cincinnati, 1894; member of the Ohio State Medical Association; aged 53; died, December 25, at the Protestant Hospital, Columbus, from acute dilatation of the heart, following an operation on the gallbladder.

**John C. Dunlavy**, Sioux City, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1879; University of Louisville Medical Department, Louisville, 1882; formerly consulting oculist to the Samaritan Hospital; aged 73; died, December 18, from heart disease.

**William Lloyd Shannon**, Vancouver, B. C., Canada; McGill University Faculty of Medicine, Montreal, Que., 1911; Medical School of Harvard University, Boston, 1915; aged 34; died, December 26, from the effects of poison, presumably self-administered.

**Franklin Watson**, Willow Grove, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1897; member of the Medical Society of the State of Pennsylvania; aged 53; was found dead in bed, December 26, from heart disease.

**Thornton Craig**, Capay, Calif.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1876; member of the Medical Society of California; aged 77; died, December 20, at the Woodland Sanitarium, Woodland, from enteritis.

**George Isaac Hemingway**, Poughkeepsie, N. Y.; University of Vermont College of Medicine, Burlington, 1897; member of the Medical Society of the State of New York; aged 55; died, December 23, following a long illness.

**John R. Wheless**, Spring Hope, N. C.; College of Physicians and Surgeons, Baltimore, 1891; member of the Medical Society of the State of North Carolina; aged 54; died, December 4, from cerebral hemorrhage.

**Samuel Gaston Huff**, Santa Ana, Calif.; St. Louis Medical College, St. Louis, Mo., 1870; formerly superintendent of the San Bernardino County Hospital, San Bernardino; aged 78; died, December 16, from senility.

**William Wesley Reed Hitchcock** ☉ Los Angeles; Rush Medical College, Chicago, 1879; Bellevue Hospital Medical College, New York, 1881; president of the California Hospital; aged 68; died, December 17.

**Robert Hall Pepper**, Huntington, W. Va.; Homeopathic Hospital College, 1885; member of the West Virginia State Medical Association; aged 60; died, December 23, following an operation for carcinoma.

**Edward F. Milholland**, Baltimore; University of Maryland School of Medicine, Baltimore, 1858; practitioner in Baltimore for more than half a century; aged 85; died, December 23, from pneumonia.

**John Dickinson Mast**, Reamstown, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1919; aged 34; died, December 12, at St. Joseph's Hospital, Lancaster, from typhoid fever.

**Orson T. Staufft**, Pittsburgh; Medical Department of Western Reserve University, Cleveland, 1883; member of the Medical Society of the State of Pennsylvania; aged 64; died, December 23.

**Maria M. Romine**, Harveysburg, Ohio; Woman's Medical College of Cincinnati, 1894; member of the Ohio State Medical Association; aged 73; died, December 16, following a long illness.

**Fred Luther Osgood** ☉ Townsend, Vt.; University of Vermont College of Medicine, Burlington, 1889; member of the board of education; aged 64; died, December 30, from pneumonia.

**George Manley Atwood**, Bradford, Mass.; Medical School of Maine, Brunswick, 1884; member of the Maine Medical Association; aged 67; died suddenly, December 23, from heart disease.

**William Vann Rumph**, Fort Worth, Texas; Memphis Hospital Medical College, Memphis, Tenn., 1904; member of the State Medical Association of Texas; aged 54; died, December 20.

**A. Marion Wassam** ☉ Galveston, Texas; Medical College of Ohio, Cincinnati, 1873; formerly member of the board of education; at one time coroner; aged 76; died, December 12.

**Michael Francis Sullivan**, Lawrence, Mass.; College of Physicians and Surgeons, Boston, 1891; member of the Massachusetts Medical Society; aged 65; died, December 25.

**Harry Rulison**, Albany, N. Y.; Albany (N. Y.) Medical College, 1905; aged 40; was found dead in his room at a New York hotel, December 12, from heart disease.

**Hiram Herbert Rust**, Gig Harbor, Wash.; University of Vermont College of Medicine, Burlington, 1876; aged 84; died suddenly, December 14, from heart disease.

**Robert Joseph Marsh** ☉ Portland, Ore.; University of Pennsylvania School of Medicine, Philadelphia, 1898; aged 53; died, December 18, from pernicious anemia.

**Charles J. Hull**, Carthage, N. Y.; Eclectic Medical College of the City of New York, 1881; formerly village president and health officer; aged 65; died, December 23.

**Isaac N. Woodman**, Morrisville, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1893; aged 54; died, December 14, from cerebral hemorrhage.

**Frank Major Beard** ☉ Shelbyville, Ky.; Medical Department University of Louisville, Louisville, 1893; aged 53; died, December 20, following a long illness.

**Mary Helen Cullings**, Syracuse, N. Y.; University of Michigan Medical School, Ann Arbor, 1886; aged 68; died, December 25, from pneumonia.

**Samuel Howard Wilson**, Mechanicsville, Pa.; Jefferson Medical College of Philadelphia, 1881; aged 67; died, December 18, from diabetes mellitus.

**Frank J. Lebangood**, Louisville, Ky.; Louisville Medical College, Louisville, Ky., 1879; aged 72; died recently, from acute articular rheumatism.

**Henry Garey**, Pittsburgh; Jefferson Medical College of Philadelphia, 1884; Confederate veteran; aged 94; died, December 18, from senility.

**Daniel Schmidt, Jr.**, New York; Bellevue Hospital Medical College, New York, 1881; aged 62; died, December 15, from cerebral hemorrhage.

**Charles E. Terrell**, Fort Worth, Texas (licensed in Texas under the act of 1907); aged 59; died, December 16, following a long illness.

**Mary Elizabeth Nutter**, Norfolk, Va.; Boston University School of Medicine, Boston, 1884; aged 71; died, October 4, from senility.

**William Burton Olds**, Attica, Ohio; Bennett College of Eclectic Medicine and Surgery, Chicago, 1882; aged 78; died, December 29.

**John Claude Hollis** ☉ Oakland, Calif.; College of Physicians and Surgeons, Chicago, 1906; aged 41; died, December 17.

**Walter Melvin Hornby**, Philadelphia; Medico-Chirurgical College of Philadelphia, 1895; aged 51; died, December 28.

**David K. Douthett**, Osceola, Iowa (licensed, Iowa, 1887); aged 67; died suddenly, December 19, from heart disease.

**Vardiman M. O. McDowell**, North Little Rock, Ark. (licensed, Arkansas, 1903); aged 65; died, December 18.

**Alva B. Coons** ☉ Georgetown, Ky.; Kentucky School of Medicine, Louisville, 1886; aged 62; died, December 23.



## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE.

### CULTURE-LAC OMITTED FROM N. N. R. AND OPTOLACTIN NOT ACCEPTED

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following reports.

W. A. PUCKNER, Secretary.

#### Culture-Lac

"Culture-Lac" is described in New and Nonofficial Remedies, 1922, as a culture of *Bacillus bulgaricus* manufactured by the Geck Laboratories, New York. The Special Pharmacal Products Co., Inc., Buffalo, N. Y., has advised the Council that it now owns and manufactures Culture-Lac. The product now marketed, however, is not the preparation described in New and Nonofficial Remedies as Culture-Lac but is said to be a culture containing *Bacillus acidophilus* and *Bacillus bulgaricus*.

In the advertising of Culture-Lac issued by the Special Pharmacal Products, Inc., it is stated:

"Owing to the difference of opinion of the medical profession as to the therapeutic value of the *Bacillus acidophilus* and the *Bacillus bulgaricus*, this laboratory, considering that the types were similar, also that both thrived in the same medium, decided to combine them and by so doing overcome any further objection."

This is not a valid reason for the sale of a mixture of *B. acidophilus* and *B. bulgaricus*. On the contrary, it is essential to therapeutic progress and in the interest of sound therapy that these two bacilli should be administered independently of each other.

The Council has decided that, on the basis of the present available evidence, preparations of *B. acidophilus* may be considered for admission to New and Nonofficial Remedies. In order, however, that an early estimate of the value of the bacillus as a therapeutic agent may be gained, the Council will admit such preparations only on condition that they are marketed under a properly descriptive name. Furthermore, the Council will not consider for acceptance any preparation containing *B. acidophilus* in admixture with other organisms unless acceptable evidence is presented to warrant the mixture.

In the advertising for the new Culture-Lac it is asserted:

"In considering divergent opinion as to whether the *Bacillus acidophilus* or the Bulgarian bacillus is the more active as intestinal antiputrefactives, it must be remembered that the fact has been thoroughly established by Metchnikoff and many other investigators, that functioning independently or both acting together when administered in combination, have marked therapeutic force."

This is an unwarranted therapeutic claim. The therapeutic use of *B. acidophilus* is distinctly in the experimental stage. Although there is evidence that the administration of sour milk products is at times beneficial, the theories advanced by Metchnikoff are entirely unsupported by scientific evidence, and no one subscribes seriously to these opinions at the present time.

The Council directed that the Culture-Lac of the Geck Laboratories be omitted from New and Nonofficial Remedies because it is off the market. The Council declared the Culture-Lac of the Special Pharmacal Products Co., Inc., inadmissible to New and Nonofficial Remedies (1) because there is no acceptable evidence to show that the administration of a mixture of *B. bulgaricus* and *B. acidophilus* is rational; and (2) because the preparation is marketed with unwarranted therapeutic claims.

#### Optolactin

Optolactin is the proprietary, nondescriptive name applied by Fairchild Bros. and Foster to a tablet said to contain mixed cultures of the *B. bulgaricus* A and *B. acidophilus*.

In the advertising the following reason for the marketing of this mixture is offered:

"This product, Optolactin, will enable those who attach a special importance to the *Bacillus acidophilus* to try it in combination with bacilli already well known. . . . And those who already use the *Bacillus bulgaricus* may employ this mixed culture with the assurance that Optolactin has all the qualities of the *Bacillus bulgaricus* of the Fairchild culture and with such new and important properties as may be derived from the inclusion of the *Bacillus acidophilus*."

Here, again, it must be emphasized that this is not a valid reason for the combination. In the interest of therapeutic progress and sound therapy it is essential that these two bacilli should be administered independently of each other.

In the circular which accompanies the trade package of Optolactin it is stated that *B. bulgaricus* "has now acquired a place in therapeutics for the purpose for which proposed by Metchnikoff and his colleagues, with his theory of auto-intoxication, disease resulting therefrom, and the ingestion of these bacilli in combating it." In consideration of the fantastic and erroneous statements which appear in the lay press about "auto-intoxication" and the endless ills said to result therefrom, this statement is likely to lead to the ill-advised use of Optolactin by the public.

The Council declared Optolactin inadmissible to New and Nonofficial Remedies (1) because there is no acceptable evidence to show that the administration of a mixture of *B. bulgaricus* and *B. acidophilus* is rational; (2) because the name is not descriptive of the composition of the preparation; and (3) because the circular accompanying the package is likely to lead to the ill-advised use of Optolactin by the public.

## Correspondence

### STERILITY FROM USE OF RADIUM

To the Editor:—Within the last few years there have come to my attention cases of sterility caused by handling radium. Nearly all the patients were young and healthy, and attracted by the steady salary promised, without much knowledge as to the action of radium on their future physical condition and without being informed as to that fact by those supposed to know. The employment, as a rule, is steady and practically continuous until these unfortunates come to realize that through the constant handling of radium they have become sterile. Young laymen, even most of the medical men in such employment, do not know and realize the dangers when they first start. It is impossible for men handling especially big dosages of radium to wear heavy enough lead aprons to be protected. Applicants should be informed of all the dangers, and decide their course with full knowledge in advance of the risks they are to take. Another way would be for such institutions to have enough men for each position to employ them for three months each year, giving long periods of freedom from the action of radium.

M. A. VARZHABEDIAN, M.D., Chicago.

### THE NAMES OF PROPRIETARY PREPARATIONS

To the Editor:—May I express my most sincere approval of the ruling of the Council on Pharmacy and Chemistry for excluding from New and Nonofficial Remedies drugs (however valuable their therapeutic action may be, or however honestly described their chemical constituency) not distinctly named to show the active drug that they contain. Esterol should be "benzyl succinate," prepared by Frederick Stearns & Company.

It should be suggested by its name that any drug or preparation acts differently from the basic drug it contains. A drug or preparation should be ordered by its name, and then the preferred maker specified, if desired. For instance:



Elixir Glycerophosphates (the name of the maker of the preparation desired); Antipneumococcic Serum (the name of the maker of the preparation desired); Novocaine (the name of the maker of the preparation desired); Aromatic Fluidextract of Cascara (the name of the maker of the preparation desired); Fluidextract of Ergot (the name of the maker of the preparation desired); Elixir of Pepsin (the name of the maker of the preparation desired); Peroxide of Hydrogen (the name of the maker of the preparation desired); Tablets of Ovarian Substance (the name of the maker of the preparation desired); Tablets of Thyroid Substance (the name of the maker of the preparation desired), etc.

If a particular make of a drug is preferred, every physician has as much right to specify the brand desired as he has to choose the drug he will use in a given case.

The patent and trademark laws should be amended so that the originator of a particular method of securing purity of a drug, or the discoverer of a new valuable synthetic drug, should be allowed to patent the drug under its chemical name, or at least under a name that is distinctive of its constituency, and then every other firm should be allowed to make that drug and sell it under its patented name, paying a royalty to the discoverer or originator of the drug.

Medicine and medical treatment must be scientifically simplified.

It is regrettable that proper names for the different diseases or syndromes and symptoms and signs are multiplying until their name is legion. Every man should be honored in early descriptions of the disease or condition that he has discovered, but it is deplorable to insist that every educated medical man shall know every sign, symptom and disease by some one's proper name.

OLIVER T. OSBORNE, M.D., New Haven, Conn.

#### AUTOCESAREAN SECTION IN A MOUSE

*To the Editor:*—Oct. 17, 1922, an ordinary brown mouse confined with others in a cage at the Ohio penitentiary was seen to be gnawing her abdomen. The attention of one of the superintendents, R. E. Moore, and a foreman, James Syfers, was called to the mouse, and they watched her until she had eaten an opening into her abdomen and removed four mice. Two of the mice were apparently still living, but soon died. The mouse did not seem to be at all disturbed by her operation, but ran around in her cage as though nothing had happened. My attention was incidentally called to the case a few days later by the warden of the penitentiary, Mr. P. E. Thomas. I visited his office and saw the mouse, which then showed simply a well healed scar.

After discussing the case with a number of my colleagues, it seemed important to know whether the operation had been a straight cesarean section, or an opening into an extra-uterine fetal sac. In the interest of science, therefore, the warden surrendered the mouse, which was turned over to Prof. D. S. White, dean of the veterinary department of the Ohio State University. Examination disclosed that the pregnancy had been in the right horn of the uterus, and had apparently been normal, so that no reason was discovered why the mouse relieved herself in this way.

In conversation, Professor White stated that he had never heard of any such occurrence. Correspondence with several laboratories where large numbers of mice are utilized for scientific purposes has not elicited a report of anything of this sort. Dr. B. Merrill Ricketts of Cincinnati reported some years ago two cases of autocesarean section in the human female.

In a communication (through Dr. B. Merrill Ricketts) from the Bureau of Animal Industry of the U. S. Department

of Agriculture, the statement is made that the library files of that department fail to reveal any data as to self-inflicted cesarean section in dumb animals, and the suggestion is made that no such case has been reported in veterinary literature.

J. F. BALDWIN, M.D., Columbus, Ohio.

#### DIAGNOSTIC VALUE OF BILIARY DRAINAGE

*To the Editor:*—I have read with considerable interest (THE JOURNAL, Dec. 23, 1922, p. 2129) the report by Fitz and Aldrich on chemical and physical examinations of bile removed at operation from gallbladders in a series of known gallbladder conditions. According to their results, they are not able to correlate their findings with any of the known gallbladder changes in the conditions they were investigating. Consequently, they have assumed that biliary studies according to the methods of Lyon cannot be of much diagnostic significance. So far as I am aware, neither Lyon and his co-workers, nor those who have made use of his methods, have ever based much on the physical and chemical analyses of bile obtained by this method of drainage. To be sure, the specific gravity, viscosity, color, etc., are noted, but usually do not have much weight in the diagnostic balance. We know that these characteristics of bile are very variable even in normal subjects at different times under different conditions. What is more important than any of these is the bacteriologic study of bile as obtained by the Lyon methods. The chief diagnostic value, to my mind, of this method of biliary study lies in the facility with which it lends itself to bacteriologic investigation of the gallbladder. Had Fitz and Aldrich been able to compare preoperative and postoperative bacteriologic findings in their series of cases, they would have learned that the Lyon tests were of practical diagnostic value. Furthermore, it is not clear that their microscopic examination of the bile specimens has been as thoroughly made as possible. In scientific work one cannot base far-reaching conclusions on incomplete studies, and therefore I believe that Fitz and Aldrich are not justified in throwing doubt on the value of the Lyon methods.

E. L. SHAFFER, PH.D., Trenton, N. J.

Assistant Pathologist, St. Francis  
Hospital.

### Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

#### DETERMINATION AS TO PREVIOUS VIABILITY OF INFANT FOUND DROWNED

*To the Editor:*—I am to appear in court to testify in an infanticide case. I had performed the necropsy and used the hydrostatic test on the lungs to determine whether the child was born alive. The lungs floated. How far can one interpret the findings of this test?

Y.

ANSWER.—The following statement from the "Text-Book of Legal Medicine," edited by Frederick Peterson and Walter S. Haines, 1903, p. 59, answers the question asked:

"In order to determine whether or not respiration has taken place, the following procedure is practiced: The height of the diaphragm is determined before the chest is opened (when respiration has fully taken place the diaphragm reaches to the fifth or the sixth rib; otherwise only to the fourth); the trachea is ligated in the neck before opening the chest; then the chest is opened, and the pleurae, pericardium and heart are examined; the pharynx, larynx and trachea, above the ligature, are also opened and examined. The organs of the chest are now removed in toto, the trachea being divided above the ligature, the heart and the thymus gland separated, and the lungs placed in a basin of cold, clean water. In



case they float freely, respiration has undoubtedly taken place; if the lungs sink, then the test is not decisive. The lungs, under such circumstances, are to be incised and note taken as to whether they crepitate or not, and whether air-bubbles appear when parts are compressed below the surface of the water. Furthermore, the lungs must be separated into lobes, the lobes into minute pieces, and the hydrostatic test again applied. In this way it may be possible to determine that air has gained entrance into certain parts of the lung in sufficient quantity to prevent small pieces from sinking.

"In the case of decomposition and the possible production on that account, in the lungs, of sufficient gas to buoy them up in the water, then a number of small pieces from the lungs are to be placed between the folds of a towel, and thoroughly compressed between two flat surfaces, such as between the floor and a board, exerting pressure by standing on the latter. The gas due to decomposition is pressed out, and the pieces from atelectatic, decomposed lungs will sink when thrown in the water after this treatment; inspired air, on the other hand, cannot be pressed out, and the pieces from inflated lungs continue to float."

#### ADMINISTRATION OF SODA AND GLUCOSE SOLUTIONS

*To the Editor:*—I am writing regarding the administration of soda and glucose solutions by hypodermoclysis. We had been having trouble with sloughing of the tissue around the site of the injection. I made up a 5 per cent. solution and sterilized by the fractional method in the Arnold sterilizer. My solutions are clear, with a slight darkening of the glucose. But even now we are having the same trouble. To cite an example: A woman with the dengue was given four injections. One was given in each breast and one in each thigh. They were all given the same day and by the same nurse. The one on the right thigh, which was the third given, caused considerable pain, the skin first becoming red and then peeling off, leaving a bluish tint, which later changed to a dark blue, became necrotic and sloughed. In another case, a trained nurse gave the injections into the breasts, the right first and then the left. These were given at the same time, and later sloughing occurred in the left breast. What is the cause for this, and how may we remedy it? Is the fault with the preparation, or is the amount of each injection too large?

—————, Canada.

ANSWER.—The necrosis produced by the "soda and glucose solution" hypodermoclysis is, no doubt, due to its excessive alkalinity. Sloughing has occurred after subcutaneous injection of 2 per cent. solutions of sodium carbonate. Our correspondent does not state the exact strength of the solution; but, assuming that he used 5 per cent. of sodium bicarbonate, the irritation resulting from such a solution could be readily explained, especially if the heating for sterilizing is not done in such a way as to prevent loss of carbon dioxide. For, when the sodium bicarbonate solution is heated, it gives off carbon dioxide and is converted into the much more alkaline and destructive sodium carbonate. Such a solution may be given by proctoclysis or by intravenous injection; but it is not suitable for hypodermoclysis.

#### DOSAGE OF CINCHOPHEN

*To the Editor:*—In what dosage and amount should cinchophen be used? I find in some of the advertising circulars the directions to discontinue from seven to ten days and repeat, and I have been informed that there is danger of uric acid calculi forming in the kidneys if it is used continuously. GEORGE D. CARNES, M.D., South Haven, Mich.

ANSWER.—The following dosage statement is given in *New and Nonofficial Remedies*, 1922: "In gout the dose of cinchophen is from 0.5 Gm. (8 grains) four times a day to 1 Gm. (15 grains) three times a day suspended in large quantities of water. In order to prevent the precipitation of free uric acid from the urine with possibly resulting renal colic, Weintraud considers it necessary to administer simultaneously 15 Gm. (225 grains) of sodium bicarbonate in the course of the first day, and from 5 to 10 Gm. (75 to 150 grains) on the following days. In articular rheumatism, Heller prescribes daily doses of from 3 to 5 Gm. (45 to 75 grains)."

In the treatment of rheumatic fever, Hanzlik, Scott, Weidenthal and Fetterman (*THE JOURNAL*, June 18, 1921, p. 1728) state that intensive and massive doses of cinchophen are necessary for complete relief, just as with salicylate. One gram of cinchophen (or neocinchophen) was administered every hour until definite symptoms of drug action were manifested. Then the medication was stopped; and, if no relief was obtained, a full therapeutic (toxic) dose was administered in the usual way. In the cases reported by the authors,

some improvement appeared after from 3 to 6 gm. of cinchophen; further relief was not demonstrable until after from 6 to 10 gm. had been administered; complete relief occurred only when patients had received a total of from 10 to 13 gm.

In cases of chronic disease, it has been recommended to administer cinchophen for two or three days; then, not to give it for the next ten or fourteen days, and then repeat. This seemingly is based on an early communication of Weintraud, who thought its use in this manner would serve as a "prophylactic." Such directions do not appear in "Useful Drugs," "New and Nonofficial Remedies" or recent works on pharmacology and therapeutics.

#### VENTILATION OF ROENTGEN-RAY ROOMS

*To the Editor:*—In the application of deep roentgen-ray therapy, I am troubled considerably with the fumes of ozone and nitrous oxide throughout my office.

I have installed an exhaust ventilating system, but still the fumes linger in my rooms for a considerable length of time after the deep therapy treatment is administered. Unfortunately, my office space is so arranged that I have a long space, 20 by 80 feet, with a 13 foot ceiling, which affords ventilation only at the two distant ends. The side walls have no windows on account of adjoining buildings.

Would the installation of several air purifying devices be of any help in further purifying the air in my office suite? Are there any other air purifying devices that would be helpful?

HAROLD SWANBERG, M.D., Quincy, Ill.

ANSWER.—We know of no specific chemical action whereby air-purifying devices absorb the nitrous oxide of the air in rooms in which a high tension electric current has produced a breakdown of the normal chemical constituents of the air. Most such devices act to disguise odors. As to a means of taking care of the undesired gases in roentgen-ray therapy, there is nothing but actual change of the air in the room as rapidly as the nitrous oxide is formed. Open windows with the assistance of a fan or an exhaust apparatus are the only successful means for this purpose.

#### BIOLOGIC PRODUCTS FOR PREVENTION OF PNEUMONIA OR INFLUENZA

*To the Editor:*—Is there any vaccine or serum that is worth anything as a preventive of influenza, or as a preventive of pneumonia following influenza? Is there any such product that is worth using during convalescence?

J. F. MARTIN, M.D., Benson, N. C.

ANSWER.—The use of biologic products prepared from pneumococci and influenza bacilli is still in the experimental stage. Some products prepared from pneumococci have been accepted by the Council on Pharmacy and Chemistry for *New and Nonofficial Remedies*. A list may be found in that book, together with a brief discussion as to the experimental evidence on which the use of the products is based.

#### PRESENT STATUS OF "INSULIN"

*To the Editor:*—Will you kindly give me information regarding a preparation by the name of "Insulin," said to be manufactured by a professor from the Medical Department of the University of Toronto, who claims it is a specific in the treatment of diabetes?

W. E. RAMSAY, M.D., Houston, Texas.

ANSWER.—In *THE JOURNAL*, January 6, the present status of this product is discussed editorially. It is pointed out that the product is still in the experimental stage and that it seems to be of considerable promise, but that it is not yet available for general application in the treatment of the disease for which it is specific.

#### CHRONIC RESISTANT MACULAR ERYTHRODERMA

*To the Editor:*—Have you any literature on a skin trouble known among skin men as chronic resistant macular and maculopapular scaly erythroderma? Do the skin men recognize this condition, and if so, has it ever been classified? J. A. McCULLOCH, M.D., Maryville, Tenn.

ANSWER.—Resistant maculopapular scaly erythroderma is one of several names of a dermatosis that is rare but well known by dermatologists. There are several varieties of the condition. The commonest used name for it is parapsoriasis (the condition is not related to psoriasis). A better but less frequently used name is parakeratosis variegata, the name used by Unna, Santi and Pollitzer in the original description of the condition. Under one of these names this dermatosis is discussed in all of the modern dermatologic textbooks.



## Medical Education, Registration and Hospital Service

### COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vigne, Juneau.  
KANSAS: Topeka, Feb. 13. Sec., Dr. Albert S. Ross, Sabetha.  
NATIONAL BOARD OF MEDICAL EXAMINERS: Written examination in Class A medical schools. Part I and II, February 12-14 and February 15-16. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for the February examination must be sent in by January 1.  
PENNSYLVANIA: Philadelphia, Jan. 30-Feb. 3. Sec., Mr. C. D. Koch, Professional Credentials Bureau, 422 Perry Bldg., Philadelphia.  
SOUTH DAKOTA: Pierre, Jan. 16. Director, Dr. H. R. Kenaston, Bonesteel.  
VERMONT: Burlington, Feb. 13. Sec., Dr. W. Scott Nay, Underhill.

### POSTGRADUATE STUDY ABROAD

WILLIAM A. BRAMS, M.D.  
CHICAGO

This article is written so that the physician contemplating a trip abroad for postgraduate work may know what courses he can get and how he can get them.

#### VIENNA

Vienna has been the center of postgraduate medical education for many years. There is in that city an organization of American physicians ready to help the American physician in the selection of courses and in finding board and lodgings. This organization is the American Medical Association of Vienna, which has headquarters at the Cafe zur Klinik, IX Wien, Spitalgasse and Lazarettstrasse, Austria. There are between 100 and 125 American physicians in this society, and a secretary who will give any information requested.

A list of desirable and moderately priced hotels, boarding houses (pensions) and private rooms without board is kept for the convenience of members and strangers. The various courses offered by the Viennese instructors and professors are posted, together with the hours, duration, cost, nature of the work and name of the teacher. Special courses may also be arranged for, since the organization is in close touch with the teaching bodies of the various hospitals and the university.

At the end of the course of study, a certificate is given by the faculty of the University of Vienna, stating the length of time and the subjects of each course taken. For this a small fee is charged.

Good room and board costs from \$7 to \$10 a week for one person. This does not include such extras as special taxes, small tips and special food. The total cost is much less than in the United States for similar accommodations. It is well to arrange beforehand, if possible, for quarters. This may be done through the medical association or through some friend.

The courses cost from \$2 to \$5 an hour. This means that the entire group of from two to ten or more agree to pay the teacher this sum, and the amount is equally divided among the members of the class. For example, each member of a course costing \$5 an hour pays 50 cents an hour, if there are ten in the group. Private courses can also be arranged for in any subject. The average course covers from twenty to twenty-five hours, and this may be repeated as often as one likes; but private courses run in accordance with a previous arrangement. The American physician will find that, on the whole, the teachers and native population are quite hospitable and ready to help in many ways. There need be no fear on this point, as the average American is well liked and will get along very well.

While the housing and food situation for the native is a serious matter, the American, with the rate of exchange so much in his favor, will get almost anything he wishes in the way of food and lodging. There is a shortage in some

things, such as milk, but for the average man the food will be quite satisfactory.

The usual method of procedure is to report at once to the office of the association and to ask the secretary, who speaks both English and German, for a list of courses or such other information as may be desired.

The eye, ear, nose and throat courses are excellent. The chief advantages are in the fundamental branches, but the opportunities for doing major operations are limited. This is because the government now limits the powers of the professors and instructors over the patients; and this, together with the large number of assistants who are also anxious to operate, tends to limit the actual practical work for the American physician.

Very good work may also be obtained in pathology, internal medicine, roentgenology, neurology, psychanalysis and dermatology. This list does not exhaust the subjects available, and the physician who is interested in going abroad to study will always find something of interest in this city.

#### BERLIN

Berlin also offers good opportunities for postgraduate work, especially in internal medicine, gastro-enterology, ear, nose and throat, and pathology.

Living conditions for the American are good, and he will find no difficulty in selecting suitable rooms and obtaining good food during his stay in this city. The prices for courses are about the same as in Vienna, and they are given in about the same way. Letters certifying to the work done in the various places in Berlin will be given by the teachers on the completion of the various courses. The American may expect to find that he will be requested to pay more for things than Germans or foreigners whose rate of money exchange is not so high as ours, but even then it is possible to live cheaper in Berlin than in the United States.

#### PARIS

Paris offers some very good opportunities for postgraduate work in neurology, internal medicine and skin diseases, and good work may be obtained in roentgenology and in tuberculosis. At the office of information of the School of Medicine, rue Ecole de Médecine, information can be obtained relative to courses and opportunities for work in the various hospitals and clinics. The secretary in charge speaks English, and is ready to furnish any information desired.

The living expenses in Paris are higher than in Vienna or Berlin, but the fees for the courses are much lower. The average course is from 100 to 200 francs per course for each person, and at the clinics there are many opportunities for work for which there is no charge. Arrangements for such free work must be made with the head of the clinic. Certificates from the faculty of medicine of the University of Paris are given for courses or work completed at any of the hospitals or clinics.

While it is not absolutely necessary for the physician to be familiar with German or French, he will profit much more if he understands these languages, as many of the professors do not speak English. Some of the best courses in Vienna, Berlin and Paris are given in the native language, but courses in English may also be had in Vienna, especially in eye, ear, nose and throat and internal medicine. In Paris and Berlin there are few courses in English, so that some familiarity with the native language is important if the physician wishes to get the most out of his stay abroad.

#### LONDON

Information in regard to graduate courses in London can be obtained by writing to Mr. George E. MacLean, Director of the American University Union, 50 Russell Square, London, W. C. 1.



## Book Notices

DISEASES OF THE STOMACH AND UPPER ALIMENTARY TRACT. By Anthony Bassler, M.D., F.A.C.P., Professor of Gastro-Enterology, New York Polyclinic Medical School and Hospital. Fifth edition. Cloth. Price, \$8. Pp. 977, with 244 illustrations. Philadelphia: F. A. Davis Company, 1922.

The question arising in the mind of the reader who peruses the textbooks appearing from time to time is whether or not some of them are, so to speak, written to order. Is it really necessary in a book devoted to clinical gastro-enterology to devote almost one third of the volume to a discussion of facts that are to be obtained in any modern textbook of physiology and laboratory diagnosis? It seems that a clear, concise description of one technical procedure, the one of choice of the author, would leave the reader a much better impression than a maze of procedures, some simple, most of them too complicated for the average reader, who, as often as not, is confronted with the statement, after a particularly complicated technic has been described, that this method is not so good as another. At a time when there seems to be a growing feeling of distrust of the value of complicated methods of the examination of gastric contents, simplicity is the desideratum. Also, why devote twenty-two pages to urinalysis in a book on gastro-enterology? The author lays considerable importance on the work of Alvarez on peristalsis, describes in detail the methods of fractional analysis, and has enlarged the section on roentgenology of the gastro-intestinal tract. Bismuth, rather than barium, seems to be the choice of the author, as the latter is not mentioned. Credit must be given for the excellent presentation of the subject of anamnesis. In a domain of clinical medicine in which the history is the most important clue, if not the main diagnostic light in 75 per cent. or more of the cases, too much importance cannot be laid on this point. The section on ulcer is well written. It is unfortunate, however, that the author fails to consider cholecystitis, from which, at times, nothing is with more difficulty differentiated than ulcer. The diagnosis of gallstones is mentioned; chronic inflammation of the gallbladder, however, offers many more obstacles in diagnosis, on account of the similarity in symptoms, gastric content examination, and even roentgen-ray examination. The occurrence of hematemesis in 30 per cent. of all cases of ulcer seems to be very high. Formerly, hyperacidity and gastrosuccorhea were considered entities. Now many of them are recognized either as ulcer or as the result of extragastric conditions. Careful observation of these would tend to lower the high percentage of hematemesis in ulcer. It is questionable whether roentgenologists will subscribe in their entirety to Dr. Bassler's statements; for example, that residue after six hours, acute fish-hook stomach, delayed pyloric opening and settling of the bismuth to the lower pole of the stomach are characteristic of gastric ulcer, and that gastric residue, dilatation of the cap, vigorous peristalsis, early free opening of the pylorus with early cleaning of the stomach, and lagging of bismuth in the duodenum are characteristic of duodenal ulcer. A happier statement would have been that these phenomena are observed at times in gastric and duodenal ulcer. In fact, they may occur in extragastric conditions, while duodenal stasis is far more frequent in gallbladder lesions. The subject of treatment is very well covered. It is not clear, however, why Dr. Bassler advises that transfusion in hemorrhage, certainly a life-saving procedure, should not be done too early. The subject of gastritis seems to be hereditary in character. Textbooks repeat that it is one of the commonest gastric ailments. Clinically, however, in the practice of a large number of gastro-enterologists, except as secondary to extragastric condition or carcinoma, it is a rarity. Dr. Bassler is one of the many who see numerous cases of gastritis. The rôle of the typhoid bacillus in the causation of gallstones and cholecystitis, while important, does not warrant the statement that "cholecystitis is mainly typhoidal in character." Roscnov has shown the importance of the streptococcus in the causation of cholecystitis. A few points in gastric physiology mentioned by Dr. Bassler do not seem to be in accord with

modern physiology. He states that water and sugar solutions are absorbed by the stomach. McLeod, in "Physiology and Biochemistry in Modern Medicine" (1918, p. 455) states what appears to be the prevalent opinion, that water is not absorbed and that glucose only in concentrated solution is absorbed from the stomach. It might also be noted that, far from being impaired, the gastric emptying is often increased in conditions of achylia. Electricity finds many uses in the hands of the author, for the pain of chronic gastritis, for motor insufficiency, for chronic constipation and for psychic depression. It would be interesting to learn whether Dr. Bassler considers these as psychic aids or actual therapeutic measures, enhancing peristalsis as the case may be. There are numerous excellent illustrations, especially of pathologic specimens, and reproductions of roentgenograms, numerous diet lists, and prescriptions.

MOSQUITO ERADICATION. By W. E. Hardenburg. Cloth. Price, \$3. Pp. 248, with 146 illustrations. New York: McGraw-Hill Book Company, Inc., 1922.

The public is beginning to realize that the average town can free itself from malaria and other mosquito-borne diseases for much less than it costs to endure them. Practical demonstrations, which the author recounts in this book, have been made at Roanoke Rapids, N. C., Electric Mills, Miss., and Crossett, Ark., by the St. Louis and Southwestern Railroad, and by the federal government during the mobilization of troops in the South. In a single year at Crossett before mosquito eradication was begun, physicians' calls for malaria totaled 2,502; the number of calls dropped the year anti-mosquito work started to 741, a difference of 1,761. Assuming that physicians made two calls to each case of malaria, the reduction effected by mosquito eradication work was 880 cases; and estimating the cost of each case at \$15—wages lost, decreased efficiency, physicians' fees and medicine—the money value of the saving was \$13,200. The actual cost of the antimosquito work for that year was \$2,506.40. Such demonstrations of economy in malarial communities will increase when the public fully appreciates what has already been done. There is therefore a wide berth for a book which discusses how these campaigns are initiated, administered and carried on. The well known methods—draining, oiling, screening—of mosquito control are fully considered, and a chapter is devoted to the newer and less expensive method which employs certain fish. *Gambusia affinis* Baird and Gerard, a top minnow, is probably the best fish to use for general antimosquito work, within its habitat, of any of the North American fishes. It inhabits both fresh and brackish water, and in giving birth to its young—it is viviparous—it requires no special environment for depositing and hatching its eggs. One medium-sized female fish has been observed to eat as many as 165 mosquitos larvae in one day. The young fish begin eating a few hours after birth, and even at this stage will devour a mosquito larvae half as big as itself. The book is profusely illustrated.

LEÇONS DE PATHOLOGIE DIGESTIVE. (Cinquième Série). Par M. Loeper, Professeur agrégé à la Faculté de Médecine de Paris. Paper. Price, 15 francs net. Pp. 348, with 53 illustrations. Paris: Masson et Cie, 1922.

The lessons contained in the fifth series are so numerous and so interesting that properly to appreciate them requires much more experience with their subject matter than most American reviewers possess. The book reads somewhat like a romance, and even when the matter seems strangest it is most fascinating. It evokes skepticism and wonder; but the wonder is that of scientific inquiry, and as a result of reading the volume, one is much inclined to look for opportunities for testing the validity of much of its contents. Loeper, not carried away by undue enthusiasm for the powers of roentgenoscopy to elucidate all gastro-intestinal diseases, has gone deep into the chemistry, microscopy and clinical aspects of diseases of the stomach and intestine. Careful chemical tests are given; much stress is laid on pepsin, both in stomach juice and in urine; the relations between symptoms of gastro-intestinal disease and the nervous system are discussed. The theory that the vagus nerve absorbs toxins during the course of digestion is supported by some experimental data which on their face seem worth repetition. The



clinical pictures of lesser curvature ulcer, cancer and phlegmonous gastritis are painted in the best French style. The proteolytic ferments of cancer and their relation to cachexia, and the specific hemolysin and its relation to anemia form the subject matter of two most interesting chapters. Further details must be left to the reader.

## Medicolegal

### Power as to Quarantining Syphilitic Prostitutes

(*Duncan v. City of Lexington et al. (Ky.)*, 244 S. W. R. 60)

The Court of Appeals of Kentucky, in affirming a judgment in favor of the defendants, says that the plaintiff asked for a writ of prohibition against the city, its health board and various health officers, to prevent the enforcement against her of a city ordinance providing for the quarantining of persons having syphilis. She asked also for a mandatory injunction ordering her release from quarantine. In the absence of proof, and under the pleadings, it must be taken as true that she was arrested on a warrant issued by the health officer on reasonable grounds for believing that she had syphilis, and was being detained, after an examination voluntarily submitted to which proved her infection, in the hospital quarters of the city jail with others of her own sex similarly affected; that in these quarters she was completely separated and removed from those confined in the jail under charge or conviction of crime; that the quarters were regularly designated as a quarantine area for such purpose, were properly equipped therefor, and in charge of competent physicians and nurses; and that she was detained therein in quarantine and for treatment only, and would be released as soon as the disease yielded to treatment and ceased to be communicable and a menace to the public health.

The principal, if not the sole, questions for decision were whether or not the city had the power to pass an ordinance providing for the arrest and detention in quarantine, in a properly equipped, managed and designated hospital, of known prostitutes afflicted with syphilis in an active, virulent, infectious and communicable form. That such power is inherent in a municipal corporation, even in the absence of constitutional or legislative provision with reference thereto, this court does not doubt; but this court need not decide or discuss that question, since Section 2059 of the Kentucky Statutes expressly authorizes the establishment of boards of health in cities such as Lexington, and Section 3058, which is a part of the charter of second-class cities, confers on the city council authority "to establish and enforce quarantine laws and regulations to prevent the introduction and spread of contagious diseases in the city, and within two miles thereof . . . to establish and maintain public hospitals within or without the city . . . to secure the general health of the inhabitants by any necessary measure . . . to constitute a board of health, and elect or appoint necessary health officers."

Construing these and several related statutes, this court held in *Hengehold v. City of Covington*, 108 Ky. 752, 57 S. W. 495, that cities of the second class are expressly authorized to empower the local health board to order the removal of persons infected with smallpox to a properly equipped pest-house, and to enact "additional reasonable regulations to prevent the spread of epidemic diseases." By no course of reasoning can the fact that smallpox, an epidemic disease, was there involved differentiate that case from this one involving syphilis, a contagious disease, since the provisions of the charter of the city under which that conclusion was reached refer to contagious rather than epidemic diseases. Whether or not such power may be conferred on the health officer alone was also involved and decided in that case, the reason for holding that it could be so conferred being stated to be that "in such cases the necessity for immediate action is imperative, and it is not unreasonable to permit the health officer, or less than a quorum of the board, to order such removal in a case where it does not appear that the removal

would endanger the patient's life." The court is, therefore, clearly of the opinion that the city had the power to authorize the health officer alone to cause the plaintiff's removal to and detention in the hospital quarters of the city jail especially prepared, equipped and designated as a quarantine area for persons afflicted as admittedly she was.

The court does not pass on the validity of the provision of the ordinance authorizing the health officer to quarantine persons "reasonably suspected of having" the diseases named, or on the legality of the plaintiff's arrest on orders of the health officer issued on information and belief merely, since it stood confessed on the record that she had syphilis in a contagious form, which was established by an examination voluntarily submitted to after her arrest.

### Communication for Birth Report Not Privileged

(*State v. Lassieur (Mo.)*, 242 S. W. R. 900)

The Supreme Court of Missouri, Division No. 2, says that complaint was made in this homicide case that a physician had been permitted to testify as to communications made to him by a woman witness. The state's counsel had elicited from the woman that she had become the mother of an illegitimate child shortly after the homicide, and on inquiry by the defendant's counsel she said that the deceased was the father. The prosecuting attorney sought to impeach this testimony by showing that the woman had told the physician whose testimony was objected to, and who had attended the woman at the birth of the child, that another than the deceased was the father, and that such information had been given to him, not to enable him to prescribe for her and to treat her, but for the purpose of gathering data for the state department of vital statistics. This communication was not privileged, and there was no error in permitting the physician to testify as stated.

## Society Proceedings

### WESTERN SURGICAL ASSOCIATION

Thirty-Second Annual Meeting, held at Minneapolis, Dec. 8 and 9, 1922

The President, DR. MILES F. PORTER, Indianapolis,  
in the Chair

#### Closure of Chronic Empyema Cavities by Use of Very Strong Surgical Solution of Chlorinated Soda and Gentian Violet

DR. W. D. GATCH, Indianapolis: Of seventeen cases of chronic empyema I have succeeded in closing the sinus in fourteen by the use of the so-called chemical method. Two patients died, but not from causes in any way connected with the treatment. One patient, with tuberculosis, still has a small sinus, but is able to work and earn a living. The other patients are well, at work, and practically without deformity. The treatment employed is devoid of danger, and is easily carried out. The strong surgical solution of chlorinated soda rapidly sterilizes the empyema cavity and destroys its thick wall at a rate which is not too rapid for safety. It also probably opens up pockets of pus not draining freely into the main cavity. Bronchial fistulas will close practically always when the empyema cavity with which they communicate is completely drained. Cavities infected with tuberculosis cannot be irrigated with this solution unless they have greatly thickened walls. Aqueous solutions of gentian violet can be used to destroy gram-positive organisms in these cavities. Empyema cavities can be sterilized and closed, and will be obliterated after a time. In such cases the thickened pleura will be absorbed completely. Reinfection of the contents of such a cavity does not necessarily require the reestablishment of drainage.

#### Surgical Significance of Mesenteric Lymphadenitis

DR. LEONARD FREEMAN, Denver: Mesenteric lymphadenitis is a common disease of children and young adults. It is characterized by enlargement of numerous lymph nodes,



usually small and soft; the infecting agent being, in many instances, the tubercle bacillus, presumably of the bovine type. The most prominent symptoms are: moderate pain, tenderness and rigidity, mostly in the right lower quadrant of the abdomen, often accompanied with slight fever, headaches, occasional colics, various gastro-intestinal symptoms, and loss of weight and energy. The disease is nearly always confused with appendicitis. Because surgeons are unfamiliar with the trouble, it is seldom recognized during operations. There is a strong tendency toward recovery, at least symptomatically, following laparotomy.

#### **A New Pyelo-Ureteral Plastic Operation for Hydronephrosis**

DR. ARNOLD SCHWYZER, St. Paul: The essential points of the method are: first, that the mucosa is not sutured, but brought into exact apposition. This reduces the danger of formation of concretion. Second, and more important, the slack and fold which is unavoidably produced by sliding the flap downward to the end of the slit in the ureter is taken care of at the upper end of the pelvic incisions, and the ureteropelvic junction does not become either kinked or puckered.

#### **Pneumoventriculi Cerebri Following Fracture of Skull**

DR. FRANK R. TEACHENOR, Kansas City, Mo.: As the presence of air in the cranial cavity or ventricles does not in itself cause any deleterious effects, treatment should be directed against its most common complications: (1) meningitis; (2) intracranial compression, and (3) its tendency in intracranial aerocele to the formation of cysts, by replacement of the absorbed air with fluid. Aseptic and antiseptic treatment of the wound of entrance of the air is of prime importance. Air in the ventricles is quite rapidly absorbed, and in the absence of indication for operative measures for the reduction of intracranial pressure, etc., may be ignored. In the cases of intracranial aerocele the air seems to be absorbed more slowly, and, on account of its tendency toward cyst formation, should be aspirated or drained. Drainage would also tend to lessen the danger of meningitis. The drainage or aspiration, if done, should be done early. The accompanying skull fracture and brain injury will usually indicate the type of treatment to be employed.

#### **Endothelioma of Cheek**

DR. EDMUND A. BAELER, St. Louis: These tumors are very hard to classify. They are all of mesoblastic origin, however, and belong in the broad group of sarcoma. A fairly large sized tumor of endothelial origin may present itself in the cheek without involving the skin or mucosa. The lymph glands of the neck may become involved fairly early and quite extensively, as in my case. The growth became sufficiently large to interfere with mastication and speech. The involvement of the lymph glands in our cases would indicate that quite a few of these cases undergo or are of malignant character.

#### **Cancer and Benign Growths of the Female Breast**

DR. DONALD MACRAE, JR., Council Bluffs, Iowa: I am opposed to the use of radium, the roentgen ray, cancer paste, or any other means of treatment except the knife. The earlier the cancer is removed by radical surgery, the greater the hope of permanent cure. A movable tumor within the mammary gland is probably not malignant. However, this examination alone should not satisfy the average surgeon. An experienced pathologist should be on hand to make frozen sections for immediate determination. A good surgeon with a poor pathologist should never attempt removal of questionable neoplasms from the human breast.

#### **Perforated Gastric and Duodenal Ulcer**

DR. A. C. STOKES, Omaha: The four most common symptoms indicating perforation of a gastric or duodenal ulcer in order of their percentage of value are: (1) sudden severe pain; (2) rigidity, boardlike and general; (3) abdominal tenderness, often localized, occasionally general, and (4) symptoms of collapse or shock. The symptoms of ulcer perforating in the anterior side of the lesser curvature of the stomach are likely to be more classical than those of per-

forating ulcer of the duodenum, and perforations in the posterior wall are least of all classic. These posterior perforations are often missed entirely until symptoms of a subphrenic abscess appears, or general infection in the lesser or greater peritoneal sac is well established. The treatment most in vogue is simple closure of the ulcer, with gastroenterostomy reserved for cases of pyloric stenosis, perigastric adhesions and large indurating ulcers. This should be attempted only at the time of the perforation, when the patient is in the best of condition, and within twelve hours after the perforation. Simple closure of a perforated gastric or duodenal ulcer cures the ulcer in about 80 per cent. of cases. The mortality following operation for perforated gastric ulcer increases in direct proportion to the number of hours following the perforation at which the operation is performed. All operations for perforated gastric or duodenal ulcer should be followed by proper medical treatment for considerable periods of time after the operation is performed.

#### **Cholecystectomy Without Drainage**

DR. W. A. COVENTRY, Duluth, Minn.: In virtually every case of cholecystectomy, one can with proper technic close the gallbladder incision without drainage. If this is done, the postoperative pain, especially passing up into the shoulder blade and scapula, the postoperative nausea and vomiting, postoperative temperature, postoperative tympany, and finally the end-result, will be very much more smooth, more pleasant to the patient and to the surgeon, and far more gratifying in all respects.

#### **Appendicitis in Women**

DR. A. W. ABBOTT, Minneapolis: An investigation was made to see how often pelvic peritonitis existed after appendicitis in women. In more than 1,000 cases that probably might meet these requirements, only forty-two were found that were absolutely representative. Ninety per cent. of these women had pelvic adhesions of varying extent. Comparatively little disease was found in the tubes and ovaries beyond adhesions. The analysis showed (1) that appendicitis is very commonly followed by pelvic pathology; (2) that appendicitis is a direct menace to the child-bearing capacity of women, and (3) this may explain some otherwise obscure cases of sterility. Admitting these conclusions, an early removal of appendicitis as the primary source of infection is urgently recommended.

#### **Acute (Puerperal) Inversion of the Uterus**

DR. EDWARD EVANS, La Crosse, Wis.: Inversion of the puerperal uterus is rare. Since the appearance of Jones' paper in 1913, I have been able to collect fifty-six cases. A relaxed uterus is the prime predisposing cause; improper delivery of the placenta is the most common active cause. In these fifty-six cases, however, the placenta was adherent in seventeen after the inversion occurred. Probably fundal attachment of the placenta is the greatest factor, and since fundal attachment is very rare, this would account for the rarity of inversion. Of the fifty-six cases, twenty-eight were reduced manually, five by Avcling's repositor, two spontaneously, four by laparotomy, five by vaginal hysterectomy, three by anterior colpohysterotomy, and three by posterior colpohysterotomy. In cases of complete inversion, it is probable that manual reposition can rarely succeed, and laparotomy should be the operation of choice. If the cervical ring can be felt in the vagina, then manual reduction should succeed very often, especially when the case is recognized early. Failing in this, anterior or posterior colpohysterotomy have about an equal number of advocates.

#### **Preservation of the Facial Nerve During Complete Removal of Parotid Gland for Malignant Tumor**

DRS. A. W. ADSON and W. O. ORT, Rochester, Minn.: Early diagnosis and early and complete enucleation are advised for encapsulated tumors of the parotid gland; but, if metastasis has occurred to the gland, radical removal should be carried out with preservation of the facial nerve. This radical procedure should be performed whenever there is doubt concerning metastasis from the encapsulated tumor into the parotid gland. As long as the tumor remains encap-



sulated, it is not highly malignant. In the operation for removing the parotid gland, the inframandibular branch of the seventh nerve is first exposed through an incision which extends from a point 3 cm. above and posterior to the lower tip of the mastoid, and curves downward 2 cm. below the border of the mandible to a point 4 cm. anterior to the angle of the jaw. The nerve branch is then traced backward until the temporal and cervical divisions of the seventh nerve are exposed. Then an additional incision is made down from the zygoma and just in front of the ear above the parotid, and this incision is connected with the one previously described. The section of the glands should be carried downward in the line of the incision from the zygoma, and should be deep enough to expose the mandible and the temporal border of the posterior masseter muscle. The dissection must be kept close to the cartilage of the ear and back of the parotid gland, care being taken not to injure the temporal branch of the facial nerve. By this method the two surgical fields can be connected. After this, the temporal and cervical divisions of the facial nerve are dissected away from the parotid. If this dissection is complete, the skin with the parotid may be elevated, leaving the peripheral branches of the facial muscles undisturbed. The incision is then carried forward sufficiently to elevate all of the parotid, dividing and ligating Stenson's duct. After this, the gland is removed from the skin. The next step is to lift the seventh nerve and dissect out the deep lobe of the parotid gland behind the mandible and mesial to the seventh nerve. The wound is closed with a subareolar stitch of catgut and with a dermal stitch of horsehair.

#### Significance of Right-Sided Abdominal Pain

DR. ROBERT C. COFFEY, Portland, Ore.: The chain of pathologic changes that can develop as a result of right-sided ptosis or nonfixation of the right colon may be stated as: (1) nonfixation of the cecum and ascending colon; (2) high fixation of the appendix and its mesentery well up under the liver; (3) Fixation of the hepatic flexure to the front surface of the kidney, with acquired membranous development to strengthen the support; (4) acquired membranes extending from the parietal peritoneum across to the mobile colon; (5) acquired membranes along the undersurface of the first part of the transverse mesocolon, for the extra support of this part of the colon; (6) one band extending along the omentum from the colon to the undersurface of the gallbladder; (7) another band extending from the colon across the duodenum, making extra fixation, and (8) a midline ptosis probably due to dilatation of the stomach secondary to dilatation of the duodenum, which was produced by duodenal-arterial mesenteric ileus. These conditions, when taken with the history, make a complete clinical and pathologic picture of right-sided ptosis, and offer a perfect explanation of the significance of marked right-sided abdominal pain that is not based on an organic lesion.

#### Radical Operations on the Stomach with Special Reference to Mobilization of the Lesser Curvature

DR. WILLIAM J. MAYO, Rochester, Minn.: The lesser curvature is the key of the anatomic lock which prevents mobilization of the stomach so necessary for operations of the partial gastrectomy type. If the gastric artery is tied early and the gastrohepatic omentum is separated from the liver, by traction on the distal stump of the gastric artery, the fat, the glands, and the unyielding structures of the lesser curvature of the stomach can be dissected out, the arteries being tied as they are encountered. This enables the lesser curvature to be elongated remarkably, and in the majority of cases in which the carcinomatous growth or ulcer is situated in the pyloric end or in the lesser curvature distal to the incisura, excision of the diseased portion of the stomach is possible, to be followed by direct union between the stomach and the duodenum. When the cut end of the stomach is more than twice the diameter of the cut end of the duodenum, it should be narrowed by proper suturing of the lesser curvature. The gastroduodenal union is accomplished by taking two stitches on the gastric side to one on the duodenal side, which produces a remarkably smooth anastomosis. Follow-

ing the gastroduodenal union, the stomach is caught by two catgut sutures placed in the anterior wall sufficiently proximal to the anastomosis, so that when it is attached to the suspensory ligament of the liver it will carry the gastroduodenal anastomosis to the right of the spine, taking the tension from the suture line and improving gastric drainage.

#### Value of Pyelography in Abdominal Diagnosis

DR. DANIEL N. EISENDRATH, Chicago: Thorough examination of the upper urinary tract in the differential diagnosis of cases presenting symptoms of a subacute or chronic character is very necessary. Pyelography and ureterography are of greater value than the employment of the shadow-graph catheter alone. In cases in which pain is the principal symptom, a pyelogram or ureterogram will at times reveal the presence of changes in the pelvic outline as the result of pyelitis or ureteritis, or of a hydronephrosis or hydro-ureter due to obstruction, such as kinking from an abnormally movable kidney, calculus, stricture or an abnormal vessel to the lower pole. The differentiation of shadows due to gallstones from those due to renal calculi has been greatly aided by pyelography. The presence of a normal pyelogram in cases of abdominal enlargements makes it possible to exclude the kidney as the seat of the tumor. Changes in the outline of the pyelogram enable the surgeon to recognize kidney tumors at a comparatively early period, and the displacement of the ureters in retroperitoneal tumors is shown. Pyelography is of value in the recognition of renal anomalies which may be the seat of pathologic changes and giving rise to symptoms in locations in which the kidney was not normally found.

#### Peritoneal Drainage

DR. CUTHBERT POWELL, Denver: Drainage, so-called, of the peritoneal cavity does not remove infection, nor does it allow the escape of more than a negligible amount of fluid present in the general peritoneal cavity. On the other hand, the presence and pressure of drains undoubtedly militate against the recovery of the patient. Except in definitely localized and walled off abscesses, and possibly in those now fortunately rare late cases of general suppurative peritonitis, when the whole cavity is filled with pus under pressure, drainage is contraindicated. The surgeon's duty has been performed when the focus of infection has been removed and the abdomen closed in as short a time as is possible, consistent with a proper technic and with a minimum of trauma and exposure of the peritoneum. The use of gauze packs, towels and the like, and rough and unnecessary handling of the viscera all do an amount of harm which no form of drain will overcome. I wish to plead most strongly for a reversal of Tait's old dictum and advise that, when in doubt, one should not drain the peritoneal cavity.

#### The Value of the Roentgen-Ray Examination in the Early Diagnosis of Postoperative Ileus

DR. JAMES T. CASE, Battle Creek, Mich.: In the treatment of postoperative ileus, the greatest single factor in saving life is the earliest possible diagnosis of the fact of obstruction. In 1910 I began the use of the roentgen ray in cases of suspected ileus, especially when surgical intervention was not clearly indicated. No dressings are removed. No opaque medium need be administered. The whole procedure requires not more than five minutes. The film is at once developed, and it may be studied immediately after being dipped in the fixing solution. It will reveal at once whether there is any gas distention within the abdomen, and if so, whether the distention occurs within the stomach or within the large or small intestine. If doubt still exists as to the fact of the obstruction, a small amount of barium sulphate, say one-half ounce, may be administered by mouth in a little water, and another film made five or six hours later.

#### Sliding Hernias of the Cecum and Appendix in Children

DR. VERNON C. DAVID, Chicago: In three cases of sliding hernia of the cecum in children coming under my observation, there were no adhesions between the bowel and the testicle, and no gross evidence of a plica vascularis was present. The cecum and appendix were incorporated in the sac of the hernias; in fact, they were part and parcel of the sac.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Medical Sciences, Philadelphia

December, 1922, 164, No. 609

- \*Infectious Mononucleosis (Glandular Fever); Report of Ten Cases. W. T. Longcope, Baltimore.—p. 781.
- \*Relations of Hypertension to Cardiorenal Diseases. N. B. Foster, New York.—p. 808.
- \*Vital Capacity in Health and Heart Disease. J. H. Pratt, Boston.—p. 819.
- \*Treatment of Lobar Pneumonia by Serum Free Solution of Pneumococcus Antibodies. L. A. Conner, New York.—p. 832.
- \*Pregnancy Complicating Heart Disease. H. E. B. Pardee, New York.—p. 847.
- Mechanism of Elimination of Bacteria from Respiratory Tract. A. L. Blochfeld, Baltimore.—p. 854.
- \*Two Hundred Syphilitic Patients Whose Chief Complaint was "Stomach Trouble"; Interpretative Analysis of Diagnosis of Syphilis in Consultant Medical Practice. J. H. Stokes and P. W. Brown, Rochester, Minn.—p. 867.
- Safeguarding of Tonsil and Adenoid Operation. G. Fetterolf, Philadelphia.—p. 884.
- Clinical Observations and Research Work. J. B. Deaver and S. P. Reimann, Philadelphia.—p. 901.

**Infectious Mononucleosis.**—Ten cases of infectious mononucleosis are described by Longcope. The relation of this disease to glandular fever is discussed. The uniform character of this febrile disease and the association of an enlargement of the lymph nodes with a striking increase of mononuclear cells of abnormal type in the blood serve to differentiate the condition from other acute infectious diseases. If the disease is an entity, as it appears to be, the specific cause is unknown. It resembles most closely acute leukemia but may be differentiated by many characteristics. The disease is of short duration and recovery is the rule.

**Relation of Hypertension to Cardiorenal Disease.**—Foster asserts that adequate evidence for the belief that hypertension is a predominant factor in the causation of arteriosclerosis cannot be found. Even though some types of nephritis may possibly be of vascular origin, their genesis cannot be traced through arteriosclerosis to hypertension. But while there is no direct interdependence of these organic changes, there are many facts suggestive of the same causative agent producing both organic changes. Present knowledge seems to indicate in a most general way that organic change in the kidneys and vessels may arise in diverse ways, the least indefinite of these being through intoxications of infectious origin. There are suggestions that intoxications resulting from abnormal metabolism may have a similar effect. These intoxications produce early only functional disorders chiefly referable to the nervous system. When persistent, they induce organic changes affecting the blood vessels and kidneys.

**Vital Capacity in Health and Heart Disease.**—The effect of age on vital capacity was studied by Pratt in 100 men who showed no evidence of disease of the heart or other organs at the time of their examination. Pratt compared his findings in these cases with those of 100 persons, both men and women who had organic heart disease. The mean vital capacity of the 100 persons with normal hearts was between 3,500 and 4,000 c.c., while the mean for those with abnormal hearts was between 1,500 and 2,000 c.c. No one with a healthy heart had a vital capacity below 1,500 c.c., while 18 per cent. of those with heart disease had a vital capacity above 4,500 c.c., and only five of the 100 had a vital capacity above 4,000 c.c.; 11 per cent. of those with healthy hearts had a vital capacity above 4,500 c.c. Seventy-seven of the 100 persons with abnormal hearts had cardiac insufficiency of the congestive type. Dyspnea on exertion or edema was present. Sixteen presented no evidence of cardiac weakness. Pratt has for five years followed the variations in the vital capacity of all cases of heart disease that have been under his care. When cardiac insufficiency of the congestive type has existed, the vital capacity has followed closely the change in the clinical condition. It has proved to be a good index of the amount of reserve power possessed by the heart.

**Treatment of Pneumonia by Serum Free Solution of Pneumococcus Antibodies.**—The effect of treatment by the intravenous injection of a serum free solution of antibodies of the three fixed types of pneumococci was studied by Conner in a series of 116 cases of lobar pneumonia in adults, without any attempt at selection. The death rate was 14.6 per cent. In thirteen cases the exciting organism was a streptococcus or the Friedländer bacillus. The mortality rate for these patients was 46.1 per cent. Of the remaining 103 cases, ninety were proved to be due to the pneumococcus and the others, because of the low death rate among them, were regarded as probable pneumococcus cases. For these 103 patients the death rate was 10.6 per cent. Among the ninety proved pneumococcus cases, Type IV pneumonias were conspicuous both by their high incidence (54.4 per cent.) and by their very low mortality (4.1 per cent.). The figures suggest that the treatment had some real curative value, with respect to Type I and Type II cases at least, and this impression is supported by the fact that in a considerable proportion in which treatment could be instituted early, the progress of the disease was stopped short, and by the further fact that recoveries among the cases associated with positive blood cultures were more frequent than is usual under ordinary methods of treatment. The nature of the therapeutic effects of the solution is obscure in view of the apparent effectiveness of the treatment in Type IV cases. The difficulties in the way of explaining the beneficial results of the treatment on the score of some purely nonspecific action are discussed. The method is free from the disadvantages incident to the injection of large amounts of serum. It has, however, one serious defect in that the immediate reactions following the injections are often severe and occasionally are dangerous. In one patient death seemed to be directly traceable to the severity of this reaction. The method is believed to represent a step forward in the direction of a satisfactory form of rational treatment but further clinical study is needed and some means of controlling the severity of the immediate reactions to the injections must be found before it can safely be introduced into general use.

**Pregnancy Complicating Heart Disease.**—It is not Pardee's feeling that abortion is often indicated for women with heart disease. Most of them will go through very well indeed, but it is the physician's urgent duty to find some means of picking out those cases that will not go through without developing serious symptoms. Cardiac failure is the thing feared in all cases, and prognosis and treatment should be guided by the presence or absence of symptoms or signs of cardiac failure and by the degree of severity of these when present. The pathologic condition is of much less importance than the physiologic reactions. With proper observation and treatment severe cardiac failure should not occur during pregnancy, for if medical treatment does not ward it off, then intervention is indicated. Even during labor its occurrence should be rare with careful observation and a promptly performed forceps or cesarean section if severe failure seems imminent. Operation should not be withheld at any stage, even though the signs of failure are slight, if they are seen to be growing progressively worse under proper medical treatment. It is better to operate when the failure is moderate than to have to do so when it is severe.

**Stomach Trouble and Syphilis.**—Of 200 syphilitic patients who complained of stomach trouble, 70 per cent. had neurosyphilis. Twenty patients (10 per cent.) had organic lesions (syphilitic or nonsyphilitic) of the gastro-intestinal tract, nine (5 per cent.) had lesions of the heart, and in only 4 per cent. was it a true syphilis of the stomach. Stokes and Brown suggest that the seat of the lesion in patients with gastric crises and negative spinal fluid examinations is in the vagus, the abdominal ganglia and the sympathetic system. Fifty per cent. of 122 patients had hypo-acidity and 38 per cent. were normal. Hyperacidity was rare. Of 132 patients having roentgen-ray examinations, the findings in 84 per cent. were negative and in only 6 per cent. were there definite or doubtful syphilitic lesions. Treatment for syphilis underlying a gastric complaint must be directed according to the special indications in the case, and must not be merely general. Different methods will be required for underlying syphilis of



the nervous system, the stomach, or the heart, for example. The authors observed striking symptomatic improvement in certain cases of gastric and duodenal ulcer in neurosyphilitic patients in whom the roentgen ray after treatment showed the lesion itself to be still present. The spinal fluid examination stands out from this investigation as a procedure of the highest importance, outranking the serum Wassermann reaction in diagnostic syphilology as applied to internal medicine.

### American Journal of Obstetrics and Gynecology, St. Louis

November, 1922, 4, No. 5

- \*Life History of Ovarian Hematomas (Hemorrhagic Cysts) of Endometrial (Müllerian) Type. J. A. Sampson, Albany, N. Y.—p. 451.
- Some Phases of Bovine Genital Infections of Possible Interest to Medical Profession. W. L. Williams, Ithaca, N. Y.—p. 513.
- \*Treatment of Puerperal Sepsis by Use of Mercurochrome Intravenously: Report of Animal Experimentation in Chemical Disinfection of Blood. E. B. Piper, Philadelphia.—p. 532.
- \*Use of Sutures as Tractors in Vaginal Operation for Prolapsus. T. S. Cullen, Baltimore.—p. 544.
- \*Precancerous Conditions of Cervix Uteri. R. R. Huggins, Pittsburgh.—p. 552.

**Life History of Ovarian Hematomas of Endometrial Type.**—Next to leiomyoma of the uterus, the pathologic conditions arising from the implantation of epithelium which escapes from the fallopian tubes into the peritoneal cavity Sampson believes probably furnish the most frequent pelvic lesions found at operation in women between the ages of 30 and the menopause. He has encountered thirty-seven cases with these lesions in 170 abdominal operations for pelvic disease in women between 30 and 50 (20 per cent. plus); and six additional cases, three in women under 30 and three in women over 50. One of the latter had not reached the menopause. The epithelium primarily giving rise to these implantations is derived from or through the fimbriated ends of the fallopian tubes. It lodges either on the surface of the ovaries or on the peritoneal surface of the other pelvic structures, especially those in the culdesac, or on both the ovaries and the pelvic peritoneum, and develops into glands or tubules (adenomas) of endometrial (mullerian) type. Sampson discusses this subject in great detail and many excellent illustrations are appended. Sampson believes further that the implantation adenomas in the ovary derived from tubal and uterine epithelium are the source of many ovarian cysts and carcinomas.

**Mercurochrome Treatment of Puerperal Sepsis.**—A solution of mercurochrome given intravenously in the proper dosage, Piper says, appears, in some cases, to be of great value in the treatment of puerperal sepsis and to have no deleterious effects. All cases of puerperal septicemia are so serious and so frequently fatal that heroic measures are justified. The dosage of the drug is an important factor. Piper gave about 25 c.c. of a 1 per cent. solution of mercurochrome in distilled water per hundred pounds of body weight. The reaction that occurs is almost routinely the same. Within the first hour there may be vomiting; in less than two hours a definite diarrhea will commence. In the first six hours there will probably be a marked chill with a rise in temperature up to 105 F. Following this chill there will be a gradual decrease in temperature with a proportionate pulse rate decrease until the temperature reaches subnormal, gradually rising to normal or slightly above where it should stay from twenty-four to forty-eight hours. The diarrhea will continue over a day or so and may require treatment.

**Vaginal Operation for Prolapse.**—Cullen describes a method which includes amputation of the cervix and raising up the bladder so that it will rest on the fundus of the uterus.

**Precancerous Condition of Cervix of Uterus.**—Huggins insists that every woman who has borne children and who has reached the age of 40 should be examined and if disease of the cervix is found it should be treated. This treatment may be palliative but often it should consist in the removal of the diseased tissue. While a cervix may present but slight evidence of disease, this may be sufficient in the presence of susceptibility and an acid medium to cause cancer. It is important that every practitioner acquaint himself with what a normal cervix is, so that he may appreciate the deviations from the normal and cure the cancer before it starts.

### Archives of Dermatology and Syphilology, Chicago

December, 1922, 6, No. 6

- Prevalence of Yaws (Frambesia Tropica) in United States. H. Fox, New York.—p. 657.
- \*Erosio Interdigitalis Blastomycetica. J. H. Mitchell, Chicago.—p. 675.
- \*Malignant Endotheliomas with Cutaneous Involvement. G. J. Busman, Rochester, Minn.—p. 680.
- Melanoblastoma of Nail Bed (Melanotic Whitlow). A. E. Hertzler, Halstead, Kan.—p. 701.
- \*Kolmer Modification of Wassermann Reaction. R. A. Kilduffe, Pittsburgh.—p. 709.
- Specificity of Cholesterinized Antigens in Serologic Diagnosis of Syphilis. R. A. Kilduffe, Pittsburgh.—p. 730.
- \*Experience with Kolmer Quantitative Complement Fixation Test for Syphilis. L. J. Palmer and W. E. Gibb, Seattle.—p. 739.
- Studies in Chemotherapy of Fungus Infections. I. Fungistatic and Fungicidal Activity of Various Dyes and Medicaments. J. F. Schamberg and J. A. Kolmer, Philadelphia.—p. 746.
- Inoculation, Autoinoculation and Complement Fixation Tests in Pompholyx (Tilbury Fox). S. S. Greenbaum, Philadelphia.—p. 757.
- Treatment of Phytosis of Feet. M. B. Hutchins, Atlanta, Ga.—p. 761.
- Comparative Study of Kahn and Wassermann Reactions for Syphilis. S. Ide and G. J. Smith, Ann Arbor, Mich.—p. 770.

**Saccharomycetic Interdigital Erosion.**—In Mitchell's opinion the term *erosio interdigitalis blastomycetica* is confusing as it leads to the supposition that the causative organism is the well known blastomyces, with which it has nothing to do. He holds that substitution of "*saccharomycetica*" for "*blastomycetica*" would be advisable. The chronicity of the disorder, the fixed location of the lesion, the absence of vesication, the resistance to therapy and the occurrence of the disorder on the hands of washerwomen, make the dermatosis worthy of consideration as an entity. Whether or not the yeast is the causative organism, Mitchell does not say, as he has not carried out inoculative experiments, for the reasons given in the foregoing.

**Malignant Endotheliomas.**—Three cases are reported by Busman of tumors whose cellular elements present the histologic characteristics of endothelial cells. The clinical course of the lesions, in general, is that of tumors of slow growth, often developing at sites of trauma. Metastasis does not appear until late, when the tumor has reached considerable size. The tumors in all cases exhibit a marked hemorrhagic tendency. Clinically, the lesions must be distinguished from syphilis, carcinoma, sarcoma, sporotrichosis and the infectious granulomas. The histologic structure of the tumors is that of an undifferentiated polymorphic cell type of growth presenting a whorl arrangement of the cells with the formation of elongated strands and narrow trabeculae. There is definite evidence of an attempt to differentiate into vascular structures. A constant feature is the occurrence of vacuoles in the cytoplasm of practically all cells. Treatment consists of radical surgical removal of the original process followed by use of the roentgen ray or radium application to the site of the original lesion and to all probable areas of metastasis.

**Kolmer Modification of Wassermann Test.**—The results of tests on 1,014 serums examined in parallel series by a routine method of complement fixation and by the Kolmer modification of the Wassermann reaction are recorded by Kilduffe and the findings tabulated and discussed. The Kolmer method is favored because the results with this method are in close agreement with the clinical findings in a high percentage of cases. It is a strictly quantitative method and as such better adapted to the study of treated syphilis. It appears to be eminently worthy to supercede and supplant the methods now in common use. It presents by far the most acceptable technic yet proposed for adoption as a standard method and as such should be subjected to extensive, exhaustive and impartial trial and study. In early primary syphilis the Kolmer modification gives earlier and stronger results than routine methods.

**Id.**—Palmer and Gibb also favored the Kolmer quantitative complement fixation test for syphilis.

### Archives of Neurology and Psychiatry, Chicago

December, 1922, 8, No. 6

- Recent Studies on Spirochetes in General Paralysis. C. B. Danlap, Ward's Island, N. Y.—p. 589.
- \*Anatomic Study of Faisceau De Turck in Relation to Temporal Lobe. J. H. W. Rhein, Philadelphia.—p. 608.
- Tuberculous Sclerosis. Report of Case. W. Freeman, Philadelphia.—p. 614.



- \*Disturbances of Respiratory Rhythm in Children. Sequel to Epidemic Encephalitis. H. L. Parker, Rochester, Minn.—p. 630.  
Psychopathology and Organic Disease. S. E. Jelliffe, New York.—p. 639.  
Postencephalitic Deformities of Motion. S. P. Goodhart, New York.—p. 652.  
Pyramidal and Extrapyramidal System Involvement in Epidemic Encephalitis. S. Brock and I. Margaretten, New York.—p. 660.  
\*Striocerebellar Tremor. Study of Nature and Localization of Combined Form of Organic Tremor. J. R. Hunt, New York.—p. 664.

**Study of Faisceau de Turck.**—A tumor measuring 5 cm. anteroposteriorly and 4 cm. transversely was found by Rhein occupying the posterior two thirds of the first and second temporal convolutions. Microscopic examination disclosed that the cortex and white matter of the superior and middle temporal gyri were totally destroyed by the tumor, and the brain tissue anterior and posterior to these regions to the extent of about 2.5 cm. was implicated by a cellular infiltration consisting of cells similar to those found in the tumor proper. A study of the serial sections of the brain internal to the tumor and the corresponding levels on the opposite side failed to reveal any evidence of degeneration on either side. The faisceau de Turck, at the point where it appears in the retrolenticular region, was intact. The foot of the peduncle stained uniformly and showed an undegenerated faisceau de Turck in this region. Rhein is convinced that if the temporal lobe is the origin of fibers which degenerate in a descending direction, consisting of the faisceau de Turck, they may come from the posterior third of the third temporal convolution.

**Disturbance of Respiratory Rhythm Following Epidemic Encephalitis.**—The histories of eight patients, seven of whom were children, suffering from a disturbance of the respiratory rhythm are cited by Parker. While four of the patients had had an infectious illness worthy of the diagnosis of epidemic encephalitis, the remaining patients dated their illnesses from an infectious episode or febrile illness. In seven patients the onset occurred during the first three months of 1920. The main features of the clinical picture in these cases were paroxysmal stretching, breath holding, grunting and forced noisy respirations. In others there was constant dyspnea, associated, in one case, with posture. The average duration of the illness was seventeen months before examination at the clinic, and in a few cases there was an appreciable gap between the initial illness and the appearance of the prominent symptoms. The persistency of the symptoms contrasted with the peculiar nature of the disease which was more manifest by night than by day. It was relatively unaffected by various forms of therapy. Combined with the peculiar paroxysmal respiratory attacks were changes in character. The patients were noisy, disobedient, and passionate, whereas formerly they had been well behaved. There was marked insomnia with inversion of the sleep rhythm in the seven children and abnormal drowsiness in the one adult.

**Nature of Striocerebellar Tremor.**—Hunt postulates the existence of a combined form of organic tremor caused by the involvement of separate neural mechanisms. There are recognized combined forms of palsy, central and peripheral, pallidal and pyramidal, as well as combined forms of sensory disturbances due to simultaneous involvement of more than one system. In this category Hunt would place the striocerebellar tremor.

### Arkansas Medical Society Journal, Little Rock

December, 1922, 19, No. 7

- Significance of Blood Pressure Readings. A. W. Strauss, Little Rock.—p. 121.  
Early Recognition of Carcinoma of Cervix. D. Gann, Jr., Little Rock.—p. 127.  
Roentgen-Ray Treatment of Diseased Tonsil and Adenoids. J. D. Southard, Fort Smith.—p. 130.

### Boston Medical and Surgical Journal

Dec. 14, 1922, 187, No. 24

- Mental Hygiene Campaign as Seen by an Outside Observer. B. Crothers, Boston.—p. 861.  
Illustrations of Differential Diagnosis of Some Torpid States: Therapeutic Import. T. A. Williams, Washington, D. C.—p. 867.  
Congenital Malformation of Intestine—Atresia and Imperforate Anus. Report of Twenty-Seven Cases. W. S. Quinland, Boston.—p. 870.

- \*Treatment of Diabetic Gangrene. H. F. Root, Boston.—p. 875.  
\*Hydatid Cyst of Lung. Report of Two Cases. G. M. Balboni, Boston.—p. 879.  
Studies in Pancreatic Function. Enzyme Concentration of Duodenal Contents After Ingestion of Pure Foodstuffs and Food Mixtures by Normal Men. C. W. McClure and A. S. Wetmore, Boston.—p. 882.

**Treatment of Diabetic Gangrene.**—Seven cases of diabetic gangrene with successful operative treatment are reported by Root.

**Hydatid Cyst of Lung.**—Since 1917 two cases of hydatid cysts of the lung have been observed in the outpatient department of the Massachusetts General Hospital; one a unilateral cyst of the right lung, the other one of multiple cysts of both lungs. These two patients came principally for cough and bloody sputum. One of these cases is of considerable interest on account of the presence of multiple echinococcus cysts in both lungs with a probable cyst of the kidney.

Dec. 21, 1922, 187, No. 25

- \*Studies in Pancreatic Function. Enzyme Concentration of Duodenal Contents in Pathologic Conditions Involving Pancreas, Liver and Stomach. C. W. McClure and C. M. Jones, Boston.—p. 909.  
Congenital Obliteration of Bile Ducts and Congenital Biliary Cirrhosis of Liver. J. K. Gordon, Boston.—p. 923.  
Problem of Tuberculous Suspect. J. B. Hawes, Boston.—p. 928.  
Education of Trained Nurse. C. Frothingham, Boston.—p. 930.

**Studies in Pancreatic Function.**—Abnormalities in enzymatic activities of duodenal contents, demonstrated by the methods and procedures used in the work here reported, were found by McClure and Jones: (a) in the presence of some organic lesion involving the pancreas primarily or secondarily; or (b) when clinical, operative or necropsy findings indicated the possibility of derangement of the external secretory function of the pancreas. It seems fair to the authors to assume, therefore, that such abnormalities show pathologic involvement of the pancreas or its ducts, and that the involvement of the pancreas may be mechanical or functional in nature. If this assumption is correct, then it is justifiable to conclude that estimation of enzymatic activities of duodenal contents furnishes an index to the activity of the external secretory function of the pancreas. In achylia gastrica and pernicious anemia no abnormalities in the activity of the external secretory function of the pancreas were demonstrable, as measured by the enzyme concentration of duodenal contents. These findings suggest that the presence of hydrochloric acid is not necessary in order to stimulate normal pancreatic secretory activity. Under the experimental conditions used, enzymatic activity was not demonstrably affected by the presence or apparent absence of bile in the duodenal contents. The external secretory function of the pancreas, as measured by the enzyme concentration of duodenal contents, was found to be much depressed in chronic pancreatitis. Acute pancreatic necrosis, cancer of the head of the pancreas and lesions obstructing the pancreatic duct were accompanied by marked abnormalities in enzymatic activities of duodenal contents. Obstructive lesions caused great diminution, while acute necrosis usually caused dissociation in enzymatic activities. Estimation of enzymatic activities of duodenal contents furnished findings of value in the differential diagnosis between benign and malignant lesions, causing obstructive jaundice. Dissociation of enzymatic activities of duodenal contents are interpreted as showing derangement of the external secretory function of the pancreas. Acute and chronic cholecystitis and infectious (catarrhal) jaundice were accompanied by dissociation of enzymatic activities of duodenal contents. This finding suggests that there was associated derangement of the external secretory function of the pancreas.

### Canadian Medical Association Journal, Toronto

November, 1922, 12, No. 11

- Chronic Brain Injuries: Pathology and Treatment. W. Sharpe, New York.—p. 761.  
\*Surgical Therapy and Net Results in Gallbladder Disease. R. R. Graham, Toronto.—p. 767.  
\*Cancer of Uterine Cervix: Summary of Results Obtained by Various Methods of Treatment. J. W. Ross, Rochester, Minn.—p. 772.  
Asthma in Children. A. Brown, Toronto.—p. 780.  
Merits of Intraperitoneal Injections in Infants. T. D. McGregor, St. John, N.B.—p. 787.  
\*Septic Absorption in Diffuse Septic Peritonitis. W. A. Costain, Toronto.—p. 789.



Postoperative Management. R. V. B. Shier, Toronto.—p. 793.  
Local Anesthesia as Applied to Operations on Rectum and Anus. A. J. Grant, London.—p. 795.  
Plastic Surgery of the Head and Neck. F. Risdon, Toronto.—p. 797.  
Heliotherapy in Surgical Tuberculosis. R. I. Harris, Toronto.—p. 799.  
Public Health Organizations. J. Roberts, Hamilton.—p. 805.  
Osteo-Arthritis. W. A. Gardner, Winnipeg.—p. 808.  
Lactic Acid Milk Feeding in Marasmus. R. R. Struthers, Montreal.—p. 812.

**Results of Gallbladder Surgery.**—In a series of ninety-one cases analyzed by Graham, there were seven deaths. In the chronic cholecystitis group without stone formation, there were fifty-two cases and one death; that one death occurring a year later as the result of a recurrence of a duodenal ulceration, for which a gastro-enterostomy had to be performed. The other six deaths occurred, with one exception, when the disease had progressed to the formation of stone, and in that instance there was an associated intestinal obstruction in a patient five months' pregnant, who miscarried seventy-two hours after operation. In view of the inefficiency of other forms of therapy in controlling sequels and relieving symptoms of gallbladder disease, Graham urges that surgical therapy should be instituted, preferably in the early stage of the disease prior to the onset of complications, at which time the mortality is practically negligible; and further that such surgical therapy, judiciously applied, will cure 66 per cent. and improve 34 per cent. of patients who survive the procedure.

**Results of Treatment of Cancer of Uterine Cervix.**—From Ross' study of 475 cases in which various forms of therapy were employed, it would seem that in very early cases of cancer of the uterine cervix treatment by surgery alone gives good results. Surgery in combination with radium gives slightly better results than surgery alone. In operable but not early cases treatment by surgery alone or combined with radium gives the best results. Radium alone or Percy cautery alone are of equal value and both less efficient. If radium is not available, Percy cautery should be used. In cases considered inoperable because of extension to the vagina surgery gives the best results and radium is disappointing. In inoperable cases radium, alone or in combination with cautery or surgery, is the only effective agent. In advanced cases radium is superior to all other methods but not curative. The incidence of fistula is higher with the Percy cautery than with any other method.

**Septic Absorption in Diffuse Septic Peritonitis.**—Judged from Costain's experimental observations, it would seem that the first procedure, after a diagnosis of diffuse septic peritonitis has been made, would be to establish a thoracic duct fistula, and at a later date such other operative measures as the situation warranted. The operation could be done with greater facility in the human than in the dog, as the duct is more accessible and, being larger, could be drained more successfully. The emaciation could be combated by blood infusions or transfusions. By checking the septic absorption, those distressing complications which are met so frequently in peritonitis would be largely overcome. The conclusion to be drawn from this experimentation is that in diffuse septic peritonitis death travels through the thoracic duct.

### Delaware State Medical Journal, Wilmington

July, August, September, 1922, 13, No. 3

Doctors and Welfare Agencies. A. Robin.—p. 21.  
Labyrinthine Irritability Associated with Focal Infections. W. F. Bonner, Wilmington.—p. 28.

### Indiana State Medical Association Journal, Ft. Wayne

December, 1922, 15, No. 12

Trend of Neurologic Surgery. C. H. Frazier, Philadelphia.—p. 405.  
Endocrinology in Its Medical Aspects. G. W. McCaskey, Fort Wayne.—p. 409.  
Neurologic Phase of Endocrinology. C. C. Bitler, Newcastle.—p. 414.  
Surgical Aspects of Endocrinology. W. D. Gatch, Indianapolis.—p. 423.  
Epidemic Jaundice. S. C. Waters, Middletown.—p. 430.

### Journal of Industrial Hygiene, Boston

December, 1922, 4, No. 8

Recent Investigation on Atmospheric Conditions in Industry. H. M. Vernon, London.—p. 315.

Preparation of Hatters' Fur: Chemical Study of Carrotting Process. J. R. Johnson.—p. 325.  
Miners' Nystagmus from Point of View of Workmen's Compensation Act. T. L. Llewellyn, London.—p. 335.  
Effects of Exposure to Arsenic Trichlorid on Health. S. Delepine.—p. 346.

### Journal of Nervous and Mental Disease, New York

December, 1922, 56, No. 6

Case of Pons Hemorrhage (Type Foville). G. B. Hassin, H. Isaacs and M. Cottle, Chicago.—p. 553.  
\*Thrombotic Cortical Amaurosis. H. Mella, Boston.—p. 563.  
\*Mental Symptom Complex Following Cranial Trauma. E. E. Hadley, Washington, D. C.—p. 567.  
Psychosis with Encephalitis and Cerebrospinal Fluid Findings. B. Lemchen, Chicago.—p. 591.

**Thrombotic Cortical Amaurosis.**—Mella relates a case of sudden loss of vision which was diagnosed "toxic amblyopia" but on necropsy proved to be due to a bilateral lesion in the occipital lobe. The case appears to controvert, in part at least, the precept of John Hunter on the distribution of arteries. He held that they were distributed without relation to function. Wherever sections were made in the occipital lobes the blood vessels stood out prominently and were characteristic of an advanced arteriosclerosis. The thickening of media and the narrowing of the arterial lumen were so great that only a scant flow of blood could reach the parts supplied, resulting in degeneration of the calcarine area. The symmetrical position of the lesions makes the cause of blindness obvious. No lesions were encountered on examination of the optic tracts anterior to the occipital lobes. Beyond the general arteriosclerosis, the brain, cerebellum, pons and medulla appeared normal. This pathological picture proves the earlier diagnosis of toxic amblyopia to have been erroneous; furthermore it presents a condition which Mella says should be considered in all cases of amblyopia before making such vague diagnoses as "retrobulbar neuritis" and "toxic amblyopia" in the absence of fundus pathology. The case tends to corroborate the views of Shellshear, who believes that the arteries of the forebrain have a functional distribution and should not only be studied from the anatomic point of view, but in relation to their functional significance which is probably of paramount importance.

**Traumatic Psychosis or Neurosis Not a Clinical Entity.**—It is Hadley's belief that there is no clinical entity which may properly be called a traumatic psychosis or neurosis. However, there has been found, following severe injury to the brain, an alteration in the personality, which may be described as the "posttraumatic constitution."

### Journal of Metabolic Research, Morristown, N. J.

July, 1922, 2, No. 1

\*Influence of Glands with Internal Secretions on Respiratory Exchange. VI. Effect of Suprarenal Insufficiency (by Removal) in Rabbits. D. Marine and E. J. Baumann, New York.—p. 1.  
\*Pancreatic Diabetes in Dog. VI. Influence of Pancreatic Extracts without Aid of Alkali on Metabolism of Depancreatized Animal. J. R. Murlin, B. Kramer and J. E. Sweet, New York.—p. 19.  
Modified Haldane Open Circuit Apparatus for Measuring Respiratory Exchange in New Born Babies and Also in Rabbits and Cats. D. Marine, New York.—p. 29.  
\*High Fat Diets in Diabetes. F. S. Leclercq, Morristown, N. J.—p. 39.  
Metabolism in Chloroform Poisoning. F. P. Underhill and R. Kapsinow, New Haven, Conn.—p. 57.  
\*Influence of Benzyl Benzoate on Nitrogenous Metabolism. G. T. Pack and F. P. Underhill, New Haven, Conn.—p. 73.  
Influence on Metabolism of Some Purin and Pyrimidin Bases. F. P. Underhill and H. F. Farrell, New Haven, Conn.—p. 107.  
Vitamin of Cod Liver Oils. I. Potency of Crude Cod Liver Oil, Pressed, Cod Liver Oil and Cod Liver Stearin. A. D. Holmes, Boston.—p. 113.

**Influence of Endocrins on Respiratory Exchange.**—A prolonged absolute rise in heat production has been obtained by Marine and Baumann in 82 per cent. of thirty-three rabbits from which both suprarenal glands were completely removed, and in 40 per cent. of fifteen rabbits whose suprarenal function was crippled by freezing. The period of increased heat production may last from a few days to several months—the longest period in which increased thermogenesis has been followed in an individual rabbit was twenty-three weeks. It is concluded that the increased thermogenesis is, in part, dependent on the increased rate of discharge of the iodine



containing hormone from the thyroid. The ability of the thyroid to store iodine or to produce this hormone is not impaired after suprarenal injury. Infection, trauma, nerve injury, muscular movement and diet are not regarded as being essential factors in the increased thermogenesis following suprarenal injury.

**Influence of Pancreas Extracts on Depancreatized Animal.**—Additional proof is presented by Murlin et al. of the presence, in pancreatic tissue, of a substance capable of restoring to the diabetic animal the ability to utilize glucose. Although these experiments were made during 1913 to 1916, they are presented to confirm the previously recorded observations of Banting and Best. The nature of the active principle is yet to be determined.

**High Fat Diet in Diabetes.**—Observations on three patients are reported by Leclercq showing the effect of increasing the diet with fat beyond the caloric tolerance. Injury of the assimilation is manifested by a rise of blood sugar, which is generally slow but in the severest cases may be rapid. These cases illustrate the well known fact that in fasting or undernutrition, even emaciated patients derive their energy chiefly from body fat. None of the facts, therefore, warrant an assumption that high fat diets will suppress hyperglycemia or glycosuria by means of a marked reduction of protein catabolism. The statement that severe cases of diabetes which are resistant to undernutrition or fasting can be cleared up by high fat diets, in the author's opinion is contrary to fact. The attempt to prevent undernutrition by giving fat or any other kind of food prevents also the benefits of undernutrition.

**Influence of Benzyl Benzoate on Nitrogenous Metabolism.**—Judging from experimental investigations in dogs, made by Pack and Underhill, the therapeutic dose of benzyl benzoate for human beings is probably insufficient to disturb the normal nitrogenous metabolism.

### Journal of Pharmacology and Experimental Therapeutics, Baltimore

December, 1922, 20, No. 5

Effect of Epinephrin on Excised Strips of Frogs' Digestive Tracts. C. M. Gruber, St. Louis.—p. 321.

Action of Morphin on Vomiting Center in Dog. C. D. Leake, Madison, Wis.—p. 359.

Naturally Nephropathic Animals. Ability of Alkaline Solution to Influence Amount of Stainable Lipoid Material that Appears in Kidney Following Use of General Anesthetic. W. deB. MacNider, Chapel Hills, N. C.—p. 365.

Picrotoxin Hyperglycemia. A. L. Tatum, Chicago.—p. 385.

\*Action of Quinin on Sugar Mobilization with Its Bearing on Question of Glycogenolysis. A. L. Tatum and R. A. Cutting, Chicago.—p. 393.

**Action of Quinin on Sugar Mobilization.**—Tatum and Cutting assert that quinin properly administered is a glycogenolytic agent. Quinin hyperglycemia is the result of a central nervous system disturbance which leads by way of the splanchnic nerves and the normally innervated adrenal glands to lysis of glycogen. In the absence of adrenal innervation quinin produces in most instances hypoglycemia, most likely by virtue of a peripheral depression of glycogenolysis. Quinin produced, in most instances examined, a rise in alkaline reserve capacity of whole blood along with hyperglycemia in normals and hypoglycemia in animals with denervated suprarenals. Neither quinin nor epinephrin hyperglycemia can, on the basis of available evidences, be considered to be dependent on acidosis.

### Kansas Medical Society Journal, Topeka

December, 1922, 22, No. 12

Bronchoscopy. E. M. Seydell, Wichita.—p. 347.

Anxiety and Fear, Normal and Abnormal. L. C. Bishop, Wichita.—p. 351.

Practical Mental Hygiene. K. A. Menninger, Topeka.—p. 355.

### Michigan State Medical Society Journal, Grand Rapids

December, 1922, 21, No. 12

Further Experience with Two Flap Low Incision Cesarean Section. A. C. Beck, Brooklyn.—p. 489.

Heart Murmurs. J. L. Chester, Detroit.—p. 495.

\*Ophthalmia Neonatorum. G. M. Waldeck, Detroit.—p. 501.

\*Present Status of Surgical Treatment of Uterine Prolapse. F. C. Witter, Detroit.—p. 505.

\*Method of Treatment of Pyloric Stenosis at University of Michigan Hospital. L. A. Hoag, Ann Arbor.—p. 511.

**Ophthalmia Neonatorum.**—This paper is based on a series of 233 cases of ophthalmia neonatorum. The gonococcus was found in 55 per cent. of cases. Corneal involvement was present in twenty-nine cases. In twelve cases but one eye was affected, in seventeen cases both eyes were affected. Corneal damage was done in 12 per cent. There was no loss of vision on leaving the hospital in 201 out of 205 cases, or 98.04 per cent. In three cases, or 1.42 per cent., there was loss of vision in only one eye, and in one case, or 0.48 per cent., total blindness resulted. The only prophylactic means employed were care and cleanliness in handling and instillation of argyrol three or four times daily in the unaffected eye. Glass protection shields were not used.

**Treatment of Uterine Prolapse.**—Witter urges adaptation of the method to the patient rather than the patient to the method.

**Medical Treatment of Pyloric Stenosis.**—The following medical treatment is conducted at the University of Michigan Hospital in a severe case of pyloric stenosis or spasm: If the infant is already dehydrated because of fluid loss due to vomiting, and the symptoms are urgent, it is given parenteral fluid as long as conditions demand it. Usually subcutaneous or intraperitoneal saline solution is given. A stomach tube is passed and the gastric contents secured for analysis and measurement. A thorough lavage with plain water is then done and the formula given through the tube. The formula usually consists of a boiled skimmed milk and water and dextrin-maltose combination, to which may be added 3 per cent. of cereal. The strength and quantity is suited to the caloric requirements of a normal infant of the same age and weight. The lavage is repeated before every feeding at first. Atropin is added to each bottle in a quantity sufficient to keep just short of the limit of tolerance, unless distinct improvement is secured before the upper limit is reached. As the symptoms decrease the number of lavages is gradually reduced, then the dosage of atropin is carefully decreased as the infant's condition warrants. The formula is also regulated from time to time so that the retained amount continues to fully cover the caloric requirements of the patient.

### Missouri State Medical Association Journal, St. Louis

December, 1922, 19, No. 12

Some Clinical Features in Diagnosis and Treatment of Heart Failure. C. J. Hunt, Kansas City.—p. 483.

\*Working Hypothesis as to Cause and Cure of Pernicious Anemia. M. Pitzman, St. Louis.—p. 487.

\*Leukoderma Improved by Quartz Light. N. Toomey, St. Louis.—p. 491.

Congenital Defect of Anterior Abdominal Wall and Cryptorchism. J. G. Sheldon and E. P. Heller, Kansas City.—p. 493.

Mental Disorder as Factor in High Cost of Living. F. M. Barnes, Jr., St. Louis.—p. 495.

Observations in Prostatic Urethra. C. H. Suddarth, Excelsior Springs.—p. 498.

Three Cases of Foreign Body in Bladder. J. E. Dewey, Springfield.—p. 499.

Imperforate Urinary Meatus. E. E. Whiteside, Elvins.—p. 499.

A B C Movement for Hospitalization in Counties of Missouri. F. G. Nifong, Columbia.—p. 500.

**Cause and Cure of Pernicious Anemia.**—Beyond the blood destruction and regeneration, Pitzman asserts, the one factor practically universal in all cases of pernicious anemia is a marked hypochlorohydrin or absolute absence of gastric secretion. The evidence in the literature is summarized, both for and against the proposition that this severe and prolonged hyposecretion eventually results in pernicious anemia. The anatomico-physiologic basis is given on which it is maintained that the present dosage and timing of hydrochloric acid with pepsin is pathetically deficient—hence no reason to expect real results, either in theory or in practice. A theory is advanced which traces both pernicious anemia and many cases of gastric carcinoma back to a primary atrophy of the gastric tubules, including suggestions for prophylaxis.

**Quartz Light in Treatment of Leukoderma.**—Toomey has secured improvement in two cases of leukoderma by means of ultraviolet radiation. Complete pigmentation of some of the areas was obtained. More or less pigmentation was developed in all of the areas, the degree of pigmentation in



some areas effecting a very acceptable cosmetic improvement. The quartz light pigmentation of the achromic areas has persisted for more than six months with no apparent loss of the acquired pigment. The leukodermic areas that responded with complete or nearly complete pigmentation as a result of the use of the quartz light were the ones situated on the face. Achromic areas on covered surfaces of the body responded to the light with only a partial degree of pigmentation, the degree of pigmentation in an area being approximately in inverse ratio with the degree to which it had been habitually kept protected from the sun's rays.

### Nebraska State Medical Journal, Norfolk

December, 1922, 7, No. 12

- Treatment of Accessory Nasal Sinus Disease in Children. H. B. Lemere, Omaha.—p. 401.  
Newer Views in Treatment of Syphilitic Optic Atrophy. S. R. Gifford, Omaha.—p. 408.  
Radical Mastoid Operation. E. B. Brooks, Lincoln.—p. 413.  
Relation of Anaphylaxis to Practice of Eye, Ear, Nose and Throat. H. F. Morrison, Lincoln.—p. 416.  
Sphenopalatine Ganglion Neurosis. C. T. Uren, Omaha.—p. 421.  
Eye and Its Relations to Internal Medicine. W. L. Albin, Lincoln.—p. 424.  
Acute Otitis Media in Children. C. G. Baird, Beatrice.—p. 428.  
Treatment of Frontal Sinus Disease and Complications. A. G. Lueschen, Columbus.—p. 430.  
Injuries to Eyeball; Report of Cases. J. B. McPherson, Hastings.—p. 434.

### Northwest Medicine, Seattle

December, 1922, 21, No. 12

- \*Graded Extrapleural Thoracoplasty in Chronic Pulmonary Suppuration with Special Reference to Diffuse Bronchiectasis. C. A. Hedblom, Rochester, Minn.—p. 423.  
Personal Experience with Artificial Pneumothorax. G. B. Kalb, Monrovia, Calif.—p. 429.  
Relationship Between Clinical Laboratory and Physician. T. A. Flood, Salt Lake City.—p. 433.

#### Graded Extrapleural Thoracoplasty for Bronchiectasis.—

The immediate results so far achieved in the treatment of six cases of typical bronchiectasis by graded thoracoplasty, Hedblom says, seem to be distinctly encouraging. There was no mortality; marked immediate improvement occurred in all cases. The relative safety of the graded operation, the comparative freedom from pain, the amount of collapse of the chest wall, and the relatively slight deformity commend the operation. There was a reduction of sputum on the average of from 50 to 90 per cent., or even more, with an associated gain in weight and general improvement. What the ultimate results will be remains to be determined. Judging from those so far obtained, as well as from the experience of others, it would seem probable that the final results will be unsatisfactory in some cases. For such cases pneumonectomy is contemplated. The indication for thoracoplasty in chronic abscess in this series of cases was the thick walled multilocular nature of the abscess and an indeterminate amount of associated bronchiectasis, central location of the chronic abscess with the incident increased risk of hemorrhage in case of drainage, and pulmonary suppuration of the indeterminate type. From the results obtained the impression is gained that patients with chronic abscess associated with bronchiectasis are less suitable for thoracoplasty, both on account of the greater tendency to recurrence and the proneness to retention of secretion and consequent extension of the suppuration. If the patients are young and in good general condition, they may prove suitable for pneumonectomy; otherwise, a graded thoracoplasty, possibly combined with thoractomy drainage, would seem to offer the best prospect for marked relief, if not cure.

### Ohio State Medical Association Journal, Columbus

December, 1922, 18, No. 12

- Classification and Surgical Treatment of Chronic Diarrhea-Colitis. S. G. Gant, New York.—p. 813.  
Some Phases of Intestinal Obstruction. W. D. Haines, Cincinnati.—p. 819.  
Typhoid Fever, Its Treatment and Mortality. H. Jones, Circleville.—p. 822.  
Pyelitis in Puerperium. A. Rogers, Columbus.—p. 825.  
Feeding of Infants Based on Recent Experience. S. D. Giffen, Toledo.—p. 829.  
Treatment of Disease of Accessory Nasal Sinuses. H. I. Lillie, Rochester, Minn.—p. 834.

Physical Intranasal Conditions Favoring Involvement of Nasal Accessory Sinuses. M. Metzenbaum, Cleveland.—p. 837.

\*So-Called Angioneurotic Eruptions. A. Ravogli, Cincinnati.—p. 839.

\*Parkinson's Disease as Sequel to Lethargic Encephalitis. H. H. Drysdale, Cleveland.—p. 842.

**Rôle of Anaphylaxis in Angioneurotic Eruptions.**—According to Ravogli anaphylaxis plays a leading rôle in so-called angioneurotic eruptions. Toxins from faulty metabolism get into the circulation and are carried to the periphery where they irritate the sensory and trophic nerve filament, causing itching, hyperaemia, and cutaneous exudation. Urticaria, angioneurotic edema, dermatitis herpetiformis, pruritis and recurrent eczema are leading types of vasomotor anaphylactic skin eruptions. Protein sensitization is very useful for diagnosis and in the treatment of these distressing conditions. The treatment, which has given Ravogli the best results has been the administration of calomel in small doses from  $\frac{1}{5}$  to  $\frac{1}{3}$  grain, together with sodium bicarbonate, repeated two or three times a day. Calomel has a specific action against the yeast fungi which remain in the gastro-enteric canal, and against the colon bacilli. At the same time the use of magnesium sulphate with sodium sulphate is beneficial, removing excretory substances from the system. Sodium bicarbonate and potassium citrate restore the alkalinity of the blood and remove acidosis. In obstinate cases the administration of phenyl salicylate together with sodium bicarbonate as an intestinal antiseptic, has given good results, and obstinate cases of chronic urticaria, and of dermatitis herpetiformis have yielded to this treatment.

#### Parkinson's Disease as Sequel to Lethargic Encephalitis.—

The twenty-three cases reported by Drysdale apparently disprove the former conception that paralysis agitans is practically confined to the presenile period of life as the majority of the patients were less than 40 years of age and two were under 20. Postencephalitic Parkinsonian syndrome seems to pursue a much more rapid course than the usual type of the disease and the prodromal or developmental period is undoubtedly shorter. Several of these cases were unmistakably atypical. One patient died after eight months invalidism and during the progress of the malady, the possibility of a basilar meningitis was entertained. Unfortunately, necropsy was denied. The evidence serves to indicate that infections are active in no small degree. All of the patients gave a history of having been victims of sleeping sickness so-called, but in a few this information lacked adequate confirmation. It is, therefore, possible that their former illness was some other form of encephalitis or a meningitis, as conditions of this character have been erroneously confounded with lethargic encephalitis. The treatment of this new problem has been most disheartening. Hyoscin hydrobromate was of value in suppressing the tremors but nothing has proved helpful in combating the ravages of the disease.

### Philippine Journal of Science, Manila

November, 1922, 21, No. 5

- Philippine Parasites of Family Trigonalidae. S. A. Rohwer.—p. 417.  
Malayan Aphididae. R. Takahashi.—p. 421.  
Chrysomeliden der Philippinen, III. V. J. Weise.—p. 423.  
Flora of Southeastern China. E. D. Merrill.—p. 491.

### Public Health Journal, Toronto

November, 1922, 13, No. 11

- Variolae and Morbilli Four Centuries Ago. W. R. Riddell.—p. 481.  
Venereal Disease Situation in Canada. J. J. Heagerty.—p. 485.  
Place of Sanitary Engineer in Public Health. F. A. Dallyn.—p. 497.  
School Child and Nutrition. H. R. Y. Reid.—p. 503.  
Agglutination Phenomena with Diphtheria Antitoxin. P. J. Moloney and L. O. Hanna.—p. 508.

### U. S. Naval Medical Bulletin, Washington, D. C.

November, 1922, 17, No. 5

- History of United States Naval Hospital, Fort Lyon, Colo., and Activities of Naval Medical Corps in Development of Hospital for Sanatorium Purposes. F. W. F. Wieber.—p. 745.  
Kolmer Modification of Wassermann Test. J. Harper.—p. 757.  
Medicinal Garden. G. W. Calver.—p. 763.  
Functions and Organization of Medical Corps Units Serving with Marine Corps in Field. S. N. Raynor.—p. 771.  
Hygiene of Submersibles. C. M. Belli.—p. 785.  
Classification, Diagnosis and Treatment of Bone Tumors. J. W. White.—p. 802.  
Sterilization of Glass Syringes. H. E. Harvey.—p. 810.



## FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### Archives of Radiology and Electrotherapy, London

November, 1922, No. 268

- Employment of Electrical Methods in Diagnosis and Prognosis of Paralysis Due to Lesions of Peripheral Nerves. G. Bourguignon.—p. 161.  
Treatment of Contracted Fingers and of Some Cases of Cataract by Mild High Frequency Currents and Violet Rays. C. E. Shelly.—p. 177.  
Backache and Referred Pain. E. F. Cyriax.—p. 183.  
Treatment of Scoliosis. W. J. Broad.—p. 187.  
Backache and Referred Pain. I. Gunzburg.—p. 188.  
Reeducation of Muscles. P. Kouindjy.—p. 189.

### Brain, London

October, 1922, 45, No. 2

- Reflexes of Defense. P. J. Babinski.—p. 149.  
Study of Sherrington Decerebrate Animal in Chronic as Well as Acute Condition. H. C. Bazett and W. G. Penfield.—p. 185.  
Pathogenesis of Subacute Combined Degeneration of Spinal Cord, with Special Reference to Its Connection with Addison's (Pernicious) Anemia, Achlorhydria and Intestinal Infection. A. F. Hurst and J. R. Bell.—p. 266.  
Meningiomas (Dural Endotheliomas): Their Source, and Favored Seats of Origin. H. Cushing.—p. 282.

### British Medical Journal, London

Dec. 9, 1922, 2, No. 3232

- \*Effect of Cessation of Irritant on Development of Experimental Tar Cancer. A. Leitch.—p. 1101.  
\*Production of Cancer by Specific Forms of Irritation. J. A. Murray.—p. 1103.  
\*Paraffin Cancer and Its Experimental Production. A. Leitch.—p. 1104.  
\*Experimental Production of Cancer by Arsenic. A. Leitch and E. L. Kennaway.—p. 1107.  
Occupation Cancer of Paraffin and Oil Workers of Scottish Shale Oil Industry. A. Scott.—p. 1108.  
Epitheliomatous Ulceration in Industry. T. M. Legge.—p. 1110.  
Roentgen-Ray Cancer. C. Rowntree.—p. 1111.  
\*Experimental Soot Cancer. R. D. Passey.—p. 1112.  
Adder Bite. T. Oliver.—p. 1114.  
\*Simple Method of Treating Club Foot. A. S. B. Bankart.—p. 1115.  
\*Pneumococcal Influenza. O. F. T. East.—p. 1117.  
\*Case of Bronchobiliary Fistula. A. G. Yates.—p. 1117.  
\*Restoration of Round Ligaments. A. J. Nyulasy.—p. 1118.  
Possible Case of Bronchopulmonary Spirochetosis. J. F. Johnston.—p. 1119.  
Eserin Poisoning Produced by Intravenous Injection: Recovery. B. L. Slater.—p. 1120.  
Colloidal Gold for Lange Test. T. Grey.—p. 1120.

**Effect of Cessation of Irritant on Tar Cancer.**—The experiments conducted by Leitch clearly show that when tar has been applied repeatedly for a certain length of time and the irritant is then removed, tumors, even carcinoma, may make their appearance at a later date. It must be that the irritation produces in the normal cells subjected to its influence some profound change, undetectable by the microscope, so that they eventually proliferate in an unrestrained and in a harmful fashion. Leitch believes that it may be concluded that the neoplastic response to an irritant is a slow tissue reaction that exhibits no defensive property and that subserves no useful function. The internal changes in the cells in the earliest stages are unknown.

**Experimental Cancer Produced by Irritation.**—Murray conducted experiments in which unaltered tar, alcoholic extract, and ethereal extract of tar were applied to separate areas of the dorsal skin of each of sixty normal mice. After four months, when the first tumor appeared, fifty mice survived, and of these twenty-five presented malignant new growths. Twenty-two animals bore carcinoma at the site painted with the ethereal extract; twelve had carcinoma at the site treated with the original tar, and two only had carcinoma at the site treated with the alcoholic extract. In one of these animals no tumors appeared at the sites treated with the apparently much more efficacious whole tar and ether extract.

**Experimental Paraffin Cancer.**—By the frequent application of crude shale oils containing paraffins Leitch has thus produced tumor formations in thirty out of seventy-four mice which survived the treatment for more than 100 days. Owing to the increasing death rate after that time it is impossible to say how many more would have developed tumors had

they lived long enough, or how many of the simple tumors produced would have gone on to malignancy. One animal resisted for more than nine months. The disappearance of some of the simple papillomas corresponds with what is found in man. In many of the older papillomas considerable difficulty has been encountered in forming a judgment of their benignity or malignancy. Experimental evidence shows that it takes at least ten years of exposure to paraffin oils to produce cancer in man—which corresponds to actual experience.

**Experimental Arsenic Cancer.**—In the hope of determining experimentally if arsenic might act as a tumor producing, or carcinogenic, agent, Leitch and Kenneway fed a series of rats and mice on bread containing arsenic. The experiments were unsuccessful. Then potassium arsenite was applied locally. In three months' time two thirds of the mice had died, but a growing tumor was produced in one of the survivors. Microscopic examination of a section through the tumor showed it to be a typical squamous cell carcinoma. There were also metastases in the lung in this animal.

**Experimental Soot Cancer.**—Cancer was produced experimentally by Passey by means of soot mixed with quicklime. In animals fed a fat soluble vitamin poor diet the tumors appeared a little earlier.

**Treatment of Club Foot.**—The apparent deformity having first been fully corrected in the ordinary way by tenotomy, manipulation, and splinting, Bankart secures permanent fixation of the foot in a corrected position by means of an artificial ligament attached to the fifth metatarsal bone and to the outer side of the tibia.

**Pneumococcal Influenza.**—East discusses an epidemic of cases influenzal in type in which the pneumococcus was the organism found in overwhelming predominance on examination of throat swabs by direct smear and culture in every case. *Micrococcus catarrhalis* and streptococci also occurred, but were in the minority, and *Bacillus influenzae* was not seen. Pneumococci were also the cause of such complications as occurred. The symptoms varied from a slight headache, sore throat, and fever to very severe prostration.

**Bronchobiliary Fistula.**—Yates cites a case in which an abscess of the liver appears to have penetrated the diaphragm and discharged itself into the lung, and at the same time to have effected a communication with one of the larger bile passages, with the result that pure bile continued to escape long after all pus had disappeared.

**Restoration of Round Ligaments.**—The operation devised by Nyulasy consists in splitting the anterior leaf of the broad ligament parallel to the round ligament, between the round ligament and the bladder, undermining the opening, and closing it by a purse string suture, the outer limit of the suture being in the vicinity of the internal abdominal ring and the inner limit being toward the uterine cornu. The immediate effect is to bring the uterus into anteversion, and the undue laxity of the anterior leaf of the broad ligament is reduced.

### Indian Medical Gazette, Calcutta

November, 1922, 57, No. 11

- Therapeutics of Cinchona Alkaloids. R. N. Chopra.—p. 401.  
Analysis of Clinical Picture in Kala-Azar. L. E. Napier.—p. 406.  
Production and Pharmacologic Action of Khesari Amine. H. W. Acton and R. N. Chopra.—p. 412.  
Care of Women and Children in Indian Industries. D. F. Curjel.—p. 415.  
Case of Salivary Calculus. G. D. Mall.—p. 418.  
Case of Bronchomoniliasis. M. J. Parmanand.—p. 418.  
Case of Oxyuris Vermicularis in Vermiform Appendix. W. L. Harnett.—p. 419.

### Journal of Laryngology and Otology, Edinburgh

December, 1922, 37, No. 12

- Benign Forms of Otogenic Meningitis. H. Mygind.—p. 597.  
Relations of Optic and Vidian Nerves to Sphenoid Sinus. G. Young.—p. 613.

### Lancet, London

Dec. 9, 1922, 2, No. 24

- Forty Years in History of Tuberculosis. P. Kidd.—p. 1207.  
\*Relation of Calcified Abdominal Glands to Urinary Surgery. J. T. Walker.—p. 1213.



Case of Paroxysmal Hemoglobinuria. L. S. Hannema and J. R. Rytma.—p. 1217.

\*Variations of Blood Pressure Under Intravenous Injections of Phenolic Compounds (Arsenobenzol, Arsphenamin, Neo-Arsphenamin, etc.). M. Pomaret.—p. 1220.

\*Isolation and Preservation of Tubercle Bacilli by Means of Glycerin. C. C. Twort.—p. 1221.

\*Urea Content of Cerebrospinal Fluid. J. S. Anderson.—p. 1221.  
Case of Club-Hand. A. Mourad.—p. 1222.

**Calcified Abdominal Glands.**—In eleven of forty-two cases of calcified abdominal glands Walker operated and removed the glands. In ten of these cases the operation was planned for the removal of the glands, and in one case a calculus was removed from the kidney and the gland was uncovered in stripping up the ascending colon. It was removed at the same time. The result of the operation in these cases was the disappearance of the pain, whether it had the form of constant aching or recurrent attacks of colic. Walker's view in regard to adults by whom the calcareous end stage of *tabes mesenterica* has been reached, is that operation is only justifiable in those cases in which symptoms are severe and are proved to be directly due to the calcified glands. These cases can be selected only after investigation by thorough modern methods of examination.

**Variations of Blood Pressure Caused by Phenolic Compounds.**—The experiments reported on by Pomaret show that phenomena of shock under intravenous injections of arsphenamin and neo-arsphenamin are phenolic shocks, resembling the shocks registered after intravenous injections of more simple phenolic compounds, such as trinitrophenol and phenol. The shock is the more profound according as the solution injected is more acid, and consequently more precipitating (flocculating) with blood plasma. Intramuscular injections of these compounds do not produce in dogs the cardiovascular troubles registered.

**Preservation of Tubercle Bacilli by Means of Glycerin.**—The method employed by Twort is as follows: A large platinum loopful of sputum or other material from which acid fast bacilli are to be isolated, is inoculated into tubes containing 1 c.c. of pure glycerin, 75 per cent., 50 per cent., and 25 per cent. glycerin in physiologic solution of sodium chlorid. After remaining for twenty-four hours at room temperature, cultures are made on Dorset's 4 per cent. glycerin egg medium or Petroff's medium. If contaminations are numerous in all the tubes, further cultures are made on the third day. Sometimes all contaminating bacteria are destroyed after remaining twenty-four hours in glycerin, but more frequently they are not all destroyed, and the tubes may be very heavily contaminated. It may be necessary to revert to a third culture after a week; but the tubercle bacilli themselves do not appear to survive for longer than from three to four weeks. So far, by the use of glycerin, Twort has not once failed to isolate, with extreme ease, the tubercle bacillus from any specimens in which the bacillus has been demonstrated microscopically. Specimens, if left sufficiently long in glycerin have uniformly given pure cultures of the tubercle bacillus, even though originally containing very numerous contaminating micro-organisms.

**Urea Content of Cerebrospinal Fluid Has Diagnostic Value.**—In an obscure case Anderson succeeded in making a diagnosis of uremia by an examination of the cerebrospinal fluid which contained 310 gm. urea per hundred cubic centimeters.

### Medical Journal of Australia, Sydney

Oct. 28, 1922, 2, No. 18

Flies and Infectious Disease. L. Harrison.—p. 489.

Biology of House Fly. T. H. Johnston.—p. 494.

\*Hlabronemic Conjunctivitis in Man Producing a "Bung Eye." L. B. Bull.—p. 499.

Thyroidectomy. M. O'G. Hughes.—p. 501.

**Habronemic Conjunctivitis.**—A small tumor removed from the conjunctiva of a child, aged 13 months, was found by Bull to be caused by *habronema* which in the adult stage are parasites in the stomach of the horse. This granulomatous condition occurs on the external mucous membranes of the horse, viz., conjunctiva and urethra at the orifice, and also on other parts of the external surface of the body and a pulmonary form has been described.

### Bulletin de l'Académie de Médecine, Paris

Nov. 14, 1922, 88, No. 37

\*Tuberculosis and Pregnancy. Bar.—p. 219.

\*Value of Vaccine Against Typhoid Fever. Loir and Legangneux.—p. 241.

\*Prevention of Diseases in Morocco. R. Martial.—p. 244.

\*Hyperostosis of Tibia and Fibula Due to Leprosy. G. Delamare.—p. 247.

\*Roentgen Epitheliomas Cured by Diathermy. H. Bordier.—p. 248.

**Tuberculosis and Pregnancy.**—Bar is pessimistic concerning the influence of pregnancy on tuberculosis. Very often the danger confronting the woman disappears under the cover of the physiologic euphoria of the second half of pregnancy until the tuberculosis flares up. The last stage of pregnancy is particularly unfavorable to tuberculosis, just as it is to influenza, smallpox, malaria and other infectious diseases, none of which are helped by the termination of pregnancy at this late stage. The cause is not certain, but Bar agrees with Fiessinger and Brodin's views on hepatic insufficiency as the cause of lowered resistance in pregnancy. Experiments on animals indicate clearly the disastrous influence of pregnancy on the development of tuberculosis, and it was interesting to see that the liver is a site of predilection in these animals as well as in pregnant women. Pregnancy is, according to Bar, a serious event in every woman with active tuberculosis, a disaster in advanced bilateral cases, and a real and sometimes very severe risk in every woman endangered by an active tuberculosis. He emphasizes the importance of the cutaneous reactions with tuberculin. If a woman in the beginning of pregnancy shows a strong reaction, Bar is conservative, provided that the findings in the lungs are satisfactory. If, on the contrary, such a woman has only a feeble cutaneous reaction, or none at all, one should operate, especially if the lesions seem to have started with the pregnancy. He prefers a simple abortion during the first months, and rarely resorts to hysterectomy. He does not like to operate in the second half. The necessity for after-treatment is evident.

**Value of Vaccine Against Typhoid Fever.**—Loir and Legangneux bring a statistic confirmation of the protective value of vaccination.

**Prevention of Diseases in Morocco.**—The tendency of the French government in Morocco is to adopt the principles of hygiene to the life of the people, instead of trying to change the habits of Mohammedans. He describes the methods used in the fight against typhus at Fez.

**Multiple Roentgen Epitheliomas Cured by Diathermy.**—Bordier recommends the use of diathermy for the removal of roentgen-ray epitheliomas, describing two apparently absolutely successful cases. He was himself the subject in one.

### Bulletin Médical, Paris

Nov. 18, 1922, 36, No. 47

\*Chronic Bronchitis and Pulmonary Emphysema. E. Sergent.—p. 935.

**Chronic Bronchitis and Pulmonary Emphysema.**—Sergent emphasizes that almost every emphysema is complicated by a bronchitis, while not every chronic bronchitis has an emphysema. The question whether chronic bronchitis is accompanied by emphysema may be very difficult and even impossible to solve clinically, according to Sergent. The etiologic diagnosis is extremely important, as tuberculosis, syphilis, cardiac and renal troubles, diatheses, diseases of the upper respiratory passages may be the causes and have to be treated accordingly. He believes that emphysema is caused by the bronchitis mechanically, and is increased by inflammatory changes. One should not forget to consider, besides, a congenital dystrophy of the connective tissue of the lungs.

### Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 17, 1922, 46, No. 32

\*Cryptogenous Septicemia. A. Clerc and G. Perrochaud.—p. 1512.

\*Treatment of Hereditary Syphilis. J. Comby.—p. 1515.

\*Scleroderma and Pituitary. R. Bénard and E. Coulaud.—p. 1518.

Herpes Zoster and Varicella. A. Cayrel.—p. 1524.

\*Sclerodermic Syndrome with Goiter. Laignel-Lavastine and E. Coulaud.—p. 1526.

Erythema Nodosum and Herpetic Tonsillitis. J. Troisier.—p. 1530.

\*Hemibulbar Retro-Olivary Syndrome. Ardin-Delteil et al.—p. 1535.

Syringe for Blood Transfusion. Emile-Weil and Isch-Wall.—p. 1537.



**Cryptogenous Septicemia.**—Clerc and Perrochaud's patient presented an intermittent fever, an eruption resembling rubella, arthralgias and a relative neutrophilia. Although no signs of meningitis were present and the cultures remained negative, they used antimeningococcus serum with good results.

**Treatment of Hereditary Syphilis.**—Comby urges not to forget mercury and iodids.

**Scleroderma and Pituitary.**—Bénard and Coulaud's case was refractory to the administration of thyroid, and was favorably influenced by the pituitary gland. This does not speak necessarily against the thyroid origin, according to them. Their patient died, and changes in the pituitary, adrenals and thyroid were found.

**Sclerodermic Syndrome with Goiter.**—Laignel-Lavastine and Coulaud report a case of scleroderma with atrophy of phalanges in a woman with goiter and tuberculosis. The cutaneous tuberculin reaction was negative, but turned positive when repeated after stopping the administration of thyroid and giving powdered ovary for ten days.

**Hemibulbar Retro-Olivary Syndrome.**—The case presented by Ardin-Delteil was due to syphilis.

### Presse Médicale, Paris

Nov. 15, 1922, 30, No. 91

\*Vaccines Sterilized by Formaldehyd. S. Costa.—p. 985.

\*Bilirubinemia in Icterus. M. Brulé et al.—p. 986.

**Vaccine Sterilized with Formaldehyd.**—Costa points out that formaldehyd is an excellent germicide, conserves the bacteria well while conserving their immunologic properties and destroying toxins. The emulsion of the culture is brought up to contain  $\frac{1}{50}$  to  $\frac{1}{300}$  of a 40 per cent. formaldehyd solution, and is preserved in the icebox. One can remove the formaldehyd by centrifugating the emulsion, but the presence of  $\frac{1}{8000}$  is not painful.

**Bilirubinemia in Icterus.**—Brulé, Garban and Weissmann object to van den Bergh's method that it gives intermediary stages between the direct and indirect reaction for bilirubin. Besides this, they find that it may change in the same patient in different stages, and believe that it is due to the amount of bilirubin in the serum. They compared the test with Blankenhorn's dialyzing of bilirubin. If the bilirubinemia is low and van den Bergh's reaction is slow (indirect), no bilirubin dialyzes. But in cases of a stronger bilirubinemia, reaction may be direct and yet the bilirubin may not dialyze. Brulé and his co-workers believe that the bilirubin which is adsorbed to the proteins of the plasma, gives the indirect reaction; does not dialyze, and does not appear in the urine. If the amount of it in the blood is too large, one part of it remains free and gives the direct reaction. Therefore they conclude that it indicates only the degree of bilirubinemia, but not a different sort.

### Progrès Médical, Paris

Nov. 18, 1922, 37, No. 46

\*Internal Secretion and the Blood. M. Perrin and A. Hanns.—p. 537.

\*Treatment of Complicated Gonorrhea. Legueu.—p. 538.

Ergot. H. Vignes.—p. 540.

**Internal Secretion and the Blood.**—Perrin and Hanns discuss the influence on the blood cells of experimental and clinical changes in the glands with internal secretion.

**Treatment of Complicated Gonorrhea.**—Legueu emphasizes the fact that the majority of complications of gonorrhea is caused by wrong treatment, especially by using too strong solutions too often. In prostatitis, it is necessary to put the patient to bed, to give him two sitz baths daily, which ought to be as hot as he can stand. Belladonna suppositories should be given in the rectum. The irrigations have to be mild. Phlegmonous prostatitis must be opened from the perineum. Legueu has never seen any good from incisions of an epididymitis. He recommends rest in bed and ice bags. The skin of the scrotum must be protected by a double layer of cloth, to avoid necrosis. Mild irrigations should be con-

tinued. The seminal vesicles are always affected in these cases. Mild massage preceding the irrigations gives good results. Every patient who treats himself gets cystitis. It is cured by injecting a 1 per cent. solution of silver nitrate into the bladder (after an irrigation). If gonococci do not disappear in two or three months, vaccines are of use.

Nov. 25, 1922, 37, No. 47

Influence of Pregnancy and Delivery on the Pelvic Statics. H. Vignes.—p. 549.

Delirium, Belief and Play. Laignel-Lavastine.—p. 553.

\*Treatment of Vascular Spasms by Sympathectomy. J. Forestier.—p. 558.

**Treatment of Vascular Spasms by Periarterial Sympathectomy.**—Forestier reviews favorably this field. The operation proved useful on the internal carotid in corneal ulcers due to injuries of the head, on the brachial artery in Raynaud's disease, on the hypogastric in craurosis of the vulva, and on the femoral artery in varicose ulcers. It is useful not only in angiospasm, but also in symptoms due to an overactivity of vasodilators.

### Revue Franç. de Gynécologie et d'Obstét., Paris

October, 1922, 17, No. 10

\*Malformations of Fallopian Tubes. F. Jayle and Halpérine.—p. 489.

\*Obstetric Future After Incision of Cervix. P. Balard.—p. 525.

**Malformations of Fallopian Tubes.**—Jayle and Halpérine refer in particular to blind accessory passages which, they say, are comparatively common. By examination of serial vertical sections of tubes they have discovered a number of malformations, two passages instead of one, accessory parts, supernumerary tubes, and rudimentary tubes in the broad ligament. They give twenty illustrations of these various types of malformations, of which about a dozen cases have been published in all, and describe in detail four cases personally observed of accessory passages without outlet. In one case these accessory passages were found in a ruptured tubal pregnancy. In another case the walls of both tubes and of the uterus were exceptionally thick, and a cross section of the tube on one side showed three passages and a patch of ossification. They explain the embryonal mechanism which entails these blind passages, parallel with the general direction of the tube, of congenital origin. A diverticulum is the result of some pathologic process.

**The Obstetric Future After Incision of Cervix During Childbirth.**—Balard has compiled 39 cases of women requiring deep incision of the cervix during childbirth who have passed through one or more pregnancies since. Conception afterward is rare. Hauch knows of only 15 per cent. in his 159 cases. In this group of 26 women there were 2 abortions; cesarean section was required later in 6; basiotrypsy once; and there were 2 deaths from placenta praevia with grave nephritis or atony of the uterus. In Hauch's service the incision of the cervix is restricted to the intravaginal portion of the cervix. When more than this is required, vaginal cesarean section is given the preference. The cervix is reconstructed after the incisions to restore its shape and leave it supple. The apparent facility of the incisions should not mislead to underestimate their influence on future pregnancies, although properly done they do not gravely compromise the obstetric future.

### Schweizerische medizinische Wochenschrift, Basel

Nov. 23, 1922, 52, No. 47

\*Roentgen Ray Treatment of Epilepsy. M. Steiger.—p. 1141.

\*Familial Multiple Sclerosis. F. Lotmar.—p. 1146.

Therapeutic Increase of Blood Coagulability. P. F. Nigst.—p. 1148. Conc'n No. 48.

Trauma and Tuberculosis of Bones and Joints. F. Zollinger.—p. 1154. Conc'n.

**Treatment of Epilepsy by Roentgen Rays.**—Steiger finds that it would be premature to conclude from his fifteen cases of epilepsy treated by the roentgen rays, that the benefit observed in some was due to this treatment.

**Familial Multiple Sclerosis.**—Lotmar describes this rare coincidence in two sisters.



**Annali Italiani di Chirurgia, Naples**Aug. 30, 1922, **1**, No. 6-7

- \*Treatment of Aneurysms. G. Pascale.—p. 441. Conc'n.  
 \*Fracture of Neck of Scapula. G. Razzaboni.—p. 454.  
 Primary and Solitary Hydatid Cyst in Omentum. G. Bolognesi.—p. 466.  
 \*Treatment of Congenital Vaginal Anus. U. Camera.—p. 473.  
 \*Spontaneous Cures of Cancer. D. B. Roncali.—p. 485. Conc'n.  
 \*Paget's Disease. C. Gargano.—p. 500.  
 Staphylococcus Vaccine Therapy. V. Simeoni.—p. 519.  
 Cortical Blindness After a War Wound. G. Berti.—p. 536.

**Aneurysm of Large Pelvic Vessels.**—Pascale has had extensive experience in this line. In two young men the aneurysm retrogressed completely under treatment for syphilis, and he warns that in all dubious cases specific treatment should be given a chance before attempting any operation. Under other conditions, surgical treatment is indispensable, and for traumatic aneurysms he advocates extirpation of the sac as the only measure to protect against mishaps later. If the sac cannot be entirely removed, it can be opened and cleared, and the superfluous wall removed. Ligation of the artery above the aneurysm should be reserved for the last resource. An arteriovenous aneurysm should be treated by resection of the sac between the four ligatures. An aneurysm of a small artery on a limb should always be resected, as collateral circulation can be counted on. With a spontaneous aneurysm, the general medical treatment is the main thing. He describes a special technic for operating on an arteriovenous aneurysm of the internal carotid, with pulsating exophthalmos, and extols it as great progress in treatment of this grave lesion. He describes two cases of aneurysm of large vessels in the pelvis, and remarks in conclusion that in his surgical service at Naples a special study has been made of aneurysms for many years.

**Complications of Fracture of the Scapula.**—Razzaboni describes what he calls plexiform angioneurolysis in the axilla, an operation to correct symptoms resulting from the complications of fracture of the scapula.

**Congenital Vaginal Anus.**—Camera describes the technic with which he operated on a child of 3 with an opening between the rectum and vagina and complete incontinence of feces. He began by diverting the stools by an artificial anus after thorough purging. The distal bowel was repeatedly flushed from the artificial anus until the water came through clear. Then the coccyx was resected to give ample access to the rectum which showed no signs of a sphincter when opened. The communication with the vagina was sutured and the wall of the vagina reconstructed. Two months later the artificial anus was closed. The new anus is not yet continent but seems to be becoming more continent as time passes. The levator ani muscles have been known to assume the functions of a sphincter (Delbet), and there seems to be a suggestion of this in this case.

**Spontaneous Cures of Cancer.**—Previous instalments of Roncali's review of this subject have been summarized as they appeared. He cites ninety-eight articles, his final conclusion being that a natural or spontaneous cure of true malignant disease has never been demonstrated. In extremely exceptional cases the primary cancer may retrogress when metastases develop, but the malignant disease as a whole continues its course.

**Paget's Disease of the Nipple.**—Gargano presents evidence to prove that Paget's disease of the nipple is an epithelioma.

**Pediatria, Naples**Nov. 15, 1922, **30**, No. 22

- Stephrothrix Meningitis in Children. F. Fonzo.—p. 1043.  
 Intracranial and Spinal Hemorrhages in the New-Born. F. de Angelis.—p. 1054. Idem.—p. 1083.  
 Pathology of Bones. A. F. Canelli and G. B. Audo-Gianotti.—p. 1057. Cont'd.  
 \*Cholesterin Content in Leishmaniasis. G. Castorina.—p. 1076.  
 Case of Intermittent Acrocyanosis in Hereditary Syphilis. M. A. Torroella.—p. 1081.

**Cholesterin Content in Leishmaniasis.**—Castorina found the cholesterin content of the blood in seventeen cases of internal leishmaniasis low, from 0.106 per cent. to 0.05 per cent. Only one case had 0.14 per cent. This case was examined at the beginning of the disease, while the general state was still

good. During convalescence the amount usually became higher.

**Policlinico, Rome**Nov. 13, 1922, **29**, No. 46

- \*Changes in Testicle and Epididymis After Resection of Some of the Spermatic Veins. G. Nicastro.—p. 1501.  
 Multiform Erythema. C. Manassei.—p. 1502.  
 \*Hydatid Fremitus in Bladder. D. Maselli.—p. 1507.

**Changes in Testicle and Epididymis After Resection of Spermatic Veins.**—Nicastro found that in dogs the resection of the posterior group is followed by severe changes in the testicle, while the resection of the anterior group did not have bad results. The experiments are important for the treatment of varicocele.

**Hydatid Fremitus in a Distended Urinary Bladder.**—Maselli shows that other cysts or similar organs may present a typical tremulous impulse on palpation like a hydatid cyst.

Nov. 20, 1922, **29**, No. 47

- \*Experiments on Hydrocephalus. A. Chiasserini.—p. 1525.  
 Development of Vaccine Pustules by Direct Contact. C. Ramorino.—p. 1527.  
 \*Oxygen to Start a Pneumothorax. G. Capuani.—p. 1530.  
 Comment on Nicolich's "Roentgenotherapy of Carcinoma of the Bladder." G. Sighinolfi.—p. 1532.  
 Prevention of Diseases Among Railway Employees. Dragotti.—p. 1536.

**Experiments on Hydrocephalus.**—Chiasserini produced in dogs a rapid accumulation of fluid in the lateral ventricles of the brain by occluding the aqueduct of Sylvius.

**Oxygen to Start a Pneumothorax.**—Capuani follows the advice of authors who recommend the use of oxygen to start a pneumothorax in difficult cases.

**Archivos Latino-Amer. de Pediatría, Buenos Aires**September, 1922, **16**, No. 9

- Disturbances in the Artificially Fed. L. Morquio.—p. 513. Cont'd.  
 \*Congenital Myxedema. A. Armand Ugón.—p. 524.  
 Tumor in Median Lobe of Cerebellum. R. Chiappori and L. Velasco Blanco.—p. 528.  
 Purulent Conjunctivitis in the Newly Born. C. M. Berro.—p. 533.  
 Influenzal Croup. Six Cases. A. M. Bargo.—p. 539.  
 Typhoid in Children at La Plata, 1912-1921. C. S. Cometto.—p. 548.  
 Cerebral Hemorrhages in Boy of 11. José Bonaba.—p. 556.  
 \*Purpura with Ventricular Hemorrhage. E. Portu Pereyra.—p. 562.

**Congenital Myxedema.**—The child's condition improved somewhat under thyroid treatment begun when it was 11 months old. The mother, aged 38, had a goiter of twenty-two years' standing, and of late years had presented symptoms of hyperthyroidism.

**Purpura with Ventricular Hemorrhage.**—The boy of 13 did not seem very sick, the fifteenth day of mild Werthof's disease, when the hemorrhage into the ventricle proved fatal. Pereyra knows of only three cases of meningeal hemorrhage on record in the course of purpura in recent years. In two the disease was very grave but, in one, it was mild as in his own case.

**Prensa Médica Argentina, Buenos Aires**Aug. 20, 1922, **9**, No. 8

- \*Slow Endocarditis. T. Castellano and R. Garzón.—p. 189. Conc'n No. 12, p. 314.  
 Besredka's Antigen in Diagnosis of Tuberculosis. A. Bachmann and A. F. Poiré.—p. 197.  
 \*Cholecysto-Enterostomy. N. Tagliavacche.—p. 198.  
 \*Retention of Urine in the Female. A. Calmens.—p. 200.  
 Benzyl Benzoate in Therapeutics. P. M. Barlaro.—p. 204.

**Slow Endocarditis.**—Castellano and Garzón give a profusely illustrated report of a case of *Streptococcus viridans* endocarditis lenta, comparing the clinical and bacteriologic findings with the pathologic anatomy. The patient was a woman of 35 with an apparently healthy son 8 years old. At 14 she had had acute articular rheumatism, and this had entailed dyspnea on exertion, and four of her children died soon after birth. The malignant endocarditis developed with pains in bones and muscles and left hypochondrium, and ran a nine months course. The viridans and also hemolytic streptococci were found in the cultures. The hemolytic cultivated from the blood evidently became transformed into the viridans. The latter alone was found in the organs, as also in rabbits, inoculated with the patient's blood. In treatment, vaccines and transfusion of blood and splenectomy seem to



be the only measures that have offered any chance of benefit. Four cases have been published in which recovery followed transfusion of blood (300 or 400 c.c. a week). Death seems to occur from the general infection rather than from the heart.

**Plastic Cholecystenterostomy.**—Tagliavacche demonstrated at the local surgical society in 1919 an apparently healthy dog on which he had performed a special plastic operation six months before. (The technic was described in the *Prensa Médica*, Oct. 30, 1919.) Three years later he killed the animal, and the illustration here shows the perfect success of the operation. The liver is of normal size and aspect. The ligature of the common bile duct is still in place, and the passage is still impermeable. The new plastic duct, uniting the gallbladder and the cystic duct with the duodenum, had evidently worked perfectly during the three years and three months before the dog was killed.

**Retention of Urine in the Female.**—There was nothing organic to explain the period of retention of urine in the girl, eight months after the onset of menstruation and again two years later. After the urine had been systematically drawn for a time, the practice was abruptly discontinued, and the girl began to urinate normally, and menstruation became regular again, confirming the psychopathic origin.

Sept. 20, 1922, 9, No. 11

- \*Eosinophilia in Stomach Fluids. C. Bonorino Udaondo.—p. 281.
- \*Prevalence of Neurosyphilis. M. Alurralde.—p. 283.
- Hydatid Cyst in Upper Arm. N. Tagliavacche.—p. 288.
- The Hospital Problem in Argentina. E. Catalán.—p. 291.

**Eosinophilia in Stomach Content.**—Bonorino Udaondo found local eosinophilia pronounced in the six cases of achylia tabulated. In all there was some grave organic disease. The findings were constantly negative in transient or persisting functional achylia.

**Increasing Prevalence of Neurosyphilis.**—Alurralde declares that inadequate arsenical treatment of syphilis merely deprives the organism of its resisting powers, without eradicating the infection. The spirochetes thus have freer play than in absolutely untreated syphilis, and their ravages are graver. Resumption of medication then is liable to entail serious meningeal reactions, like a kind of Herxheimer reaction.

### Repertorio de Medicina y Cirugía, Bogota

July, 1922, 13, No. 10

- \*Mechanism of Hearing. V. Ribón.—p. 518.
- Electrotherapy. I. Rodríguez.—p. 527.
- Alcoholism in Colombia. E. Montaña.—p. 541. Cont'n.
- Antityphoid Serotherapy. Luis F. Buenaventura G.—p. 554. Cont'n.

**Mechanism of Hearing.**—Ribón has made a special study of the psychophysiology of hearing, and especially of audition of music. He summarizes the various hypotheses in vogue to explain the mechanism of hearing and the musical sense, emphasizing the psychologic element, and that the organ of hearing has not yet reached its full evolution.

### Revista de la Asoc. Méd. Argentina, Buenos Aires

July-August, 1922, 35, No. 213-214

- \*Bacteriophagy. C. E. Pico.—p. 293 and p. 297.
- \*Biology of an Argentine Rodent, the Vizcacha. L. Giusti and E. Hug.—p. 300.
- \*Refractometry of the Serum in Pregnancy. Mazza and Iraeta.—p. 313.
- \*Hemoclastic Crisis in the Pregnant. S. Mazza and D. Iraeta.—p. 319.
- \*Action of Epinephrin. J. Guglielmetti.—p. 324. Idem. B. A. Houssay.—p. 329.
- \*Chronic Synovitis. O. Ivanishevich.—p. 333.
- Paget's Disease of the Nipple. A. Buzzi.—p. 339.
- \*Bone Implants in Spondylitis. A. Gutiérrez.—p. 342.
- \*Loose Bodies in Knee. R. Rodríguez Villegas.—p. 356.
- \*Traumatism of Undescended Testicles. A. G. Gallo.—p. 359.
- Fracture of Scapula. N. Tagliavacche.—p. 364.
- \*Fracture of Skull. V. Gutiérrez.—p. 368.
- \*Shifting the Ulnar Nerve. P. Jáuregui.—p. 377.
- Pincers for Dissecting Nerve Fibers. P. Jáuregui.—p. 382.
- Microscopy of Living Eye. E. Amoretti.—p. 385.
- Associated Movements of Eyelid and Jaw. A. Tiscornia.—p. 390.
- The Fight Against Uterine Cancer. C. A. Castaño.—p. 395.
- Model School Building. A. Gelly Cantilo and A. Zwanck.—p. 404.
- Proposed League for School Hygiene. A. Restagnio.—p. 425.
- \*Cystic Spinal Meningitis. R. H. Chiappori and C. Robertson Lavalle.—p. 433.
- Paraplegia from Polyneuritis. J. C. Montanaro.—p. 438.

**History of Bacteriophagy.**—Pico quotes from an article by Emmerich and Low to prove that these authors called attention in 1899 to bacteriologic enzymes as a factor in acquired immunity, and the self-limitation of infectious diseases. Gamaleia also published that year an article on bacteriolysins, and Malfitano in 1900 on autolysis of the anthrax bacillus. These workers thus noted the microbial lysis, but they did not recognize its transmissibility through indefinite passages in vitro which d'Herelle has emphasized. Pico describes experiments which seem to show that the lytic principle is contained in the bacteria themselves.

**Physiologic Research on Rodent.**—Giusti and Hug report considerable research on *Lagostomus trichodactylus*, the viscacha, an Argentine rodent.

**Refractometer Index of the Serum of the Pregnant.**—Mazza and Iraeta tabulate the findings in sixteen primiparas and twenty others.

**The Hemoclastic Crisis in the Pregnant.**—Fully 36 per cent. of the forty-four pregnant women tested after ingestion of 200 gm. of milk, fasting, showed the typical drop in the leukocytes. All were supposedly healthy.

**Action of Epinephrin.**—Guglielmetti concludes from his research on striped muscle that epinephrin acts on the intermediate substance which is found at the point of junction of the muscle and the nerve.

**Epinephrin and Hypertension.**—Houssay refers to the share of epinephrin in the rise in blood pressure on irritation of the splanchnic nerve or bulbar puncture.

**Chronic Synovitis.**—Ivanishevich reports a case of disease of the knee in which the diagnosis wavered between syphilitic synovitis and a joint lesion of nervous origin. No improvement was realized under arsenicals, mercury and iodid, but examination three years later showed an intense tremor. The Wassermann reaction had never been positive and the knee was not painful, notwithstanding the chronic synovitis and hydrarthrosis. The cause is still a mystery, although the presumption is in favor of syphilis in spite of the negative serologic and therapeutic data.

**Rib for Albee Implant in Spine.**—Gutiérrez used a rib, rather than a strip from the tibia, for the Albee operation in the case reported. The gibbus was so pronounced that the implant had to be curved. The rib used had been taken from another woman during an operation on the chest, and had been kept in saline for two weeks. In four other cases he resected and implanted one of the patient's ribs. In one case the compress containing the rib was dropped on the floor, and the operation was delayed while the rib was boiled for twenty minutes.

**Extraction of Loose Bodies in the Knee.**—The operation is immensely facilitated if the loose body is held immovable with a small fine awl driven through the skin into it. Otherwise it slips around, and may require much groping for it.

**Traumatism of Undescended Testicle.**—The trauma in the man of 26 had caused the testicle to enlarge, and the tumor was removed twelve days after the accident. The microscope showed incipient malignant degeneration of sarcomatous type.

**Fracture of Skull.**—There was depression of the bone at the site of the fracture, and it was removed, with the cicatricial dura. The gap left was closed nine months later with a Müller-König osteoplastic operation. The man of 40 seems to have completely recovered except for very rare and slight dizziness.

**Shifting the Ulnar Nerve.**—Jáuregui illustrates his method of shifting the nerve at the elbow to a region where it is less exposed to injury and strain, in treatment of fracture, neuritis, etc.

**Compression of Spinal Cord by Cystic Meningitis.**—Symptoms on the part of the eyes accompanied the symptoms indicating pressure on the cervical spinal cord. The laminectomy released a gush of fluid and the symptoms all subsided at once or gradually. The cyst occupied the space of the fifth to the eighth cervical roots, and certain fibrous bands had to be resected to restore free circulation in the spinal canal. The first symptoms had been pains in the arms and back of the eyes, with impairment of vision. By the end of



the second year, when the operation was performed, there was complete quadriplegia, and the Bernard-Horner and the Brown-Séquard syndromes, with atrophy of the left optic disk, just beginning in the other. The young woman recovered the use of the legs completely after the operation, and seems to be slowly regaining the use of her arms.

### Revista Española de Medicina y Cirugía, Barcelona

July, 1922, 5, No. 49

- \*Syphilitic Asthma. José Calicó.—p. 372.
- Care of the Insane in Different Countries. S. A. Meza and J. Paulis.—p. 374.
- \*The Antecedents of Uterine Cancer. C. Stajano.—p. 377.
- Evolution of French Surgery. Fargue.—p. 383.
- Dietetic Treatment. A. Arteaga Pereira.—p. 390.

**Syphilitic Asthma.**—Calicó recalls that in Leredde's series of cases of asthma of syphilitic origin (1917), the syphilis had been inherited in twenty. Castex since then has published nine cases, and commented on the nocturnal character of the attacks as an almost constant feature of syphilitic manifestations. Calicó urges that the possibility of inherited syphilis should always be borne in mind, even when apparently most improbable. In Sézary's recent case, the asthma developed at the age of 36, and bronchopulmonary sclerosis and enlarged glands nearby and a positive Wassermann reaction gave the clue, which led to the cure of the asthma under mercurial treatment. Calicó reports a further convincing case in a woman of 56 who had had transient attacks of dyspnea since childhood. Her brothers show signs of inherited syphilis, and she gives a weak Wassermann reaction. Under a year of mercurial inunctions and potassium iodid the asthma and tendency to slight cyanosis have materially improved, and she says she never felt so well as now.

**Antecedents of Uterine Cancer.**—Stajano argues that the modifications in endocrine functioning—especially ovarian functioning—which form the menopause, alter conditions in the uterine cervix. This opens the portal to malignant disease at this point. Various other factors—intercurrent syphilis, typhoid, intense emotions, or the like—may modify endocrine functioning, and thus secondarily alter conditions in the cervix even in the young, and the satellite cancer may develop. When it does develop under these conditions, all the catabolic functions are so active that the cancer runs a rapidly fatal course. He has never found any record of cancer of the cervix under 23 and it is very exceptional after 64. The uterine cervix is prematurely aged by inherited or acquired taints, as he shows by his list of thirty-seven cases of this "cervical cancer" in young women. In nearly all it had been preceded by some known predisposing factor, usually syphilis, very severe typhoid, or rapidly recurring pregnancies, aging the women prematurely.

### Deutsche medizinische Wochenschrift, Berlin

Nov. 3, 1922, 48, No. 44

- \*Congenital Diseases and Constitutional Abnormalities. A. Greil.—p. 1471.
- Treatment of Asthma Attack. Schottmüller.—p. 1474.
- To Lengthen Limbs. M. Zondek.—p. 1475.
- Psychic Changes After Wound of Frontal Lobe. R. Veit.—p. 1475.
- \*Old Congenital Luxation of Hip Joint. C. Deutschländer.—p. 1476.
- Sputum Disinfection. F. Simon and G. Wolff.—p. 1478.
- Diagnosis and Treatment of Urinary Hemorrhage. L. Casper.—p. 1480.
- Diagnosis and Treatment of Chronic Diarrhea. L. Kuttner.—p. 1481.
- Technic for Functional Tests of the Ear. Haake.—p. 1483.
- Causes and Prevention of Roentgen-Ray Burns. L. Rothbart.—p. 1485.
- A Cuff for Blood Pressure Measuring Apparatus. J. Treis.—p. 1485.
- Comment on Proposed Tuberculosis Law in Prussia. K. Süpffe.—p. 1486.
- Legal Aspects of Scientific Criticism. F. Leonhard.—p. 1487.

**General Causes of Congenital Diseases and Constitutional Abnormalities.**—Greil reviews the possible causes of congenital abnormalities, including the predisposition to tumors. No other placental animal is exposed to such unfavorable intra-uterine conditions nor to a similar mistreatment during nursing as some human beings. The conception should be limited to the first week of the intermenstrual period. The overabundant resorption of sperma, which occurs only in the human species, is harmful. Too young and too old mothers do not have the best offspring. Pregnancy toxicoses can be the cause of latent congenital anomalies. Exogenous factors (syphilis, tuberculosis, malaria) are also to be considered.

**Treatment of Old Congenital Luxation of Hip Joint.**—Deutschländer declares that operative treatment gives good results even in children 8 to 15 years old. In two thirds of the cases, after the operation, the head of the femur lies in the center of the acetabulum, while in 30 per cent. it remains excentric. Though the function is not perfect in this group, it may be sufficient even for outdoor sports. In cases which are over 15 years old, a complete anatomic cure is very rare as yet.

Nov. 10, 1922, 48, No. 45

- \*Bronchial Asthma. A. Barth.—p. 1503.
- \*The Function of the Spleen. H. Rautmann.—p. 1504.
- Ankylosis of the Spine and Disturbances of Internal Secretion. C. Cohn-Wolpe.—p. 1505.
- Periodic, Constitutional and Pathologic Fluctuations of Capillary Action. W. Hagen.—p. 1507.
- Disinfection of Urethra in Gonorrhea. J. Schereschewsky.—p. 1508.
- Types of Meningococcus. K. Hundeshagen.—p. 1509.
- Bruck's Precipitation Reaction in the Serodiagnosis of Syphilis. J. Zeissler.—p. 1510.
- General Principles for Treatment of Pneumonia. Goldscheider.—p. 1512.
- Examination of the Pregnant. M. Henkel.—p. 1515.
- Treatment of Furuncles. A. Schule.—p. 1517.
- The American Method of Selecting a Donor for Blood Transfusion. J. J. Halbertsma.—p. 1517.
- Case of Fatal Barbitol Poisoning. Bofinger.—p. 1518.
- Diseases of the Upper Air-Passages and Tuberculosis Welfare Centers. Ballin.—p. 1518.
- Health Insurance Societies in Relation to Physicians. S. Alexander.—p. 1519.

**Bronchial Asthma.**—Barth states that asthma is now quite generally recognized as a neurosis. The neurosis is evidenced by attacks of dyspnea occurring under conditions which in the majority of persons would fail to produce like symptoms. The labored breathing is due to the fact that the inspirations of the patient become progressively deeper, while the expirations continue to be incomplete, with the result that the distinctive position of the respiratory apparatus during inspiration is scarcely ever completely abandoned for that of expiration. This pathologic respiratory process is often caused by trivial changes, especially in the upper air-passages. Lung emphysema and bronchial catarrh are not asthma but the results of asthma. Treatment consists, therefore, (1) in enlightening the patient in regard to his condition and influencing him mentally; (2) in educating the patient to breathe regularly, especially as regards expiration, and particularly as soon as the onset of an attack is noted, and (3) in the discovery and local treatment or removal of the precipitating cause for the attack. Although early treatment offers the best prospects for recovery, treatment of old cases is also sometimes successful. Emphysema and bronchial catarrh may require special treatment in addition. Irritants that affect the patient unfavorably should, of course, be strictly avoided.

**The Function of the Spleen.**—Rautmann refers to his researches, in collaboration with Frey, to gain a more accurate knowledge of the erythrocyte-destroying activity of the spleen. In the venous blood from the spleen of dogs they found one million fewer erythrocytes per cubic millimeter than in the arterial blood. They noted that the spleen retained or destroyed greater numbers of erythrocytes that were damaged with respect to their osmotic resistance than it did normal erythrocytes. They increased experimentally the osmotic resistance of the erythrocytes by injection of phenylhydrazin, and found afterward that the number of erythrocytes in the venous blood of the spleen was the same as in the arterial blood, indicating that in this case the spleen was no longer able to hold back or destroy the now more resistant erythrocytes. To test the permeability of the spleen as a filter, nucleated erythrocytes (from birds) were injected directly into the splenic artery. Afterward, in the venous blood of the spleen, only a few nucleated erythrocytes were found. Other experiments carried out with Thoma showed that the leukocyte content of the venous blood of the spleen fluctuates considerably. After the intravenous injection of epinephrin, the total leukocyte count in the venous blood of the spleen was much greater than in the venous blood of the ear; there was also a considerable increase in the erythrocytes. In animals previously treated with typhoid bacilli or sheep erythrocytes, the venous blood of the spleen was found to be, on the second or third day after the injection,



tion, much richer in antibodies than the venous blood of the ear. By intravenous injection of epinephrin, the antibody content was still further increased, whereas, after prolonged ether narcosis, it was considerably less. The fact that in infectious disease the spleen increases in volume and is gorged with blood may doubtless be interpreted as a hyper-functioning of the spleen in the nature of a very intensive formation of antibodies. In further researches Rautmann plans to test the effect of roentgen-ray stimulation of the spleen with a view to increasing the formation of antibodies.

### Medizinische Klinik, Berlin

Nov. 12, 1922, 18, No. 46

- \*Obstetric and Gynecologic Peritonitis. W. Benthin.—p. 1453.
- Early Acute Tonsillitis in Influenza. A. Lukowsky.—p. 1458.
- \*Pseudo-Obesity. F. Kisch.—p. 1460.
- Case of Polyglandular Insufficiency. Petschacher and Hönlinger.—p. 1462.
- \*Conservative Treatment of Large Hemorrhoids. P. Bonheim.—p. 1464.
- \*Action of Hydrotherapy and Heat on Blood. E. Stückgold.—p. 1465.
- Malaria with Eruption Similar to Erythema Nodosum. Günther.—p. 1467.
- Quantitative Wassermann Reaction in Blister and Other Fluids of Body. G. Wagner.—p. 1468.
- The Exudative Diathesis. K. Blühdorn.—p. 1469. Conc'n.
- Recent Urologic Literature. R. Paschkis.—p. 1472.

**Improvements in Treatment of Obstetric and Gynecologic Peritonitis.**—Benthin makes in suspicious cases a puncture of the abdomen. The presence of an exudate containing leukocytes is an indication to operate. It would be foolish to operate with simple inflammation of the adnexa with irritation of the peritoneum, but it is a grave mistake to omit operation in peritonitis. He uses lumbar anesthesia, and tries to make the operation as simple and mild as possible. He does not touch adhesions; leaves the pus where it is; puts one drain in Douglas' pouch, and two drains laterally, which he brings out through the lower end of the abdominal wound. At the end, 200 c.c. of ether are poured into the abdominal cavity. No organs are removed except when they are perforated. The after-treatment is considered very important, and starts with a subcutaneous infusion of 1 liter normal saline, with epinephrin. The first day every two hours injections of camphor, caffeine and digitalis are given. The abdomen is kept warm by an electric light bath. Physostigmin was rarely necessary to stimulate the bowels. On the fourth day the drains are replaced by narrow strips of gauze. Benthin warns explicitly not to treat too actively, and attributes the comparatively good results. (52 per cent. total mortality) to the ether and avoiding of injuries to the abdominal organs.

**Pseudo-Obesity.**—Kisch describes a group of patients who have an enlarged abdomen and are a little overweight, but who present only a slight increase in the fat of the abdominal walls. The diaphragm stands high and this can cause heart troubles resembling angina pectoris and shortness of breath (cardio-intestinal complex of symptoms). The usual treatment for obesity fails in these cases, but they are quickly ameliorated by cathartics, massage of the abdomen and application of heat on the abdomen. Kisch attributes the symptoms to a sympatheticotonic inhibition of the movements of the bowels.

**Conservative Treatment of Large Prolapsed Hemorrhoids.**—Bonheim reports good results in all his three cases with Boas' method of treatment of large hemorrhoids. The patients are kept in bed, get little food, and are given bitter salts and injections of morphin. The prolapsed hemorrhoids are treated three times daily for fifteen minutes (with two interruptions of one minute) with Bier's suction glass. The edema is kept up by hot applications. The patients are cured in ten to fourteen days. Morphin is necessary in the first days to combat the pains.

**Action of Hydrotherapy and Heat on Blood.**—Stückgold finds the amount of fibrinogen increased after baths in the electric light box.

Nov. 19, 1922, 18, No. 47

- \*Immunity Against Smallpox and Vaccinia. H. A. Gins.—p. 1483.
- \*Age Predisposition in Children. A. Peiper.—p. 1486.
- \*Cirrhosis of Liver with Icterus and Splenomegaly. R. Bauer.—p. 1489.
- \*Healing of Wounds After Roentgen Rays. E. Vogt.—p. 1491.
- Clinical Action of Strychnin. E. Baráth.—p. 1492.
- Radium Emanation in Arthritis. T. Vaternahm.—p. 1493.
- \*Itching of Ears in Pyrosis. D. Engel.—p. 1495.

Use of Tellurium for Determination of Death of Tissues. P. Rostock.—p. 1499.

Diseases of Urethra. E. Portner.—p. 1501.

Recent Literature on Diseases of Heart and Arteries. E. Edens.—p. 1503.

**Immunity Against Smallpox and Vaccinia.**—Gins reviews historically the researches on smallpox immunity. He points out that the general immunization from systematic vaccination has changed smallpox from a disease of children into a disease of old people. In the years 1758-1774 the deaths from smallpox in Berlin were: 0.07 per cent. in people over 40 years; 1.25 per cent. from 39 to 12 years old, and 98.7 per cent. under 12 years. In 1916-1917, there were 90.56 per cent. over 40 years, 7.32 per cent. from 39 to 12 years, and only 2.12 per cent. under 12 years old.

**Predisposition of the Age in Children.**—Peiper reviews the relation of the age to different diseases of children.

**Cirrhosis of Liver with Icterus and Splenomegaly.**—Bauer describes a case of an atrophic cirrhosis of liver with icterus and splenomegaly. The patient died after splenectomy from a hemorrhage from an ulcer of the stomach. The spleen did not show any fibrosis, nor deposits of iron.

**Healing of Wounds After Roentgen Rays.**—Vogt finds that previous application of roentgen rays does not endanger the healing of the subsequent laparotomy. There are no objections to irradiate a carcinoma of the uterus before the radical operation is done.

**Itching of Ears in Pyrosis.**—Engel observed that some patients suffering from pyrosis complained about itching in the external meatus at the time of their trouble. The itching was usually in the left ear. He considers it a reflex gastro-auricular phenomenon, due to the vagus.

### Münchener medizinische Wochenschrift, Munich

Oct. 27, 1922, 69, No. 43

- \*Correction of Swelling of Colloids. H. Schade et al.—p. 1497.
- Peculiar Epidemic of Bulbar Paralysis in an Institution. John and Stockebrand.—p. 1500. Conc'n No. 44, p. 1544.
- Psychiatric Observations in Javanese. A. Gans.—p. 1503.
- Leukopenia Following Non-Specific Intracutaneous Injection. E. F. Müller.—p. 1506.
- Late Eunuchoidism and Adiposogenital Dystrophia. W. Hueck.—p. 1507.
- \*Inulin in Diabetes. R. Offenbacher and W. Eliassow.—p. 1508.
- Strangulation Ileus in Movable Colon. W. Porzelt.—p. 1510.
- \*So-Called Nervous Dermatoses. A. Marcus.—p. 1510.
- Technic of Artificial Pneumothorax. W. Neumann.—p. 1511.
- Comment on Selheim's "Torsion of Organs." G. Schaetz.—p. 1512.
- Flexible Gastroscope. M. Sussmann.—p. 1513. Reply. R. Schindler.—p. 1513.
- Did Newton Suffer from Influenza-Encephalitis? E. Ebstein.—p. 1513.
- Diagnosis of Some Diseases of the Teeth. Walkhoff.—p. 1514.

**Experiments on Therapeutic Correction of Swelling of Colloids.**—Tannic acid and formaldehyd counteract to a certain degree the toxic action of very diluted hydrochloric acid on tadpoles. Therapeutic possibilities are discussed.

**Inulin in Diabetes.**—Offenbacher and Eliassow find that inulin seems to be utilized better, by diabetics, than glucose and levulose.

**So-Called Nervous Dermatoses.**—Marcus reports a few cases of "nervous" dermatoses cured after the real cause was discovered and removed. A universal eczema recurring with each menstruation was traced to the artificial leather support used for the menstrual bandage. Another case was due to the habitual addition of a little of a certain antiseptic to the bath water. Other cases were due to the use of a perfume, different toilet creams, even of good makes, petrolatum, salves, etc. He gives a list of nineteen other toilet articles that have induced skin affections. In one case a man's periodic itching and crop of furuncles were finally traced to work in the garden with Japanese primroses.

Nov. 3, 1922, 69, No. 44

- \*Psychic Influence on Secretion in Stomach and Duodenum. O. Langheinrich.—p. 1527.
- Clinical Picture of Deforming Juvenile Osteochondritis of the Hip Joint. G. Riedel.—p. 1529.
- Persistence of "War Lymphocytosis." B. Spiethoff.—p. 1532.
- \*Biologic Diagnosis of Tuberculosis. E. Nehring.—p. 1533.
- Ponndorf's Diagnostic Method in Different Dermatoses. L. Görl and L. Voigt.—p. 1534.
- \*Fractioned Examination of Cerebrospinal Fluid. K. Eskuchen.—p. 1536.
- Specific Staining of Amyloid by Congo Red. H. Bennhold.—p. 1537.



- Rarer Indications for Roentgen Treatment in Gynecology. H. Martius.—p. 1538.  
 Apparatus to Insure Precision in Gynecologic Deep Roentgen Treatment. W. Simon.—p. 1539.  
 Influence of Number of Interrupters on the Superficial and Deep Dose of Roentgen Rays. H. Rahm.—p. 1542.  
 \*Costal and Abdominal Breathing. L. Deppe.—p. 1543.  
 Waterwheel Sound in Heart Disease. J. Wagner.—p. 1543.  
 A Futile Method for Statistics on Heredity. W. Weinberg.—p. 1544.  
 Cough and Its Treatment. A. Bacmeister.—p. 1549.

**Psychic Influence on Secretion in Stomach and Duodenum.**—Langheinrich hypnotized the subject and tested the influence of suggestions of intake of butter of bouillon on the secretion in stomach and duodenum. There were distinct differences, but he warns not to neglect the mechanical and chemical elements involved.

**Biologic Diagnosis of Tuberculosis.**—Nehring finds that the double intercutaneous injection of  $\frac{1}{40}$  mg. and 1 mg. old tuberculin gives much better results than Pirquet's method.

**Fractioned Examination of Cerebrospinal Fluid.**—Eskuchen confirms Weigeldt's investigations, and demands the counting of cells in the first and last drop of the cerebrospinal fluid. The differences are very great, and are chiefly due to the sedimentation of the fluid in the body. The distribution of the bodies causing the Wassermann and colloidal gold reaction is more even.

**Costal and Abdominal Breathing.**—Deppe does not believe that men's breathing is abdominal and women's costal. It seems rather to be individual. The best type is the combined costo-abdominal breathing.

### Wiener klinische Wochenschrift, Vienna

Nov. 2, 1922, 35, No. 44

- Chronic Gastritis. O. Stoerk.—p. 855.  
 \*Stability of Colloids of Plasma. W. Starlinger.—p. 860.  
 Tuberculosis Due to Direct Inoculation and Its Surgical Treatment. G. Stein.—p. 862.  
 Influence on Nervous System of Obstruction of Nose. Stein.—p. 865.  
 Comment on Porges' "Hunger Pains." G. Schiff.—p. 866.  
 Present Status of Tuberculosis. M. Weiss.—p. 866.

**Influence of Light on Stability of Colloids of Human Plasma.**—Starlinger found that the amount of fibrinogen precipitated from a citrated plasma is diminished after addition of eosin or ferrous sulphate and exposure to light (especially short waves). The phenomenon is less pronounced with globulins, and still less with albumins. Starlinger believes, that this stabilization of colloids is due to the partial hydrolysis of the proteins by a transfer of oxygen by means of the catalyzers. This increases the amount of the products which stabilize the colloids.

Nov. 9, 1922, 35, No. 45

- Borderland Between Gynecology and Urology. Richter.—p. 875.  
 \*Pathology of Respiratory Metabolism. P. Liebesny and H. Schwarz.—p. 879.  
 \*Depersonalization Following Meat Poisoning. A. Pilcz.—p. 883.  
 \*Chemical Aspects of Tuberculosis of the Bones. H. Reh.—p. 884.  
 \*Instability of the Colloids in the Blood Plasma. J. v. Darányi.—p. 885.  
 Remarks on Bum's "Treatment of Sciatica." R. Grünbaum.—p. 886.  
 Reply. A. Bum.—p. 886.

**Pathology of Respiratory Metabolism.**—Liebesny and Schwarz confirm the normal basal metabolism in obesity of pituitary origin. Powdered thyroid increased it in these cases. The basal metabolism is increased in diseases of the hemopoietic organs with increased production of cells, as in leukemia, pernicious anemia, hemolytic icterus. It was normal in aplastic anemia.

**Case of Depersonalization Following Meat Poisoning.**—Pilez describes a case presenting all the symptoms of Krishaber's "loss of self-consciousness"—disturbance in the sense of reality—with the typical preservation of the ability to act like a healthy person. This state started during a severe meat poisoning and lasted for seven weeks.

**Tuberculosis of Bones.**—Reh does not like to treat this chronic disease chronically. His method of choice is to operate, except in the rare cases where it is strictly contraindicated by the extension of the operation, possibility of severe infection, the certainty to hurt vital organs, and the general weakness of the patient.

**Lability of Colloids of the Blood Plasma.**—Darányi discusses some reactions of blood, serum and plasma, because

he finds that they were not yet considered from the viewpoint of lability of colloids in one paper. They were explained so only separately. The speed of sedimentation of blood corpuscles, the precipitation of plasma and serum by different means run to some extent parallel, and may be considered as a measure of disintegration of tissues. Darányi considers his own method for testing the instability of the colloids in the serum as most advantageous.

### Zeitschrift für Urologie, Leipzig

1922, 16, No. 11

- \*Endemic Urinary Calculi in Siam. O. Schneider.—p. 473.  
 Bilharzia Eggs in the Sperma. E. Pfister.—p. 488.  
 Plastic Induration of Penis. R. Rothschild.—p. 490.

**Endemic Urolithiasis in Siam.**—Schneider reports from Bangkok his experiences with stones of the bladder. The cause is unknown. The poorer classes are much more subject to the disease than the wealthy; 42 per cent. of the cases were under 15 years old. Anal prolapse leads us to suspect a stone. Lithotripsy could be used only exceptionally. In his last series of seventy cases all were males except five. In four other cases he removed a calculus from the urethra of infants, less than a year old, which had been exclusively breast fed.

### Zentralblatt für Chirurgie, Leipzig

Oct. 7, 1922, 49, No. 40

- \*Extra-Articular Measures to Induce Ankylosis. J. Hass.—p. 1466.  
 \*Tendon Regeneration. E. Wehner.—p. 1467.  
 "Preferable Method for Anesthetization." Hinterstoisser.—p. 1469.  
 Spontaneous False Reduction of Incarcerated Hernias. E. Haim.—p. 1470.  
 \*Strong Sugar Solutions as Preventive of Operative and Anesthesia Mishaps. B. Tenckhoff.—p. 1472.  
 \*Plastic Substitute for Stomach. V. Hoffmann.—p. 1477.  
 Semmelweis not Lister. Reply to C. Bayer's Article in No. 33. F. Bruck.—p. 1479.

**Extra-Articular Measures to Induce Ankylosis of Hip-Joint.**—Hass describes with an illustration a method he has used in three cases of highly destructive and recurring coxitis to induce ankylosis of the hip-joint. A curving incision is made about the great trochanter as in Lexer's method of arthroplasty. The great trochanter is cut off slanting, and, together with the attached muscles, it is pushed along upward until the tip fits into a recess hollowed out to fit it in the ilium, just above the roof of the acetabulum. The trochanter is then sutured with stout silk or silver wire to hold it in this place, suturing it to the femur and to the ilium above. Then a plaster cast is applied for three months in abduction. The operation is thus entirely outside the joint. Especially adapted for this operation are those cases in which the head of the femur is destroyed to such an extent that the great trochanter is brought near to the ilium. The advantages claimed for this procedure over the transplantation of a piece of the tibia are: No necessity of molesting the tibia, good nutrition of the pedunculated transplant, broad and close contact of the raw bone surfaces, and above all, greater solidity of the local osteoplasty. In the three cases the operation was performed more than a year ago, and in two cases a solid bony ankylosis has been secured. In one case the union between the trochanter and the ilium is only fibrous. The joint is held by this operation as if by a big bolt, bolting it into a solid whole.

**Theory of Hormone Action of the Synovia in Tendon Regeneration.**—Wehner refers to Salomon's finding that outside of the tendon sheath the tendon ends are sure to heal, whereas within the sheath they never heal. Salomon's view is that the absence of regeneration in the enclosed tendon is due to inhibiting hormones in the synovial fluid. On the basis of his theory, Salomon had recommended no suturing of the tendon sheaths but rather the removal of a large portion of the tendon sheath. In his experiments on from 1 to 2 year old rabbits and dogs 6 months old, Wehner was able to secure excellent regeneration of the quadriceps tendon (after excision of the patella) without a suture or bridging over of the defect or the use of a fixation bandage. What he emphasizes is the fact that the synovia of the knee joint, which, without doubt came in contact with the tendon defect or the regenerating tendon tissue exerted no action that inhibited regeneration.



**Strong Solutions of Glucose as Preventive of Operative and Anesthesia Mishaps.**—Tenckhoff recounts the favorable results secured by the slow injection of 10 c.c. of a 10 per cent. solution of glucose the evening before an operation. The injection sometimes caused chills. The effect on the post-operative pulse was marked. The frequent acceleration of the pulse was not noted, nor did it become weak and small but remained slow and strong, characterized by high tension, an indication that the glucose has a favorable effect not only on the central organ but also on the peripheral portions of the circulatory system, tending to raise the blood pressure. It was surprising to note that even after the most serious operations the pulse curve remained about the same after the operation as before. It appears that the effect of the glucose persists for two or three days and thus helps the patients over the dangerous period.

**A Plastic Substitute for a Resected Stomach.**—Hoffmann recalls that persons who have undergone total stomach resection are inconvenienced by the fact that they can eat only light meals and therefore have to eat frequently. To improve this condition he proposes an operation which he has performed thus far only on the cadaver and on animals. With a simple technic it provides a receptacle with twice the capacity of the small intestine. The esophagus is joined to the jejunum at a point where a long loop of the small intestine can be secured. Between the afferent and efferent legs of this jejunum loop a long anastomosis is established, which, beginning just below the tip of the loop sutured to the esophagus, throws the two legs into one cavity, the jejunum thus forming a receptacle 15 cm. long. The food passes from the esophagus through a short double-passaged portion of the intestine into the newly created reservoir. Also the secretions of the liver and the pancreas flow into this reservoir. It is advisable to carry out the entero-anastomosis before the esophagus is united with the intestine, since a loop of intestine that is fixed in position is not so accessible. The circumference of the upper small intestine in man is from 4 to 6 cm. By the side-to-side suture of the two legs of the loop of the jejunum we obtain a reservoir with a circumference of from 5 to 9 cm. The time required for the anastomosis is so short that this secondary operation can be easily allowed to follow such an extensive intervention as total or subtotal gastric resection. In some instances it might be better to perform the secondary operation at a second sitting (under local anesthesia). The storage receptacle thus created is, to be sure, a very imperfect substitute for the stomach. However, it affords the patient an opportunity of eating much more at a meal. He gives an illustration of the technic.

### Zentralblatt für Gynäkologie, Leipzig

Sept. 2, 1922, 46, No. 35

Contribution to the Subject of "Narrow Pelvis." W. Zangemeister.—p. 1395.

Pregnancy after Bilateral Sactosalpinx and Abscess of Douglas' Pouch. B. Ottow.—p. 1406.

Perforation of the Uterus and Severe Injury of the Adnexa. W. Stoeckel.—p. 1410.

\*Artificial Glycosuria in Pregnancy. A. W. Bauer.—p. 1413.

Complete Inversion of the Uterus in Childbirth. C. Neis.—p. 1421.

**Artificial Glycosuria in Pregnancy.**—Bauer's researches lead him to state that, although artificial glycosuria induced by the ingestion of glucose does not furnish a differential diagnosis between extra-uterine pregnancy and tumor of the adnexa, its value must be recognized for the early diagnosis of pregnancy. In 200 cases the sugar content of the blood, following the ingestion of 100 gm. of glucose on an empty stomach and during rest in bed, increased, on the average, from 0.08 to 0.2 per cent. The sugar was taken in 200 gm. of tea, drunk rapidly, and blood and urine were drawn for examination every ten minutes for an hour and again thirty minutes later, and thirty minutes after this. Thirty of the women were nonpregnant; 120 were in the first three months of pregnancy, and fifty were in the other months of a pregnancy. All the women pregnant for less than three months showed pronounced glycosuria thereafter, while this was evident only in 66 per cent. of the other pregnant women, and only in one of the thirty nonpregnant women. In 300 other

pregnant women examined, spontaneous glycosuria was found only in 0.75 per cent., and the sugar content of their blood was within normal range.

### Zentralblatt für innere Medizin, Leipzig

Nov. 18, 1922, 43, No. 46

Substitute for Iodin. H. Friedenthal.—p. 745.

Nov. 25, 1922, 43, No. 47

Recent Progress in Neurology and Psychiatry. M. Goldstein.—p. 761.

### Mededeel. v. d. Burg. Geneesk. Dienst, Java

1922, No. 3. English Edition

\*Hookworm in Soil at Batavia. J. A. de Nooy.—p. 125.

\*Working of Slow Filtering Sand Filter in the Tropics. P. C. Flu.—p. 135.

The Aorta in Malay Men. H. Müller.—p. 167.

Differentiating Points of Certain Mosquitoes. E. Rodenwaldt.—p. 185.

**Ankylostoma Larvae in Soil of Native Villages in Java.**—De Nooy found that the mature larvae have a greater power of resisting desiccation than is generally accepted. The infection of the soil plays an important part in the infection and reinfection, but flies aid likewise.

**Slow Working Sand Filter.**—The filter was arranged so that each square meter of filter surface yielded only 2.4 cubic meters of water during the twenty-four hours. The water is treated beforehand with aluminum sulphate. This arrangement supplies good drinking water from the turbid water of the rivers of the Java lowlands, but the filter must be exposed to the sunlight, and the process must be under the daily control of skilled technical men and bacteriologic chemists. Otherwise, other methods are preferable.

### Acta Medica Scandinavica, Stockholm

Nov. 7, 1922, 57, No. 1

Importance of Tissue Cultures in Experimental Medicine. Fischer.—p. 1.

\*Glycosuria of Pregnancy. K. Motzfeldt.—p. 10.

Question of Peristaltic Action in Capillaries. E. Kylin.—p. 25.

Standardization of Hemoglobinometers and Its Importance for Index Calculation. H. C. Gram.—p. 27.

\*Induced Motor Action. H. Gertz.—p. 41.

\*Attempt at a Differentiation of Gonococcus Types. O. Thomsen and Erik Vollmond.—p. 77.

**Glycosuria of Pregnancy and the So-Called Renal Diabetes.**—Motzfeldt warns not to underestimate a seemingly renal diabetes; it may change into the real form. In one case with hypoglycemia, hyperglycemia was found when reexamined one year later. He discusses a case of renal diabetes occurring during pregnancy, and recurring at a later pregnancy. In a man of 27 the renal diabetes was transitory. In the third case there seems to be a connection between the diabetes and a traumatic neurosis. (In English.)

**Induced Motor Action.**—Gertz repeated extensively some observations made by Purkinje, relating to dizziness, and long forgotten. The subject is placed on a disk rotating on its axis, and turns in the opposite direction, so that he does not change in reality his relation to the surroundings. Although the vestibular apparatus is not irritated, yet after stepping down from the disk and taking a few steps, the subject feels himself drawn toward the side toward which he was turning. Since he knows, that he did not have the intention to continue to turn, he may become dizzy. This experiment constitutes a new physiologic source of dizziness, being neither of vestibular nor of visual origin. The phenomenon resembles the experiment of the hand pressed against the wall, described by Salmon and Kohnstamm. Gertz modifies their experiment in an advantageous way. He distinguishes in direct motor innervation two parts: One constitutes the direct impulse to the act; the other consists in arrangements of the nervous conditions which direct or end the motion. The vestibular apparatus and the cerebellum are parts of the second, which Gertz calls the system of predisposition. He believes that the exercise induces a predisposition for its continuation, and that this is responsible for the phenomena described. (In French.)

**Attempt at a Differentiation of Gonococcus Types.**—Thomsen and Vollmond assert that a simple complement fixation test does not allow us to state definite types. Absorption



experiments, however, have made it possible to separate three groups, although some strains remained outside. (In English.)

### Hospitaltidende, Copenhagen

Nov. 8, 1922, 65, No. 45

\*Spastic Ileus. H. Jacobsen.—p. 753.

The Ureter During Hysterectomy for Cancer. N. Tuxen.—p. 759.

What Has Been Learned from the Gullstrand Lamp. C. Rasmussen.—p. 760.

**Spastic Ileus.**—Jacobsen operated twice on the girl of 7 in the course of two days. The first laparotomy had been done on the assumption of invagination but nothing abnormal could be found except that certain segments of the intestine seemed to be contracted. No mechanical obstruction could be discovered. After a day of subsidence of all symptoms, they returned again and the abdomen was opened anew. Nothing could be found except this tendency to local spastic occlusion of the bowel. During the ten months since there has been no return of symptoms and the child seems well. By the double laparotomy the absence of any other cause for the tendency to ileus beyond the spastic contraction seems to be absolutely established. The differential diagnosis can be only by exclusion, although it is well to bear in mind that the spastic occlusion of the bowel is often multiple. The absence of blood in the stools testifies against intussusception with which it is most likely to be confounded. When spastic ileus is certain, morphin, atropin, lavage of the stomach, enemas and laxatives may be indicated. Morphin can be given by the rectum. As a last resort, entero-anastomosis above the spasm may be considered.

### Hygiea, Stockholm

Nov. 15, 1922, 84, No. 21

\*The Diazo Reaction in Relation to Leukocyte Count. N. Svartz.—p. 869.  
Epidemic Encephalitis. Etiology and Epidemiology. C. Kling.—p. 894.  
Cont'd.

**The Diazo Reaction and the Leukocyte Figure.**—Svartz discusses the possible reasons for the low leukocyte count which seems to accompany the diazo reaction. The reaction becomes more pronounced as the number of leukocytes drops, and vice versa, as is shown by the charts from seventeen cases of typhoid, paratyphoid or tuberculosis. The proportional relations are not always absolute, but leukopenia with a pronounced diazo reaction is such a constant finding as to exclude casual coincidence. One and the same factor may be responsible for both. No evidence has been found to date connecting the diazo reaction with any substance liberated by destruction of leukocytes. The German, Russian and Scandinavian literature on the diazo reaction is reviewed, and it is emphasized that a positive reaction does not necessarily indicate an unfavorable outcome, but an acute febrile disease with a positive diazo reaction should suggest typhoid. In forty-four cases of typhoid tested, the reaction was pronounced in the first week in all but two and these were extremely mild cases.

### Ugeskrift for Læger, Copenhagen

Oct. 19, 1922, 84, No. 42

\*The Evidence in Accident Insurance. G. Philipsen.—p. 1389.

\*Pernicious Anemia with Stenosis in Intestine. E. Meulengracht.—p. 1401.

**Workmen's Compensation from Medical Standpoint.**—Philipsen is chief of the Denmark council that has to pass on the demands for state accident and health insurance. He discusses in turn the various forms of disability, saying of traumatic neuroses that the council abides here by the evidence of skilled neurologists. With multiple sclerosis, as no one knows its etiology, if it develops after a well authenticated trauma, which might possibly have brought on the disease, the council accepts this without question and gives full compensation. The same applies to general paresis. When it develops apparently in connection with an absolutely authenticated injury to the head, full compensation is generally allowed. The causal or aggravating effect of a trauma—even emotional trauma—in exophthalmic goiter is accepted usually without question. An infectious disease contracted in the hospital while taking treatment for a fractured limb, for example, is accepted as entitling to compensation, as also pneumonia or pleurisy developing during

the sickbed required by the accident. In one case the man had been sent to the city for an operation on account of an accident, and in the city he succumbed to influenza. The council accepted that the influenza must have been in the incubation stage and that the exposure to the weather had rendered the course so grave. The council is more skeptical in regard to the connection between an accident and the development of diabetes, but occasionally it has been accepted as a consequence of an accident; a case of this kind has just been appealed to the higher court. Gastric ulcer is not accepted as a consequence of accident, even when a severe trauma has preceded its manifestations, but in rare cases the accident has been admitted to have been responsible for the flaring up of the lesion. The greatest difficulty is in cases of insignificant accidents to elderly persons, injury to an ankle or finger. The immobilization may have been too long, and the subject brings a physician's certificate to the effect that he is totally disabled. Sometimes a new examination shows that the character of the case has been misconstrued or else that the physician has been imposed on by simulation or exaggeration.

**Pernicious Anemia with Stenosis in the Intestines.**—Meulengracht adds two more cases to the list of those he has encountered in which stenosis of the small intestine was found with classic pernicious anemia. In the first here described, a stretch of the intestines with several old and new tuberculous strictures was resected; the woman of 64 was too debilitated to recuperate. In the second case the stenosis was evidently due to adhesions. No signs of tuberculosis were found but the roentgen findings indicate stenosis. The irritation of the mucosa of the bowel above the stricture allows resorption of substances which probably entail the blood disease.

Oct. 26, 1922, 84, No. 43

\*Traumatic Injury of Nervous System. V. Christiansen.—p. 1444.  
Rubeola Without Eruption. G. Fløystrup.—p. 1461.

**Tardy Consequences of Trauma of Nerves.**—Christiansen protests against the Danish legislation which refuses to consider a causal connection between accidents and affections which develop more than three years later. He describes a number of instructive cases in which the connection seemed to be beyond question although the interval had been nine, ten, up to twenty-one years. He emphasizes one clinical picture in particular, severe atrophy and sensory disturbances in the ulnar nerve domain with a deforming arthritis in the elbow and a history of dislocation of the elbow ten, twenty years before. The function of the elbow may be only slightly impaired by the bone affection; in one case merely the last five degrees for complete extension were hampered, but roentgenoscopy confirmed the bone lesion. He describes other cases in which a brain cyst developed at the site of a trauma of the head twenty or thirty years before. The interval was sixteen years in one case, and the man succumbed to embolism after the operation on the cyst. Christiansen regards the man's heirs as entitled to compensation as there had been more or less indications of irritation of the cortex during this long interval, as likewise in another case in which a fibrosarcoma was removed from the site of trauma ten years before. This man recovered full earning capacity two years after the operation. Instances of tardy traumatic epilepsy are cited which reproduce the various stages of genuine epilepsy. He describes in addition a case of trauma to the back of the head which was followed at once by unconsciousness and drowsiness. The third day there was total oculomotor paralysis. The somnolency persisted for two or three weeks but the condition was completely normal once more by the end of the month. The young man had been knocked down by a motorcycle, but the attending physician diagnosed epidemic encephalitis from the tendency to somnolency and the ptosis, and the claim for accident indemnity was rejected at first.

### Upsala Läkareförenings Förhandlingar, Upsala

Oct. 28, 1922, 28, No. 1-2

Grave Familial Jaundice in the New-Born. I. Thorling.—p. 1.

A Theory for Color Vision. H. Ohrvall.—p. 77.

Embolectomy. Three Cases. P. Häggström.—p. 107.

Psychology and Biology. H. Sjöbring.—p. 133.



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## DRUGS AND ANIMAL EXPERIMENTATION

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The origin of the belief of mankind in the efficacy of drugs in the treatment of disease is a most interesting subject for speculation. The use of drugs antedates written accounts. Certainly the most primitive people on the earth today employ drugs as curative agents, and the earliest written records tell of the uses of drugs and poisons. We know that at certain periods disease was looked on as evidence of displeasure of the supreme being or beings, and that it was in the nature of a punishment visited upon man.

The view has been expressed that, since many of the materials used as remedies are disagreeable, either in odor, taste, texture or their origin, the taking of the medicine was of the nature of a sacrifice to appease the gods. The fact that not all of the materials used by primitive people are abhorrent is opposed to this view. Again, the belief in the efficacy of drugs may be attributed to the view which seems to have been held that since the supreme being created all things, including man, and sent the diseases to plague him, he must have created a remedy for every disease and left it to the ingenuity of man to discover the remedy. In the writings of the renowned Paracelsus<sup>1</sup> (1493-1541) occurs the statement: "Every disease has its medicine. For it is God's will that He be manifested in marvelous ways to the sick."

On the other hand, the belief in the efficacy of drugs, even in very early times, may have been based on observation and experience. Primitive man must have come in contact very early with strong pharmacologic agents, such as fruit juices, which, on being left exposed to the air, had fermented and yielded alcohol. He must have observed the effects of such materials. Similarly, among the plants, he must have found drugs which produced such remarkable effects that they would not escape the crudest observer. When he found substances which taken internally or placed on the skin produced decided effects on his body, nothing could have been more natural than for him to use such materials in treating injuries and illness in order to effect desirable changes within him. When illness plagued a man, he and his friends searched for a remedy as long as life lasted, and in the course of human history it is probable that almost every accessible material has been used in the treatment of disease.

The observations made on the action of the drugs in disease were crude and faulty, and no one knew what the course of the untreated disease would be, because all patients were given remedies. Yet, by this method, most valuable advances were made in the course of the ages. Thus, opium was in use before the Christian era, mercury was used in the treatment of syphilis in the sixteenth century, and cinchona bark, from which quinin is derived, was employed in the treatment of malaria in the seventeenth century. At the time of the Spanish conquest, the Indians of Peru were using coca leaves to assuage the pangs of thirst and hunger in their long journeys over the Andes. The action of the coca leaves, we now know, is due to the cocain which they contain, which acted partly as a local anesthetic and partly as a stimulant of the central nervous system.

The difficulty with this method was that it took many hundreds of years to advance the healing art with a definite contribution, and even then the value of the remedy in most cases was not actually proved, but was still a matter of opinion. Innumerable examples could be given to illustrate the increased value a drug possesses when its use passes from a haphazard to a scientific basis. We shall return to this subject later in this discussion.

Therapeutic investigation differs from most other types of work in that one cannot both treat an individual and leave him untreated excepting in certain diseases confined to the surface of the body. In other words we cannot divide an individual and treat half of him, and leave the other half untreated in order to determine definitely the effects of a drug under identical conditions. When we use different individuals, it is impossible to have conditions identical because two individuals may not respond in exactly the same way to a given disease or a given remedy, so that in all cases a therapeutic agent must be subjected to examination in a very large number of individuals under the best controlled conditions possible in order to get a final estimate of its therapeutic efficiency. Just as certain individuals may show an idiosyncrasy toward a drug and respond differently from the average of the same species, so there are certain differences in the response of different species to substances. The idiosyncrasy of certain species toward certain substances is well known and recognized. Apart from the remarkable variation in the response to drugs, noted in the case of certain species, there is a remarkable similarity in the response of the whole animal series toward drugs in general.

## EFFECT OF VARIOUS DRUGS ON MAN AND ON ANIMALS

The statement is frequently made in antivivisection publications that man and animals are so dissimilar in

1. Paracelsus: *Die erste Defension*, 1: 253, quoted from Stillmann: *Paracelsus*, Chicago, The Open Court Publishing Company, 1920, p. 123.



their reaction to drugs that no information of service in human medicine is derivable from studies of the action of drugs on animals. Such a statement has never been made or implied by any one having first hand knowledge of the subject. Let us examine the facts for a few of the most important drugs.

*General and Local Anesthetics.*—The most useful and safest general anesthetics for man are also the best and safest for the animals, and are in daily use whenever operations are performed on man or any of the higher animals. Can it be denied that the action of this group of substances on man and dog, for instance, is essentially identical? In the anesthetizing of the two, we employ the same agents and apparatus. Both pass through the same four stages under chloroform or ether, namely: (1) slightly impaired consciousness; (2) stage of excitement; (3) surgical anesthesia, and (4) toxic stage approaching death. The changes occurring in the circulation and respiration in chloroform and ether anesthesia are essentially the same in man and in dog. Similarly, the local anesthetics have the same effects in animals and in man. Thus, cocain placed in the eye of the dog or rabbit takes away the sensibility, and touching the eyeball no longer causes the animal to wink. All of the local anesthetics have been introduced

The dose of strychnin for each kilogram of body weight necessary to kill many animals, including man, is known. The minimal fatal dose for the commoner forms is given in Table 1.

The minimal fatal dose of strychnin for man is arrived at through the many cases of murder, attempted murder, suicide and accident. Thus, not only the symptoms of strychnin poisoning, but also the fatal dose per unit of body weight is similar for man and the animals mentioned. So true is this that, in cases of poisoning, the toxicologist ordinarily tries the effect of the material isolated from the dead body on the frog—an important test in the identification of strychnin. The test is always recognized by the court. It is true that there are other species that are very much more resistant to strychnin than are man and the common test animals. Thus, the dose necessary to kill a snake is 23 mg. per kilogram, and for the bat, 40 mg. per kilogram. The amount of a substance that is required to kill an individual of one species may be much greater than for an individual of another species, and yet the type of action may be the same in the two cases. The fatal dose is only one of a number of important facts to be ascertained.

*Atropin.*—There are several instances in which the susceptibility of a particular species to a drug departs very far from that of the remainder of the animal series, and a case that is frequently referred to is the high degree of tolerance of the rabbit to atropa belladonna and the constituent atropin.

The action of atropin has been studied on certain beetles, amphibia (salamander, triton and others), the frog, guinea-pig, hedgehog, rat, rabbit, chicken, pigeon, dog and cat. Among the mammals, there is little difference in the symptoms produced, but marked differences in the dose required to produce similar effects. Man is the most sensitive creature to this drug; then in order come the carnivora and finally the herbivora. The rodents are particularly resistant to atropin.

Atropin and belladonna are very valuable drugs in human medicine. They are used:

1. To dilate the pupils for ophthalmoscopic examination and to prevent permanent damage in iritis.
2. To lessen vagal inhibition of the heart in certain cases of arrhythmia and to prevent reflex stoppage of the heart and death in certain conditions, such as in early chloroform anesthesia.
3. To reduce the secretory and motor activity of the stomach in gastric and duodenal ulcer, and to distinguish between pyloric occlusion of the stomach by spasm of the pylorus, which does not require operative procedure, and organic obstruction, which requires immediate surgical intervention.
4. To dilate the bronchoconstrictor muscles in asthma and in anaphylaxis and allied conditions, in which it may be life saving.

The first use mentioned did not require animal experimentation. The second use could never have been discovered except by animal experimentation, because without this method we should not have understood the function of the heart or the circulation, and therefore could not properly treat these conditions. The inhibitory action of the vagus nerve could not have been discovered, nor the action of atropin on it. The effect of atropin on the heart rate in the various species varies with the extent of vagal tone. The third and fourth uses of atropin could not have been discovered without animal experimentation. No one who is acquainted with the facts could doubt the immense value of animal

TABLE 1.—MINIMAL FATAL DOSE OF STRYCHNIN		
Animal	Mode of Administration	Minimal Fatal Dose per Kilogram Mg.
Rat .....	Subcutaneously .....	3.0
Frog .....	Subcutaneously .....	2.1
Mouse .....	Subcutaneously .....	1.3
Man .....	By mouth* .....	1.1
Ground squirrel.....	Subcutaneously .....	0.8
Rabbit .....	Subcutaneously .....	0.6
Cat .....	Subcutaneously .....	0.4
Dog .....	Subcutaneously .....	0.4

\* It is probable that the fatal dose of strychnin for man by mouth is very nearly the same as it would be if given subcutaneously.

through animal experimentation. For many types of operation in human surgery, they possess a great advantage over the general anesthetics.

*Soporifics* (sleep-producing drugs).—The sleep-producing drugs for man act entirely similarly in the case of the higher animals. They produce sleep of a depth and duration depending on the dosage. As in man, an excessive dosage of these drugs will produce anesthesia. The soporific action of every member of this group of drugs was discovered by animal experimentation, and then used therapeutically.

*Strychnin.*—This substance acts essentially the same in the animal series from the frog to man. The drug in every case causes increased excitability of the spinal cord, so that ordinary sensory stimuli reaching the cord through the nerves carrying sensation cause convulsions which follow one another at intervals depending on the dose received and the rate of absorption. These convulsions in the frog, rabbit, dog or man can be produced by stimulating sensory nerves, and in the frog they can be largely prevented by cocainizing the skin. Cocain is absorbed through the intact skin of the frog. In treating strychnin poisoning in man, we apply the information gained through animal experimentation, largely with the frog; and although it is not practical to cocainize the entire surface of the body of a man, we keep the patient in a dark room free of all noise and vibrations, and protect him as far as possible from sensory stimulation.



experiments in the elucidation of the proper therapeutic uses of atropin and belladonna in human and veterinary medicine.

*Morphin.*—Let us consider another case frequently referred to in antivivisection literature—namely, that the dog can hardly be killed by morphin. This statement is partly true. The fatal dose of morphin for the dog is about thirty times larger than that for man; yet, the action of morphin on man and dog is strikingly similar on the higher centers of the central nervous system. The fatal dose of a drug does not constitute the entire knowledge of the action of a drug, nor is it the most important factor, as these writers seem to think. In physiologic laboratories, general anesthesia is usually preceded by a liberal dose of morphin to relieve the dog of the stage of anxiety and excitement when going under the anesthetic. Every laboratory man, therefore, has had ample opportunity to observe the action of morphin on the dog. The dog under a 1 grain dose passes into a condition of lazy lethargy remarkably similar to that seen in man.

A striking characteristic of morphin as a pharmacologic agent is the fact that man readily develops the morphin habit, and at the same time develops a tolerance for the drug so that a dose many times as large as the ordinary dose may be taken without producing a greater effect than the original dose. Exactly the same holds for the dog. The nature of morphin habituation and tolerance has been studied in the dog, and Faust<sup>2</sup> found that dogs behave in a manner remarkably similar to man under these conditions. Through this work on dogs, it has been found that morphin tolerance depends largely on the fact that repeated administration of the drug results in the developing by the body of increased power of destroying the drug. It is obvious, therefore, that dog and man react remarkably alike to morphin.

*The Anthelmintics.*—The drugs used against intestinal parasites, although the most logical for the antivivisectionist to attack, have been particularly free from their condemnation. Here we purposely select a drug for the sole purpose of killing or stunning an animal and driving him out of his natural home and habitat into outer coldness and an environment where he must necessarily die from starvation and neglect! Our conduct becomes the more reprehensible when we recall how completely these poor creatures are dependent on man and how attached they become to him, never voluntarily deserting him, no matter how dangerous or disagreeable a position he may occupy. Will the antivivisectionist here also claim that animal experimentation is of no avail? Do studies of the toxicity of anthelmintics on worms mean nothing? These are animal experiments. Owing to the lack of available material for work in this field at all times, Dr. Torald Sollmann has suggested and used earthworms as test objects.

The same anthelmintics are used in the similar infections in man and in the higher animals with equal success. For example, santonin is used in infections with *Ascaris lumbricoides* (roundworm) in both man and pig. In the field of anthelmintics, animal experimentation is essential for two reasons: to determine the toxicity of the drug (a) to the worm and (b) to the host. This yields us the "therapeutic index" of the drug.

*The Digitalis Group.*—In considering the debt of human medicine to animal experimentation in connec-

tion with all the drugs acting on the circulation, we must begin by stating that without animal experimentation we would not know the function of the heart. We would think, as people thought before Harvey's work (1628), that the arteries were filled with air and that the blood ebbed and flowed in the veins. It was through animal experimentation that we obtained correct and detailed knowledge regarding the normal circulation, and of course without such knowledge the efficient treatment of diseases of the heart and blood vessels would be out of the question.

In view of these facts, it seems hardly necessary to discuss in detail the debt of medicine to animal experimentation in connection with the important drugs acting on this system. It may be stated, however, that practically all of our knowledge of the action of all drugs affecting the circulation was obtained first through animal experimentation. It is inconceivable that we could ever have obtained a correct knowledge of the action of digitalis without resorting to this method of study. The life-saving action of digitalis in organic heart disease is one of the most striking instances of the efficacy of drugs in medicine.

*The Nitrites.*—The action of the nitrite series on the circulation was discovered through animal experimentation, and then applied to human medicine. The remarkable relief of an attack of angina pectoris by amyl nitrite, discovered by Sir T. Lauder Brunton, himself an eminent experimenter, will always remain as a brilliant therapeutic achievement. The discovery was based directly on animal experimentation. The same applies to epinephrin, the active principle of the suprarenal gland, used locally to stop hemorrhage, in certain types of shock, and to relieve attacks of asthma.

*The Antiseptics.*—In considering the group of antiseptic drugs, we must bear in mind that the relation of bacteria to disease would have remained unknown except for animal experimentation; and since the antiseptics are used to prevent the growth of bacteria or to kill them, we cannot conceive of the rational development of this type of drug without knowing anything of bacteriology.

A champion of the antivivisection cause, W. R. Hadwen, who has been addressing antivivisection societies in this country, has made a large number of statements regarding the use of antiseptics. There occur such statements in his addresses as the following: "I am positive that before another decade has rolled by, instead of germs being looked upon as our worst enemies, they will be looked upon as the best friends we have." In spite of his professed feelings of friendship for these germs, he objects to their being injected into man, even when their efficacy as vaccines is proved. He refers to them in other places as filth. He speaks most scornfully of the antiseptics in one place when their use was proposed by medical men through animal experimentation, but lauds their empiric use by Semmelweis because he thought that the great contribution of Semmelweis was in no wise connected with animal experimentation. As a matter of fact, Semmelweis did do animal experimentation.

The death rate of women in the Lying-In Clinic in Vienna dropped from 11.4 per cent. in May, 1847, to 1.27 per cent. the year following the practice of disinfecting the hands with chlorinated lime. A breach of technic on the part of a student, with an attendant rise of mortality to 5.25 per cent., demonstrated by human experimentation the efficacy of the antiseptic. On

2. Faust, E. S.: Arch. f. exper. Path. u. Pharmacol. 44: 217, 1900.



account of these terrible experiments on human beings, Semmelweis declined to do further animal experiments, as he regarded the result of this breach of technic as a conclusive demonstration. Certain prominent antivivisectionists writing for their cause seem to approve heartily of this terrible sacrifice of human life in the Vienna Lying-In Clinic to establish a point which could have been proved readily by a few animal experiments.

In other words, when antiseptics are introduced by Semmelweis through human experimentation, the antivivisectionist is in favor of them; but when they are introduced by Lister and Carrel on the basis of Pasteur's work and all those who founded the science of bacteriology through animal experimentation, he scorns their use. The same champion of antivivisection referred to above quotes the statement from Capt. J. Stanley Arthur, that "chlorin gas had solved the problem of a pure water supply on a large scale for the troops, and accounted for the fact that there was no epidemic of typhoid or other water-borne disease which caused such havoc in the South African campaign." He uses this in his tirade against typhoid vaccine. Apparently, the gentleman does not know that chlorin in purifying water acts as an antiseptic, killing the bacteria causing the water-borne disease, and that the amount required and the results are controlled entirely by bacteriologic methods.

#### SIMILAR REACTION OF ANIMALS AND MAN

The statements made in antivivisection literature that the animals react entirely differently from the human being to drugs is further refuted by three outstanding facts:

1. Canary birds are used by miners the world over for the detection of the gas known as carbon monoxid. This substance is a very poisonous gas which combines with the red coloring matter of the blood—hemoglobin—and replaces the oxygen carried by this pigment, forming carbon monoxid hemoglobin. This robs the blood of its most urgent function—the carrying of oxygen from the lungs to the tissues—and results in death when the blood is about 80 per cent. saturated with the gas. This gas is present in many mines, and active ventilation of the mines is required to keep the concentration down below the danger point. All the higher animals have hemoglobin in their blood and react to carbon monoxid in precisely the same way that man does. All animals below the vertebrates, which do not depend on hemoglobin for the transport of oxygen, are totally unaffected by the gas. Birds, because of the large volume of air breathed per unit of body weight, and because of their small size and small blood volume, become affected by carbon monoxid before man, and when the miner observes that his canary bird is lying down instead of perched up as normally, he realizes that the air is not suitable for the support of life and he makes a hasty exit for clear air. If he reaches wholesome air in time, the bird revives—if not, the bird dies. Would the antivivisectionist deny the miner this security which animal experimentation has given him in order to protect the bird against the possibility of death by asphyxiation?

The mouse was formerly used as an indicator for carbon monoxid, but the difference in the attitude of a normal mouse and one suffering distress is not so readily observable as in the case of the bird. This use of animals would be obviously impossible if animals and man responded utterly differently to chem-

icals, whether drugs, which in proper dosage are useful in the restoration of health, or poisons.

2. Before the rise of toxicology, which made the detection of poisoning almost certain, people lived in dread of being poisoned by their enemies. This dread was particularly pronounced among important personages, the royal families, and persons prominent in the affairs of church and state. It was then a common practice to have the cooks or servants first partake of the food, and frequently the food was fed to animals when there was reason for believing that it might contain poison. Instances of the recognition of the similarity in the action of food and poisons on man and on animals are found in ordinary literature.

In "The Swiss Family Robinson" we find, the statement, "As a rule we may consider any kind of vegetable or fruit eaten by birds or monkeys as wholesome"; and, again, the father of the family suggests that the edibility of the figs be tested on the pet monkey before eating them. This book, by a medical layman, which breathes a spirit of kindness to animals, therefore suggests the use of animal tests in determining the action of unknown materials on man, and represents the opinion which would be given by any layman with common sense.

Similarly, the toxicologist of today, when searching for an unknown poison in a dead body, administers a small amount of the supposedly toxic material to a small frog in order to determine the presence or absence of any poison in it.

3. If any final proof were needed that drugs act very similarly on man and the higher animals, it is furnished by the fact that many drugs are standardized by biologic methods—i. e., testing on animals. The active principles of certain important drugs cannot be quantitatively determined by chemical means with the desired accuracy. The most important instances are the drugs of the digitalis series, the drugs acting on the uterus, and antitoxins, vaccines and serums.

The digitalis drugs are used in the later stages of organic heart disease, often prolonging the patient's life and enabling him to return to the ordinary duties and pleasures of life. When this drug is administered, the physician must know that the particular specimen is not inert, that it has the power to do that which is expected of it, and finally what dose of the particular preparation is required. This can be ascertained only by experiments on animals or by its use at the bedside when human life lies in the balance, with the family watching the experiment and the fate of the family at stake.

The action of digitalis on the frog and on the cat is sufficiently like its action on man to enable us to determine its potency as a cardiac drug and to determine its dosage. In the frog, the digitalis bodies act also on the muscle of the heart, increasing the contractions, and by determining the amount required to bring the heart of a 20 gm. frog to systolic standstill in exactly one hour, we learn the potency of the drug for man also.

Ergot and pituitary extract are used to prevent hemorrhage following childbirth. Not infrequently following delivery, the uterus fails to contract and remains flabby and dilated, and severe bleeding results. The two drugs that are most used to bring about contraction of the uterine muscle, thereby constricting the blood vessels and stopping hemorrhage, are ergot and extract of the posterior lobe of the pituitary gland. Here also the active principles cannot be quantitatively



determined chemically, and again we are forced to resort to biologic testing. In this case, the best test object is the uterus of the virginal guinea-pig. The action on the uterus of the guinea-pig is the same as on the human uterus—the drug causes contractions of the uterine wall. Surely, the antivivisectionists would not have us determine the potency of the drug on the young mother, nor would they take the responsibility for the loss to the husband and new-born for the ebbing away of the mother's life because the preparation of the drug was inert. The same conditions obtain in determining the potency of diphtheria antitoxin and other antitoxins. Here, again, in the absence of animal experimentation we should have to determine whether or not the antitoxin was active on the child sick with diphtheria. How many persons would consider such a procedure in the case of their own child?

With this evidence, the reader may decide whether the effects of drugs on animals and man are so utterly dissimilar as to render such studies useless. In the light of these facts, consider for a moment the responsibility which the antivivisectionist assumes toward you and me and all mankind in urging the abolition of animal experimentation.

#### GENERAL CONSIDERATIONS REGARDING DRUGS AND ANIMAL EXPERIMENTATION

In order to give a more general picture of the importance of animal experimentation to the science of pharmacology, a few of the fundamentals of the subject which have been established may be briefly referred to.

Pharmacology is that phase of biologic science which deals with the action of chemicals or mixtures of chemicals on living things. It is therefore a fundamental branch of medical science, and is an important study in every medical curriculum. In its relation to medicine it deals largely with substances that are useful in human therapy. In its relation to veterinary medicine, emphasis is laid on drugs and poisons important from the point of view of that subject.

Pharmacology has largely furnished the basis for the scientific use of drugs in the curing of diseased conditions, the alleviation and prevention of pain, and the prolongation of life. These are the basic problems with which it deals. As a by-product, pharmacologic work often leads to important contributions in the field of normal function; i. e., physiology. Again, pharmacologic work often leads to important advances in pathologic physiology, and thereby elucidates the subject of functional derangements in disease. The subject includes structural changes in the body as a result of chemical agencies, chemical changes in the drug as a result of its passage through the body, and the relation of chemical constitution of drugs to pharmacologic action. The term "pharmacology" is sometimes used in a somewhat narrower sense by restricting it to the alteration of function by chemical means. In the treatment of disease by drugs, we are concerned with the alteration of abnormal function by chemical means.

The cells of our bodies are bathed in a fluid—lymph—derived from the blood and tissues, which insures a free interchange of material between blood and tissues. The body cells of the higher animals live in a fluid medium as truly as do single-celled forms which live in the ocean. All animal experimentation shows that life depends on the maintenance of a certain physical and chemical environment. The administration of any drug that brings about a change in the functional

activity of the cell must do so in consequence of a change in the chemical environment of the cell. In order to understand this change it is necessary to understand the normal chemical environment of the cells of our body. The body of facts concerning the normal chemical environment constitutes the subject of physiologic chemistry.

Changes in the chemical environment of the cells of the body are of two types: (1) negative and (2) positive, the two being equally definite. A negative change in the chemical environment is brought about by a reduction of dosage or entire withdrawal of something that has become a factor in the chemical environment and therefore a substance to which the cell has become accustomed. Thus, a decrease in the supply of oxygen causes striking symptoms or even death. The withholding of food from the animal, the withholding of cocaine, morphine, alcohol, coffee and tobacco from the body habituated to these drugs, or the withholding of the vitamins from the diet are all instances of a negative change in the chemical environment which brings about more or less striking changes in the functional activity of the cells.

A positive change in the chemical environment results every time an active drug is administered. The administration of a definite dose of a drug may produce changes in the functional activity of different intensity according to the mode of administration. The intensity of action of a drug depends on the concentration in which it reaches the particular cells on which it acts, and the duration of time that this concentration is maintained. The concentration which a drug reaches in the body is a function of two factors: (1) the rate of absorption, and (2) the rate of its removal from the body. Drugs are removed from the body by two general methods: (a) excretion, and (b) chemical destruction in the body.

Thus, a drug administered by mouth is usually absorbed more slowly than if administered subcutaneously or intravenously, and in this case the intensity of action is determined by the rate of absorption. If the rate of absorption drops below the rate of removal, the drug has no effect in the body because a sufficient concentration is not obtained. Therefore, it is very important for us to know the rate of absorption of drugs when administered by any of these routes. None of this information applicable to all cases of drug action could have been obtained without animal experimentation. The very rudiments of the subject could not have been elucidated.

Starting about thirty years ago and lasting for a period of ten or fifteen years, there was a general state of mind among physicians that there were few drugs valuable in the treatment of disease. This period of drug nihilism served a most useful purpose because the existing knowledge of the use of drugs, many of which had been handed down through the ages, was unreliable and there was a sort of blind confidence in the efficacy of drugs which resulted of necessity in disappointment when they were critically used. Within the last fifteen or twenty years, there has been great progress made in the treatment of disease. The increase in the amount of animal experimentation has placed the use of drugs on a much firmer basis. Nearly all valuable new drugs have been introduced by the route of animal experimentation, the only noteworthy exception being chaulmoogra oil, the use of which in leprosy was determined in human beings without preliminary



animal experimentation because leprosy is a disease which cannot be given to animals. The latter fact is probably responsible for the great delay in finding adequate treatment for the disease.

Animal experimentation has resulted in increasing the usefulness of old drugs. It has also been extremely useful in discarding drugs that are useless and in clearly defining types of cases in which a given drug is indicated and may be of service. The result of all the work that has been done is that drugs are used today in a much more scientific way than formerly, and drugs are not expected to accomplish what is impos-

TABLE 2.—CURATIVE DRUGS

Drug	Disease
Quinin .....	Malaria
Mercury .....	Syphilis
Arsphenamin .....	Syphilis
Neo-arsphenamin .....	Syphilis
Arsanilic acid .....	Trypanosomiasis
Chaulmoogra oil .....	Leprosy
Emetin .....	Amebic infestation
Oil of chenopodium .....	Hookworm infestation
Thymol .....	Hookworm infestation
Santonin .....	Roundworm ( <i>Ascaris lumbricoides</i> ) infestation
Pelletierin .....	Tapeworm infestation
Thyroid gland (thyroxin) .....	Cretinism, myxedema and milder forms of hypothyroidism
Diphtheria antitoxin .....	Diphtheria

sible. Thus, in degenerative diseases in the course of which specialized tissue has actually disappeared as a result of disease processes and has been replaced with inactive scar tissue, and when such loss of tissue produces symptoms, it is vain to hope to restore the lost tissues by drugs. The use of drugs in such conditions is as futile as would be an attempt to cure a wooden leg or a glass eye, by drugs. The proper use of medicines, therefore, presupposes an accurate knowledge of the pathology of the disease, in regard to structural changes both in the tissues and in their function.

Let us take up a single instance of how animal experimentation has greatly improved the therapeutic use of old drugs. Digitalis was introduced into medicine by Dr. William Withering in 1785 for the treatment of dropsy. Clinicians at various times urged its use in various conditions, a partial list of which would include apoplexy, rapid pulse, inaccessible hemorrhage, tuberculosis, tuberculous hemorrhage, inflammatory fever, malaria, neuralgia, epilepsy, hemiplegia, general paresis, delirium tremens, menorrhagia, uterine atony and typhoid fever.

Digitalis was in general use for seventy-five years before its action was studied by the method of animal experimentation. In spite of all these years of clinical use, the views held by medical men regarding its action were in many important respects entirely erroneous, and its field of therapeutic usefulness was not clearly defined, as the list of conditions in which it was recommended clearly indicates. Thus, in 1860, Clarus<sup>3</sup> stated that digitalis slows and weakens the heart. Animal experimentation with this drug started about this time, and as a result the therapeutic use of digitalis now is strictly limited to the condition in which it can definitely be proved that it is of service—namely, to relieve or prevent decompensation in heart disease and to relieve acute cardiac breakdown. The drug greatly strengthens contractions of the heart muscle. This we know by direct observation, and this knowledge could not have been reached without animal experimentation. In the other conditions its use has been virtually abandoned.

In the same manner, many useless drugs have been eliminated, and the sphere of usefulness of many worth-while drugs has been accurately defined so that positive proof exists of their usefulness, each in its own field.

## PURPOSES OF DRUGS

Drugs are used in medicine for four main purposes: (1) to cure; (2) to relieve; (3) to diagnose, and (4) to prevent disease.

The curative drugs actually remove the cause of the disease. They are sometimes referred to as specific drugs. A list of the best recognized curative drugs is given in Table 2.

The palliative drugs are used to relieve symptoms of disease and often thereby prolong life. The most important of this group of drugs are given in Table 3.

The drugs used to relieve or to prevent pain include the general and local anesthetics, opium, morphin, codein, scopolamin and analgesics of the acetanilid-acetylsalicylic acid groups.

Drugs used to meet special emergencies include ergot and preparations of the pituitary gland, to prevent hemorrhage following childbirth, and iron salts, to cause a rapid regeneration of blood in chlorosis and secondary anemia.

Drugs used for diagnostic purposes include tuberculin, principally in veterinary medicine; phenolsulphonephthalein, in tests for kidney efficiency; atropin sulphate, in cardiac arrhythmias and functional spasm of the pylorus, and several others used less frequently.

Drugs used to prevent disease include the iodids, to prevent the development of goiter; tetanus antitoxin, to prevent lock-jaw; diphtheria antitoxin, to prevent diphtheria, and vaccinations, to prevent smallpox, typhoid fever, etc.

In many instances the use of the palliative drugs saves life by tiding over a crisis and enabling the natural forces tending to restore the normal to become operative.

TABLE 3.—PALLIATIVE DRUGS

Drug	Most Important Uses
Digitalis group .....	Decompensated heart disease
Purgatives .....	Constipation, to rid body of excess of fluid
Camphor .....	Cardiac embarrassment
Epinephrin .....	Shock, hemorrhage, asthma
Nitrites .....	Especially amyl nitrite in angina pectoris
Diuretics .....	To increase secretion of urine
Arsenous oxid. ....	Pernicious anemia
Glucose .....	To prevent acidosis
Soporifics .....	To promote sleep; in certain types of convulsions
Atropin .....	To prevent vagal stoppage of heart; decrease secretions; relax bronchioles; mydriatic
Strychnin .....	To stimulate respiratory center
Bromids .....	Epilepsy
Phenobarbital .....	Epilepsy

The great clinician Sydenham said, "Without opium few would be callous enough to practice therapeutics." It is essential that the physician be able to control pain, since pain is most exhausting. The recent work on shock has emphasized that severe pain itself is inimical to the return of the normal state.

## RÔLE OF ANIMAL EXPERIMENTATION IN THE INTRODUCTION OF A NEW DRUG

The rôle of animal experimentation in the introduction of a new drug into human or veterinary medicine should be presented. In order to have a concrete example before us we shall take a new arsenical drug which some investigator conceives will be a better drug than any known in the treatment of syphilis. Let us begin

3. Clarus: Handbuch der speciellen Arzneimittellehre, 1860.



with Ehrlich's drug arsphenamin, which was introduced about 1910, in the treatment of syphilis.

Ehrlich started out with the information that an organic arsenical compound known as atoxyl is useful in the treatment of diseases caused by trypanosomes, such as trypanosomiasis (South African sleeping sickness). The trypanosomes are biologically closely related to *Spirochaeta pallida*, which is the infectious organism in syphilis. Trypanosomiasis is virtually always fatal if untreated. Atoxyl possesses certain disadvantages, however, in that in certain cases it causes impairment of vision or even blindness. Ehrlich found that atoxyl has no action on the organisms in question when they are exposed to the drug in the test tube. In the infected animals (rats, mice and fowl), the drug has a definite destructive action on the parasites.

Ehrlich and his colleagues then began to make a series of chemical derivatives of atoxyl, producing in all nearly a thousand substances. The six hundred and sixth substance, known as arsphenamin, had outstanding value in the treatment of animals experimentally infected with syphilis (rabbit), trypanosomiasis (rat and mouse) and spirillosis (fowl). The next point which had to be elucidated by Ehrlich and his co-workers was the so-called therapeutic index; namely, the ratio of the curative dose to the maximal tolerated dose. For a drug to be useful in medicine there must be a sufficient margin of safety between the dosage which will be beneficial and that which will do harm. This ratio again must be worked out on animals. Following this part of the study, the toxic dose of the drug is determined in a series of animals—rabbit, guinea-pig, white rat and white mouse. The data thus obtained enable one to arrive at the surely safe dose which may be used in the first studies in human therapy. The pathologic changes in the tissues produced by toxic but nonfatal doses of the drug in animals must next be studied in order to determine the point of attack of the drug in the body so that in the first cases of therapeutic use in which it is studied we shall know exactly what type of symptoms to look for if the drug exercises any toxic effects. Some drugs in toxic doses manifest their first effects on the circulation, others on the nervous system, the skin, digestive organs, or the kidneys, etc.

In this manner we may focus our attention in the early therapeutic study in man on the organs likely to be attacked, and by appropriate tests detect the very earliest sign of any deleterious effect. In this way a drug may be excluded in human medicine if it is too dangerous—that is, if there is not a sufficient margin of safety between the therapeutic and toxic dosages without injuring a single individual. Without the preliminary animal experimentation it would be impossible to know where a drug would act or what drugs were worthy of study in human or veterinary medicine. No man who had the proper feeling toward his fellows could be induced to make such a study at the present time without the information to be obtained by animal experimentation.

The statement is frequently made in antivivisection literature that "the last experiment must always be on man." The foreknowledge gained from animal experimentation is of as much value as are the laboratory tests made to determine the strength of new materials used in the construction of a bridge. The final experiment is made when the bridge is built and in use; the preliminary tests must be made in the laboratory to

learn the strength of the materials and whether there is any probability of success. No engineer would think of using untested new materials. Surely those opposed to animal experimentation would hesitate to recommend that tests of new drugs be made on the human being without previous trials on the lower animals.

With all of this preliminary information, animal experiments would still have to be done to determine the chronicity of the lesions produced by a toxic dose of the new arsenical drug in order to know what period of time should elapse before repeating a dose for therapeutic effects. It is essential that the repetition of doses be spaced so that there will be no accumulation of toxic effects. Finally, after a drug has been successfully introduced, it is necessary in the case of arsenicals to control each batch of the manufactured product to make sure that every step in the process is properly controlled. Therefore, the toxicity must be tested on animals, or human life would occasionally be sacrificed.

It is variously estimated that from 5 to 10 per cent. of the population have syphilis. This disease menaces the next generation, and it is of inestimable importance to control its ravages. There is no field of medicine in which animal experimentation is more important for progress or in which the results have conferred greater benefits on man. The future in this line of endeavor holds even greater promise that this scourge will be conquered.

It should always be borne in mind that some of the greatest discoveries in therapeutics are the outcome of pure research undertaken with the thought of increasing the bounds of biologic knowledge but without the thought of immediate application; but this is not always the case.

Sir T. Lauder Brunton,<sup>4</sup> an eminent physician and an ardent animal experimenter, wrote, in 1867: "Few things are more distressing to a physician than to stand beside a suffering patient who is anxiously looking to him for that relief from pain which he feels himself utterly unable to afford. His sympathy for the sufferer, and the regret he feels for the impotence of his art, engrave the picture indelibly on his mind, and serve as a constant and urgent stimulus in his search after the causes of the pain, and the means by which it may be alleviated." Brunton had in mind the patient suffering from angina pectoris, an agonizingly painful disease of the heart, and he introduced the use of amyl nitrite, which often affords magical relief. The introduction of this drug by Brunton was the direct result of animal experimentation. Similarly, the observation of human suffering at the bedside and the depth of sympathy felt by the physician is often the direct stimulus for investigation involving animals. The physician's sympathy in these cases does not take the idle form of such phrases as, "Too bad; I am sorry, but we must save the guinea-pigs." He leaves the bedside with the determination to be able to control the next such situation which arises, and to bestow the blessings of relief for which his profession stands. He knows full well that to accomplish his purposes means energy, hard work, ingenuity, ability to stand up under disappointments, financial loss and self sacrifice. All these obstacles he is ready to face; they are inevitable, and he knows it. But there is a form of obstruction which he ought not to have to encounter. It is the opposition of persons who are either fanatical or misinformed on the subject of animal experimentation.

4. Brunton, T. L.: Lancet, July 27, 1867.



Among the former one often sees individuals with an excess of money and leisure and no legitimate outlet for their energies, who either have no conception of the mass suffering of the race, or are totally callous to it, who seek to interfere with his noble purpose and to revile him, his methods, and his purposes, to the uninformed public through falsehood and calumny. Attempts to convince such persons of the legitimacy and propriety of animal experimentation have been and probably always will be fruitless; but, as already intimated, there are other individuals who have taken this matter up largely because of the misrepresentations perpetrated by their fanatical colleagues. It is to this misinformed class and to the uninformed public that the experimenter must appeal, and in so doing he feels that their intelligence and rational philanthropy will be ready to meet him half way and result in a complete understanding.

Forget for a moment that the methods of animal experimentation have given us practically all of our knowledge of physiology and hygiene, the science of bacteriology, aseptic surgery and local anesthesia, and have greatly contributed to the knowledge and safety of general anesthesia, and the proper use of most of our drugs. In brief, let us suppose that the methods of animal experimentation had not added immensely to our knowledge of human and veterinary medicine and practically rid the world of Asiatic cholera, yellow fever, bubonic plague and many terrible epidemic diseases affecting animals. On this supposition, let us imagine that a physician sees a patient suffering with general paresis resulting from an accidental and innocent infection with syphilis years previously. He knows that the mental impairment if untreated will be permanent, that the family will lose a valuable member and will be stigmatized by having a member die in a hospital for the insane, and that the marriageability of sons and daughters will be interfered with. Suppose this physician begins an investigation involving animals in the determination to find a way of treating or preventing the development of this disease, believing that animal experimentation had never up to that time accomplished anything. Should he be helped or hindered in his work? Let those who suffer answer; or, if they cannot, let those who see them and render all aid within their knowledge answer for them. But do not allow the answer to be given by those who are ignorant and refuse to be informed, and who lead such happy lives that they never come in contact with anything more pitiable than a dumb animal. Their opponents see poignant human suffering all the day and every day. The ideal and logical solution would be to let each group turn its attention to the relief of the type of suffering that it sees. The medical experimenter is unalterably opposed to wanton cruelty wherever found, and will lend moral and financial support to any movement directed against it. The only conflict that exists is that those in favor of animal experimentation demand that the lives of a few animals may be sacrificed in the most humane manner possible for the benefit of the human race and the remainder of the animal world. The proposition may be briefly stated in this way: Every new drug must have its first trial. Shall this first trial be on man or on animals? Each must answer this question for himself; but the answer must be made with the full knowledge that drugs act very similarly on man and on animals.

## INTRACUTANEOUS REACTIONS IN PERTUSSIS

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During the last four years, several epidemics of pertussis have occurred in a large institution for the care of children harboring about 400, ranging in age from 1 day to 6 years. The opportunity was thus afforded us to study the disease with special reference to (a) natural immunity, (b) acquired immunity, and (c) the diagnosis of the disease in its earliest stages, and before the onset of the characteristic spasmodic cough, whoop and vomiting.

Children exposed in previous epidemics and not acquiring the disease were considered as possessing a natural immunity. Other children giving a history of having had the disease before admission, or having had an attack of pertussis while in the institution, were grouped as those possessing an acquired immunity.

To possess a method whereby it would be possible to designate a child as having a natural or acquired immunity, and to be able to diagnose pertussis in its earliest stages would be an invaluable addition to our control of the disease: its epidemiology and therapeutics.

In our study we employed various preparations of the Bordet-Gengou bacillus, injected intracutaneously. The specific reaction obtained by Schick<sup>1</sup> with diphtheria toxin was taken as our standard of comparison.

The injections were made into the upper part of the flexor surface of the forearm. Two minims was injected intracutaneously. Separate needles and syringes were used for the control and the solutions. The controls consisted of physiologic sodium chlorid solution, this solution plus preservatives, or broth and

TABLE 1.—REACTIONS TO PERTUSSIS VACCINE, EIGHT BILLION TO EACH CUBIC CENTIMETER, IN EPIDEMIC OF 1918

Number of children injected.....	164		Control
Number of children injected, with natural immunity and exposed at time of injection (no history of pertussis).....	77	{ Pos. 42 Neg. 35	{ Pos. 0 Neg. 77
Number of children injected, with acquired immunity and exposed at time of injection (history of pertussis).....	35	{ Pos. 23 Neg. 12	{ Pos. 0 Neg. 35
Number of children injected, ill with pertussis at time of injection.....	52	{ Pos. 52 Neg. 0	{ Pos. 0 Neg. 52
Number of children originally negative, later positive with onset of the disease.....	26		
Number of children originally positive, later increased positive with onset of the disease.....	10		

ascitic fluid, as used in the various test solutions. No reaction was read before forty-eight hours had elapsed, thus eliminating the element of error (pseudo-reactions). All reactions were considered positive that were found to be present at forty-eight hours and persisting for seventy-two, and in most cases ninety-six hours. The size of the reactions varied from 5 mm. to more than 1 cm. in diameter. Induration was usually present, and many of the reactions were sharply defined. They were red, and the color persisted for about four days, gradually fading. Peeling often closed the reaction. No constitutional disturbances accompanied the injections.

In the epidemic occurring in 1918, we used pertussis vaccine. The strength of the injected material was 8 billion to each cubic centimeter.

1. Schick: München. med. Wchnschr. 9: 2608-2610, 1913.



A close scrutiny of Table 1 will disclose that the contradictory reactions rule out the specificity of the injected material. Although all children ill with pertussis gave a positive reaction, twenty-six of them had shown a negative reaction at a previous injection. All retest cases became positive at the second injection (sensitization?)

In the epidemic occurring in the following year, a weaker solution was employed. It was thought that the large number of positive reactions obtained with the stronger vaccines might be interpreted as protein reactions.

In a study of Tables 2 and 3 it will be seen that the number of negative reactions increased as the strength (in protein) of the test solutions became less.

TABLE 2.—REACTIONS TO PERTUSSIS VACCINE, TWO BILLION TO EACH CUBIC CENTIMETER, IN EPIDEMIC OF 1919

Number of children injected.....	61		Control
Number of children injected, with natural immunity, and exposed at time of injection (no history of pertussis).....	23	{ Pos. 19 Neg. 4	Pos. 0 Neg. 23
Number of children injected, ill with pertussis at time of injection.....	38	{ Pos. 30 Neg. 8	Pos. 0 Neg. 38
No retest injections made in this group.			

TABLE 3.—REACTIONS TO PERTUSSIS VACCINE, FOUR, EIGHT, SIXTEEN AND THIRTY-TWO MILLION, IN EPIDEMIC OF 1919

Number of children injected.....	20		Control
Number of children injected, with natural immunity .....	6	{ Pos. 0 Neg. 6	Pos. 0 Neg. 6
Number of children injected, ill with pertussis at time of injection.....	14	{ Pos. 0 Neg. 14	Pos. 0 Neg. 14
No retest injections made in this group.			

In the Schick test we have important factors entirely wanting in the materials used in Tables 1, 2 and 3. Schick, working with a toxin liberated by the diphtheria bacillus, was able to use a substance whose dosage could be accurately gaged. There is no proof at hand that the Bordet-Gengou bacillus liberates an exotoxin, although it is true that living Bordet-Gengou bacilli injected intraperitoneally into guinea-pigs have proved fatal, when grown under certain cultural conditions.

Our problem then confined itself to obtaining a substance produced by the Bordet-Gengou bacillus under the same conditions as those existing in the preparation of diphtheria toxin. Through the courtesy of Dr. Olga Povitzky of the New York board of health, so-called pertussis "toxin" was prepared. Bordet-Gengou bacilli were grown in broth with ascitic fluid, and the filtrate

TABLE 4.—REACTIONS TO PERTUSSIS "TOXIN"

Number of children injected.....	27		Control
Number of children injected, with natural immunity and exposed at time of injection (no history of pertussis).....	8	{ Pos. 5 Neg. 3	Pos. 2 Neg. 6
Number of children injected, with acquired immunity and exposed at time of injection (history of pertussis).....	9	{ Pos. 5 Neg. 4	Pos. 1 Neg. 8
Number of children injected, ill with pertussis at time of injection.....	10	{ Pos. 8 Neg. 2	Pos. 3 Neg. 7
No retests were made in this group.			

was used. Large quantities of this filtrate injected into mice did not prove fatal.

Antigen extracts as described by Povitzky<sup>2</sup> were used in the epidemic occurring this year. This sub-

stance was prepared by scraping a forty-eight-hour growth of *Bacillus pertussis* on coagulated horse blood-veal-agar medium into distilled water, shaken for two successive days, brought up in the water bath to 56 C.,

TABLE 5.—REACTIONS TO PERTUSSIS ANTIGEN

Number of children injected.....	104		Control
Number of children injected, with natural immunity and exposed at time of injection.	43	{ Pos. 10 Neg. 33	Pos. 0 Neg. 43
Number of children having pertussis at time of injection.....	61	{ Pos. 34 Neg. 27	Pos. 0 Neg. 61
No retests were made in this group.			

and left in the incubator at the same temperature over night; the next day the emulsion was centrifuged and the supernatant fluid rendered isotonic by adding 9 per cent. of salt.

The reactions in Table 5 most resembled in size, shape and color the positive Schick reaction. A greater number of positive reactions were obtained during the early stages of disease. Further studies will be carried out with various concentrations of pertussis antigen.

Orgel,<sup>3</sup> following the work done by Modigliani and de Villa,<sup>4</sup> obtained a seeming specificity of reaction by the intracutaneous injection of *Bacillus pertussis* vaccine containing 2 billion bacilli to each cubic centi-

TABLE 6.—REACTIONS TO PERTUSSIS VACCINE (AUTOLYZED), TWO BILLION TO EACH CUBIC CENTIMETER

Number of children injected, ill with pertussis.....	26	{ Pos. 20 Neg. 6
Number of children injected, having an acquired immunity .....	6	{ Pos. 6 Neg. 0
Number of children injected, with natural immunity, exposed at time of injection.....	21	{ Pos. 18 Neg. 3
Healthy children not exposed at time of injection.....	7	{ Pos. 7 Neg. 0
Saline control in all cases.....		{ Pos. 6 Neg. 54

TABLE 7.—REACTIONS TO STAPHYLOCOCCUS VACCINE (AUTOLYZED), TWO BILLION TO EACH CUBIC CENTIMETER

Number of children injected, ill with pertussis.....	24	{ Pos. 20 Neg. 4
Number of children injected, with acquired immunity..	5	{ Pos. 5 Neg. 0
Number of children injected, with natural immunity....	3	{ Pos. 3 Neg. 0
Healthy children injected and not exposed to the disease	7	{ Pos. 7 Neg. 0

meter. Modigliani and de Villa used a solution of *Bacillus pertussis* in distilled sterile water (one platinum loop to each cubic centimeter of water) incubated at 37 C. for forty-eight hours. As a control, autolyzed *Bacillus coli* was used. In fifty-eight immune children there were no positive reactions with either the test solution or the control. In thirty-eight children ill with pertussis, all reacted positively; controls were negative. They describe the positive reaction as a papule which usually disappears in twenty-four hours. The intensity of the reaction was greatest in the early stages of the disease. Our reactions, as shown in Tables 6 and 7, do not confirm their results.

Sixty cases tested with pertussis vaccine gave fifty-three positive and seven negative reactions. Thirty-

2. Povitzky, Olga R.: Agglutination in Pertussis, Arch. Int. Med. 17: 279-292 (Feb.) 1916.

3. Orgel, S. Z.: A Method for the Early Diagnosis of Pertussis, J. A. M. A. 79: 1508-1509 (Oct. 28) 1922.

4. Modigliani, E., and De Villa, S.: The Intracutaneous Reaction for the Early Diagnosis of Pertussis, Pediatrics 29: 337 (April 15) 1921.



nine cases tested with staphylococcus vaccine gave thirty-five positive and four negative reactions.

Of the twenty-six cases of active pertussis tested with pertussis vaccine (Table 6), fourteen reacted positively in three hours, nineteen in twenty-four and seven in forty-eight hours. Twenty-four cases of active pertussis tested with staphylococcus vaccine (Table 7) gave thirteen positive reactions in three hours, twenty in twenty-four hours, and fifteen in forty-eight hours. No reaction was considered positive unless at least 5 mm. in diameter.

#### CONCLUSIONS

No specific reactions were obtained by the use of various preparations of Bordet-Gengou bacilli injected intracutaneously to prove the presence of the disease, or a natural or an acquired immunity. Positive and negative results alike were obtained in children having the disease, in children with an immunity, and in children developing the disease after the injection.

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### ANAPHYLACTIC KERATITIS

#### REPORT OF A CASE

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The injection of a foreign protein into an animal produces severe, perhaps fatal, intoxication in many instances. With some proteins this natural toxicity is very marked: fresh bovine and human serum are quite toxic to guinea-pigs. It has been asserted that by injecting a pig with the dissolved lens of one eye, it will become sensitized, so that it will react to a subsequent injection of the lens from the other eye.<sup>1</sup> The symptomatology of the intoxication which follows injection of the protein into an animal sensitized with the same protein is such as to indicate that a poison is responsible, although as yet it has not been isolated. The syndrome is practically the same, no matter what sort of protein is being used; hence it would seem that the poison must always be the same or similar, no matter how varied the nature of the protein capable of inciting anaphylactic intoxication. Presumably this reaction is merely an exaggeration of the normal process of the defense of the body against foreign proteins. The anaphylactic state appears to influence virtually every part of the body.

Experimental work on ocular anaphylaxis is not frequently found in the literature, yet Kodama<sup>2</sup> has done some work along this line with the reaction of guinea-pigs to horse serum, with more or less definite conclusions. In a search through the literature for the last five years, I have been unable to find the report of a case of anaphylactic keratitis; in fact, one would surmise that ocular anaphylaxis is rare. It is undoubtedly true that nearly all, if not all, persons are sensitized at one time or another of his or her life, and under the present trend of medicine, when vaccines, serums and protein injections are daily made use of, it is surprising that more cases of anaphylactic intoxication do not develop. The case here reported may show to some degree in what the promiscuous injection of foreign protein may develop.

#### REPORT OF CASE

J. N., a man, aged 23, complained of severe pain and loss of vision in the right eye, which had been present for twenty-four hours. He stated that two days before he had gone to the Blood Cell Serum Laboratory in response to an advertisement, in order that he might have his blood made thinner. Without further questioning a small quantity of blood had been withdrawn from his arm, and eighteen hours later, the serum having been prepared, he was given an intravenous injection.

Twenty minutes later he suffered a typical anaphylactic reaction: chills, fever and collapse, followed by prostration. Two days later the right eye became sore. The patient was a well nourished American with negative history except for the diseases of childhood. The physical findings were negative; the leukocyte count was 8,200; there was no anemia; the Wassermann reaction was negative. The nose, throat and teeth were in good condition.

The vision of the left eye was 20/20; the eyeball was normal. The vision of the right eye was 10/200. There was a subacute staphylococcal conjunctivitis with a slight amount of discharge. The cornea presented an acute deep keratitis with a secondary iritis. This keratitis was diffuse, involving nearly the whole cornea, so that only a faint red reflex was obtainable. In conjunction with the ocular condition, there was a localized eczematous patch on the upper lip. Under hot fomentations, atropin, ethylmorphin hydrochlorid (dionin) and catharsis, the eyeball gradually cleared, until on the twentieth day the acute process had subsided, leaving a punctate leukoma, and the vision rising to 20/50 minus 2. At the same time the patch on the upper lip disappeared.

#### COMMENT

The onset, symptoms and clinical course stamp the case as one of anaphylactic manifestation. It is true that we do not know what liquid was injected; but, assuming that it was serum drawn from the patient, the statement of Wells<sup>3</sup> that even the clotting of blood or plasma may produce changes that render it highly toxic for the animal from which it came, with the same anaphylaxis-like manifestations that are produced by the toxic serums in the typical anaphylatoxin experiment, the patient's own serum could have caused this reaction. Wolff-Eisner has advanced the hypothesis that drug reactions may be produced by the blood or tissue proteins altered by the chemical, so that they are as foreign protein to the injected animal; this would substantiate the assumption further.

Böttner<sup>4</sup> says that, on the whole, however, man does not seem to be highly susceptible to anaphylaxis, at least as compared with the guinea-pig, especially in view of the fact that collargol, containing 25 per cent. protein, has had widespread use in intravenous injections at intervals suitable to produce sensitization and shock, without recorded serious results. This statement would explain the few cases from sources such as mine.

Conceivably sensitized persons at times have free antigen in their blood, especially in a case of food sensitization, and if this is so, injury to any tissue or organ might possibly determine local anaphylactic reaction in these places. It is entirely possible, then, that the manifestation on the upper lip of this patient might have been of this nature.

The intravenous injection of foreign serums or proteins in the human being is not unfraught with elements of danger, and happily, though its promiscuous use is not widespread. It is entirely possible, however, that the intravenous injection of protein or chemical substance even in the hands of the skilled practitioner, may result in some unlooked for complication, especially in view of the fact that once protein is in the blood stream,

1. Wells, H. G.: Chemical Pathology, Philadelphia, W. B. Saunders Company.

2. Kodama, R.: J. Infect. Dis. 28: 48 (Jan.) 1921.

3. Wells, H. G.: Physiol. Rev. 1: 44 (Jan.) 1921.

4. Böttner, A.: Deutsch. Arch. f. klin. Med. 125: 1, 1918.



we lose all control over it, as apparently there is no means at present of knowing whether or not the patient is sensitized. The condition of antianaphylaxis, i. e., the presence of free antibodies in the circulating blood, preventing the antigen from coming in contact with the intracellular antibodies, may be a partial explanation of the lack of reaction in many cases.

#### CONCLUSIONS

1. Anaphylactic keratitis is a rare manifestation.
  2. Intravenous injections of proteins or chemicals may possibly be followed by anaphylactic complications even in the hands of skilled clinicians.
- 25 East Washington Street.

### PROBLEMS CONCERNING INFECTIONS OF CERVIX, BODY OF UTERUS, AND FALLOPIAN TUBES\*

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A dozen years ago, dilation and curettage was probably the most frequently performed gynecologic operation. This held true for the most prominent clinics as well as for less well known operating rooms. Not only was this a usual operation, but the reason assigned for scraping the uterus was most often a chronic infection, variously designated as chronic metritis, endometritis or leukorrhea.

Observance of the futility of this procedure, particularly its limited value in attempts to relieve discharges, stimulated in me a desire to learn something about chronic leukorrhea and chronic infections of the uterus. These efforts, in turn, eventually led to a study of diseased fallopian tubes.

#### THE PROBLEM OF CHRONIC ENDOMETRITIS

Four years ago a combined bacteriologic and histologic study was completed of 118 uteri removed to remedy various pathologic conditions.<sup>1</sup> The greater part of the endometrium of these uteri was excised in its entire thickness down to the muscle layer, placed in sterile containers, and thoroughly ground and cultured; the remainder was used for microscopic examination.

This bacteriologic and histologic study revealed that the body of the uterus, above the level of the internal os, rarely yields evidence of chronic infection. It appeared that infection of the uterus commonly called "chronic endometritis" is practically to be ruled out as an independent clinical entity.

Since that work was reported, there has been gradual acceptance of the view that chronic infection of the body of the uterus is unusual; and with the growth of that belief, we have developed greater conservatism in the use of the curet in attempts to relieve chronic endometrial infection.

#### THE SOURCES AND TREATMENT OF CHRONIC LEUKORRHEA

A subject that has absorbed much of my time and attention is the problem of leukorrheal discharges;<sup>2</sup> the

sources from which they arise, the nature and virulence of the bacteria present, and adequate measures for promotion of recovery have all been greatly in need of study.

Examination of discharges from large numbers of patients reveals that the normal vaginal secretion contains few bacteria aside from so-called "Döderlein" bacilli, which are innocent, large, gram-positive organisms closely related to lactic acid bacilli. Profuse, purulent leukorrheal discharges, on the contrary, contain a greatly varied flora, chiefly gram-negative anaerobic bacilli, most of which are mildly pathogenic for experimental animals. The most important leukorrheal organisms, from the standpoint of stubbornness of infection, as well as danger of serious pathologic processes, are gram-positive diplococci which grow into chains in cultures. These streptococci may be either aerobic or anaerobic, but the latter appear to be more virulent; they are the most frequent organisms present in puerperal infections with thrombophlebitis.

It has been possible to find two chief sources from which chronic discharges arise: (1) small glands about the meatus of the urethra, chiefly Skene's ducts and the urethral glands, and (2) the cervix of the uterus.

The cervix, as we all know, is lined with mucus-secreting glands, whereas there is practically no secretion from the body of the uterus. In patients with leukorrhea of cervical origin there is an overgrowth of infected hypersecreting mucus glands. Discharges persist not only because of the presence of these glands but also because there are associated granulations and varying degrees of obstruction of the cervical canal.

A small percentage of chronic leukorrhea cases are due to diffuse pelvic infection, to congested displaced organs and to other kindred lesions, but the overwhelming majority belong to the infected cervix-Skene's duct group.

During the last four years we have treated the most severe and persistent cases of chronic leukorrhea as follows: The vicinity of the urethra is searched for infected Skene's ducts and urethral glands. Diseased foci are threaded on the blunt end of a needle, the tract is laid open with a knife, and the lining is fulgurated or otherwise cauterized. The cervix is thoroughly dilated, and radium is introduced into the cervical canal for the purpose of producing atrophy of the infected hyperplastic glands. Recovery has resulted in ninety out of 104 patients treated according to this plan.

Whether the endocervix is treated with radium or thoroughly excised according to the method of Sturm-dorf is perhaps immaterial. We must remember, however, that the glands in the region of the urethra also demand examination and appropriate attention.

#### INFECTIONS OF THE FALLOPIAN TUBES

An investigation of diseased fallopian tubes<sup>3</sup> was made in a series of 300 cases. Bacteriologic study was accomplished by thoroughly grinding and cultivating the entire diseased tube, with the exception of certain portions reserved for histologic examination.

From the clinical history, examination of the external genitalia, and evidence obtained at operation, together with laboratory study of the tubes, it was possible to determine that gonococcal infection was responsible for the pathologic changes in more than 70 per cent. Approximately 10 per cent. more were thought to have

\* Read before the Toledo, Ohio, Academy of Medicine, Nov. 17, 1922.

\* From the Pathologic Laboratory and Gynecologic Service, St. Luke's Hospital.

1. Curtis, A. H.: A Combined Bacteriological and Histological Study of the Endometrium in Health and in Disease, *Surg., Gynec. & Obst.* **26**: 178 (Feb.) 1918.

2. Curtis, A. H.: *Surg., Gynec. & Obst.*, March, 1914, p. 299; *Chronic Leukorrhea: Its Pathology and Treatment*, J. A. M. A. **74**: 1706 (June 19) 1920.

3. Curtis, A. H.: Bacteriology and Pathology of Fallopian Tubes Removed at Operation, *Surg., Gynec. & Obst.* **33**: 621 (Dec.) 1921.



been primarily infected with the gonococcus; but this could not be determined with certainty.

It has long been known that gonococci soon disappear from the tubal mucosa, but proof that infection does not persist in the deeper tubal structures has been wanting. It is therefore of interest to note that it has not been possible for us to obtain gonococci in cultures from the entire thoroughly ground tube if the patient has been free from fever and leukocytosis for a period of more than two weeks. Not only does the infection soon die out, but a single attack usually causes only moderate pathologic changes and symptoms of correspondingly mild degree. Badly diseased tubes are most often the result of frequently repeated infection from the lower genital tract or from an outside source.

Although the process of gonorrheal infection usually involves the entire thickness of the tube, the mucous membrane is most markedly affected. When healed, the mucosa in typical cases is crippled by adhesions between its folds or "villi." In addition to these adhesions we also find glandlike nests of mucosa buried in the tube wall as a result of the inflammatory process. Longitudinal and serial sections reveal that these nests remain connected with the tube lumen and form pockets which predispose to lodgment of the ovum and development of tubal gestation.

A final point in the differentiation of gonorrheal salpingitis requires emphasis. Adhesions to the surrounding viscera, even though old and numerous, can be separated by blunt dissection. This appears always to hold true, even though the process has been one of the greatest severity.

Streptococcus infection accounts for more than 10 per cent. of pathologic changes in the tubes. Nearly all of these infections are traceable to abortion or intra-uterine instrumentation. The infections are often widespread in the cellular tissues, and tubal involvement is usually only a part of the picture. Although hydrosalpinx or other gross lesions may occur, the typical pathologic condition is perisalpingitis without notable change in the lumen or deeper portions of the wall of the tube. Adhesions vary in number and firmness; virulent streptococci tend to leave densely adherent surfaces without available lines of cleavage. Streptococci, in contrast with gonococci, may remain buried and viable in the tissues for many years after the original infection.

Tuberculosis has been present in 5 per cent. of diseased tubes removed by us. Tuberculosis of the female genitalia,<sup>4</sup> exclusive of generalized tuberculous peritonitis, is chiefly a tubal infection, and involves particularly the mucous membrane of the tube. The tubes are usually much enlarged and much indurated. When opened, it is found that thickening of the wall is due to hyperplasia of the mucosa, without much change in the muscle layer and peritoneal covering. The gross picture is similar to that of severe recurrent gonorrheal salpingitis. Some points that aid in the differentiation from gonorrheal tubes are these: There is greater tendency to pallor of the tissues. Tubercles are not often recognized until subsequent microscopic examination. Calcified areas may be palpated. Occlusion of the fimbriated ends occurs much less often than in gonococcus infections of equal severity; when the fimbriae are free, caseous material may sometimes be

expressed from the open end of the tube. Adhesions are firm, and must often be cut or torn when separated.

Tuberculous and streptococcus infections of the tubes have in common certain features of surgical interest. Exceedingly firm adhesions, not amenable to blunt dissection, are characteristic of both. This is in contrast with gonococcal infection, as is also the tendency to persistence of viable bacteria in the tissues for very long periods of time. Extension of infection to the ovary is frequent in tuberculosis, and is one of the most distressing complications of streptococcus salpingitis. In the presence of a diseased ovary, with the indications for removal somewhat uncertain, more radical surgery appears indicated in streptococcus and tuberculous infections than in gonorrheal disease of equal severity, because persistently viable bacteria predispose to postoperative ovarian infection.

#### CONCLUSIONS

1. The body of the uterus seldom harbors bacteria for a long period of time. Discontinuance of uterine curettage in attempts to relieve chronic infection marks a decided advance in our methods.

2. In most instances, leukorrhea arises from the cervix and from glandular tissues in the vicinity of the urethra. Treatment directed to eradication of these diseased areas yields very satisfactory results.

3. Gonorrheal infection of the fallopian tubes is naturally a quickly self-limited disease. So-called chronic gonorrheal salpingitis is usually a recurrence from an external source or repeated invasion from the chronically infected lower genital tract.

4. Streptococcus infection of the tubes occurs usually as a complication of abortion or intra-uterine manipulation, and is commonly only a part of more widespread pelvic infection. Streptococci, in contrast with gonococci, may remain viable in the tubes for many months or even for years.

5. Even the most prolonged and most severe gonorrheal disease of the tubes is characterized by adhesions amenable to blunt dissection. Adhesions which require cutting or tearing speak for streptococcus or tuberculous infection.

6. In any given case, if there is question whether it is advisable to remove the ovaries at the time of operation, more radical measures are indicated in streptococcus or tuberculous infection than in gonococcal disease of equal severity, because viable bacteria probably remain buried in the tissues, and there is likelihood of postoperative chronic ovarian infection.

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**Medical Impressions of Latin America.**—Several physicians formed part of the official delegation sent by France to take part in the centennial celebrations in Brazil this fall. Dr. J. L. Faure, an official delegate from several scientific associations, has been publishing in the *Presse médicale* his impressions of the trip. It is a bright and breezy account of his journey to the "end of the world," as the Chileans call their country, Chile not being on the road to anywhere unless possibly in circumnavigating the globe. He traveled by land from Rio to Montevideo, Buenos Aires and Santiago, and was particularly impressed by the emergency service in these cities. At Santiago, there are three emergency stations, and when the ambulance arrives with the injured everything is ready even for the gravest interventions. One young surgeon there had already operated in four cases of stab wounds of the heart. There are arrangements for keeping the patients for a few days, after which they are transferred to a hospital or sent home. He says that the French might do well to take this emergency service as a model. The faculty of medicine at Santiago conferred an honorary degree on him.

4. Williams, J. W.: Tuberculosis of the Female Generative Organs, Johns Hopkins Hosp. Reports 3: 85, 1893. Peterson, Reuben: Review of One Hundred Cases of Women with Pelvic Tuberculosis with Special Reference to the End-Results of Operative Treatment, Tr. Am. Gynec. Soc., to be published.



# DETERMINATION AND INTERPRETATION OF CHANGES IN LUNG VOLUMES IN CERTAIN HEART LESIONS\*

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The development of the pathology of the circulation is one of the most interesting chapters in the history of medical science, first, because the diseases of the heart always have attracted the attention of many of the foremost clinicians; secondly, because the relation between

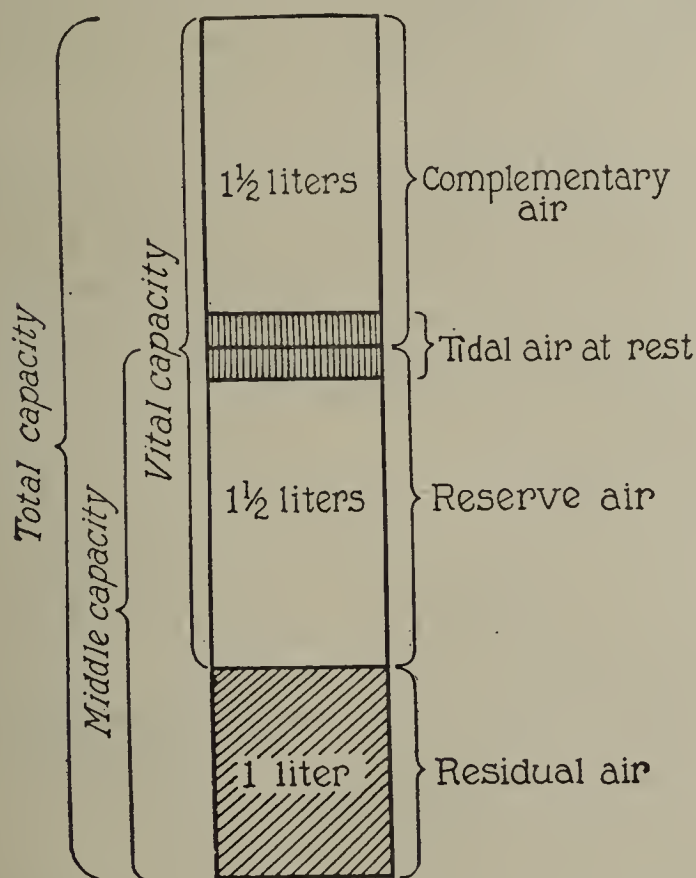


Fig. 1.—Lung volumes in “average normal” adult at rest.

the clinical studies of these diseases and the more fundamental medical sciences early became very intimate, and, thirdly because disturbances in the circulation usually do not remain confined to the circulatory organs. When disturbance in the function of the heart or, as we now know, in the function also of the capillaries reaches a certain intensity, changes in other organs (such as the lungs, liver, spleen, kidneys and subcutaneous tissue) occur. Such remote disturbances may be brought about in different ways, and may assume different characteristic features. They may in their very beginning remain confined to the vascular part of the organs. However, if the stasis lasts long enough, changes take place in the parenchymatous or interstitial parts of the organs. These changes may become permanent and irreversible, and may act almost as new and independent diseases (cirrhosis of the liver and kidneys; induration of the lungs). In some instances these secondary changes increase the extra burden already put on the heart through the primary lesion, and thus a vicious circle is established.

The study of the morphologic changes secondary to circulatory involvement began more than half a century ago, and our knowledge is in these respects rather complete. The physiologic or functional side of these questions has first more recently been subjected to

investigations. Even the problems we face are not yet clearly defined. It is therefore natural that our interpretation of symptoms observed at the bedside is mainly or, in many instances, exclusively based on our anatomic knowledge.

Among the organs secondarily involved in circulatory failure, the lungs rank high in importance on account of the intimate anatomic and physiologic connections between the lungs and the heart. If, in a patient with heart disease, the lungs are secondarily involved, not only may the gaseous interchange between air and blood be interfered with, but also a mechanical hindrance to the blood flow itself may ensue. As to the last point not much information is at hand, and certainly very little is quantitatively known. From the accentuation of the second pulmonic sound, we conclude that an increased blood pressure is present in the pulmonary circulation, a condition that throws more work on the right ventricle and causes hypertrophy of its walls. Furthermore, it is usually assumed that a decreased range of excursion of the chest impedes the inflow of the venous blood to the right auricle. As to the first point, the exchange of the gases between the blood and the air, also very little is known. A disturbance of gaseous exchange may be caused in two ways: first, by an abnormal condition of the membranes separating the blood from the alveolar air, causing a slower diffusion of gases; second, by changes in the lung volumes, so that the tension of the gases in the alveoli is unfavorably affected. I shall in this confine myself to a discussion of one phase of the last mentioned problem; namely, the question of the changes in the lung volumes in patients with heart disease.

## USUAL TERMINOLOGY APPLIED TO LUNG VOLUMES

Figure 1 represents the conditions in what we might term an average normal person at rest. The whole column indicates the total lung volume, that is, the maximum amount of air which the lungs hold after a maximum inspiration. A certain part of this can be expired at maximal effort; this is termed the vital capacity. A smaller part of the total capacity cannot by any means

TABLE 1.—NORMAL RELATIVE VALUES FOR THE DIFFERENT LUNG VOLUMES BASED ON TWENTY-SEVEN OBSERVATIONS

Total capacity.....	100	T
Middle capacity.....	62	$T \times \frac{62}{100}$
Residual air.....	24.7	$T \times \frac{24.7}{100}$
Vital capacity.....	75.3	$T \times \frac{75.3}{100}$
Reserve air.....	37.3	$T \times \frac{37.3}{100}$
Complementary air.....	38.01	$T \times \frac{38.0}{100}$

be brought out of the lungs. This is called the residual air. During rest, the normal subject does not use the whole range of his vital capacity: he breathes with the lungs a little more than half filled. This amount is called the middle capacity. After inspiration he has a little more, after expiration a little less air in the lungs. The difference between the expiratory and the inspiratory position is called the tidal air. The tidal air, in normal persons at rest, is about 500 c.c. (Table 1). In a series of studies on different problems connected with the pathology of respiration and circulation, carried on during the last few years in Professor Faber's

\* Read before the Harvard Medical Society, Boston, Dec. 5, 1922.

\* From the Medical Clinic of the University of Copenhagen and the Hospital of the Rockefeller Institute for Medical Research.



Clinic in Copenhagen, the range of variation of the relative values of the lung volumes in normal resting adults was established. It was found that, in comparison with what is often seen in disease, the normal figures are fairly constant. The average normal values are given in Table 1. We can say that the vital capacity is three fourths and the residual air one fourth of the total capacity. The ratio of vital capacity to residual

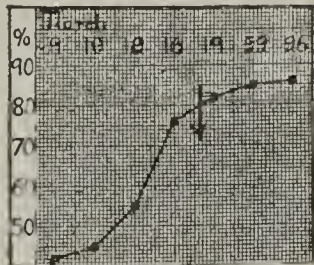


CHART 1.—VITAL CAPACITY IN CASE 11.

Case	Date	Vital Capacity		Condition	Remarks
		c.c.	%		
11 (Chart 1)	3/9	1,400	42	...	Hydrothorax; orthopnea; edema of legs
Med No. 6261 Chronic myocarditis Auricular fibrillation	3/10	1,475	43	Improved	Less dyspnea but still orthopneic
	3/12	1,800	55	Improved	Less edema; less dyspnea; less hydrothorax
	3/16	2,300	70	Improved	Lungs clear; less dyspnea; hydrothorax gone.
	3/19	2,700	82	Stationary	Left hospital in good condition
	3/22	2,775	83	Stationary	
	3/26	2,800	86	Stationary	

Fig. 2.—Increase in the vital capacity of a patient with heart disease during treatment; the value does not reach the normal figure. (After F. W. Peabody.)

air is, of course, 3:1. If, therefore, the normal value of one of the lung volumes is known, one can with a certain degree of accuracy calculate the other volumes.

VITAL CAPACITY

These different lung volumes, fairly constant in normal resting persons, may undergo smaller or larger changes in patients with heart disease. Let us first consider the vital capacity. The exactness and easiness with which the vital capacity is determined since Hutchinson, in 1846, introduced the spirometer, has resulted in a large number of investigations. We know that the vital capacity is often diminished to a very considerable extent in patients with heart disease, especially in patients with mitral lesions, because the lung stasis is most pronounced in these cases. By dividing

TABLE 2.—RELATION BETWEEN DEPTH OF RESPIRATIONS, NUMBER OF RESPIRATIONS, AND AIR IN LUNGS, SECURING COMPLETE MIXTURE OF LUNG AIR AND BAG AIR IN DILUTING METHOD

Liters of Air Left Unexpired in Lungs During Mixing	Depth of Respiration in Liters							
	1	1.5	2	2.5	3	4	5	
6.3	..	14	..	..	..	..	..	} Number of rebreathings necessary to secure full mixture*
5.8	..	13	7	..	..	..	..	
4.8	..	10	7	..	6	..	..	
3.8	..	6	6	..	5	4	..	
2.8	..	6	5	..	5	3	3	
2.0	9 (6)	6 (5)	4 (3)	(3)	3	3	3	
1.3	(7)	(5)	(3)	(3)	(3)	..	..	

\* Figures in parentheses apply to bag, the others to a Krogh spirometer. The connecting tube between spirometer (bag) and mouth must be not more than 30 cm. long and not less than 1.5 cm. wide. Respiration rate from 8 to 20 a second. Not more than from 1 to 2 liters of air must be left in spirometer after inspiration.

patients into groups according to their height, Peabody and his associates at the Harvard Medical Clinic<sup>1</sup> have shown that a decrease in the vital capacity is a conspicuous symptom in many patients with heart lesions. If the patients were segregated according to the severity of

1. Peabody, F. W., and Sturgis, C. C.: Clinical Studies of Respiration: Effect of General Weakness and Fatigue on Vital Capacity of Lungs, Arch. Int. Med. 28: 501 (Nov.) 1921. Peabody, F. W., and Wentworth, J. A.: Clinical Studies on Respiration, ibid. 20: 443 (Sept.) 1917. McClure, C. W., and Peabody, F. W.: Relation of Vital Capacity of Lungs to Clinical Condition of Patients with Heart Disease, J. A. M. A. 69: 1954 (Dec. 8) 1917.

the clinical symptoms, it was found that a general parallelism existed between the decrease in the vital capacity and the severity of the condition. They furthermore have shown that definite changes in the vital capacity take place as the clinical conditions of the patients change. In Figure 2, which is taken from one of Peabody's publications, this is clearly seen. During the stay in the hospital the vital capacity has increased considerably without, however, reaching its normal value. The first four determinations were made during the decompensated, the last three during the compensated, stage. It is of interest that the vital capacity did not reach its normal value. Brittingham and White<sup>2</sup> made the interesting observation that the increase in vital capacity often seems to lag behind the clinical improvement.

OTHER LUNG VOLUMES

Information about the changes in the vital capacity alone certainly has proved of value as a quantitative expression of the degree of the functional involvement of the lungs and of the pulmonic circulation in heart disease. However, as to the deeper understanding of the mechanism of the production of the lung involvement, determinations of the vital capacity alone yield less information for the simple reason that it may express changes in two variables, namely, the total capacity and the residual air.

As is well known, the total lung capacity (*T*) equals the sum of the vital capacity (*V*) and the residual air (*R*).  $V = T - R$ . A decrease in *V* may therefore be caused by (1) a decreased *T* or (2) an increased *R*, or (3) both of these factors acting together. For the understanding of the mode of production of the lung involvement in heart disease, it is therefore of fundamental importance to study the changes in total capacity and residual air.

In determining these volumes we face two obstacles, which are not always easy to overcome. The first is a difficulty in the determination of these lung volumes; the second, a difficulty in the estimation of the results gained. As to the first question, the total capacity, the middle capacity and the residual air cannot be brought entirely out of the chest. They can therefore be determined only by applying one of the so-called dilution methods, which require a complete mixture between the air in the lungs and the outside air. In normal persons such a mixture can easily be obtained. In heart patients, however, it is often difficult to ascertain the presence of complete mix-

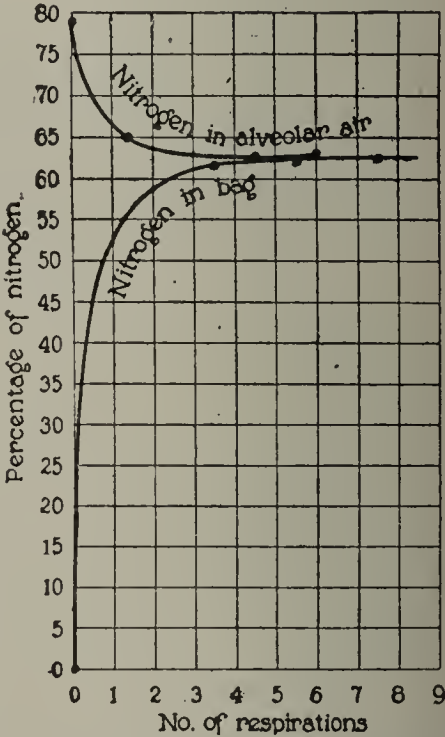


Fig. 3.—Mixing curves (oxygen method) obtained by taking repeated samples of air from bag (lower curve) and from alveoli (upper curve) without interrupting rebreathing. Mixture is present when alveolar curve bends upward (on account of decrease in total amount of air in bag + lungs). The value to be used for calculation is at the corresponding point of lower curve. (After different articles of Lundsgaard and Schierbeck, Proc. Soc. Exper. Biol. & Med. and Am. J. Physiol., to be published).

2. Brittingham, H. H., and White, P. D.: Cardiac Functional Tests, J. A. M. A. 79: 1901 (Dec. 2) 1922.



ture. In the Copenhagen Clinic we have studied the quantitative influence of variations in the three most important factors entering into the process of mixing lung air with other air when other minor factors are kept approximately constant. The three factors are the number of rebreathings, the depth of the rebreathings, and the amount of air left in the lungs after the expiratory phase of the rebreathings.

Based on our experimental results we have worked out a table from which we can select the magnitude for these three factors necessary to secure mixture in a given case (Table 2). If we want still further guarantee that mixture is present, we can construct what we might call a mixing curve, as shown in Figure 3. Such a curve can be obtained by having a patient rebreathe from a bag (Fig. 4). Without disturbing the experiment, small samples of air are drawn from the bag and from the alveoli into evacuated tubes. The percentage of nitrogen (if the oxygen method is used) can be plotted in curves, as shown in Figure 3. Mixture has taken place where the upper curve is at its lowest point. The nitrogen value to be used is the corresponding figure in the lower curve. In this way we have secured complete mixture in the determinations of the total lung capacity and the residual air of our heart patients. In patients with so small a vital capacity (below 1 liter) that the depth of the mixing respirations cannot become large enough to secure mixture within a reasonable time, the nitrogen-hydrogen method worked out in 1920 at the Rockefeller Hospital by Van Slyke and Binger<sup>3</sup> may be used.

Having obtained reliable figures for the different lung volumes actually present in such patients, we face the second obstacle, namely, the question how to find and express the deviation of these lung volumes from what would be the normal figures in such patients. Hutchinson realized that the directly observed figures did not yield any quantitative and hardly enough qualitative information. Rubow,<sup>4</sup> in his investigation on the lung volumes in patients with heart disease, calculated the relative size of the different lung volumes, using the total volume as the basic figure (Table 1). It is generally supposed that changes in the relative size of the lung volumes express important functional abnormalities, and other investigators have since the time of Bohr's and Rubow's publications used this way of presenting their observations.

In Table 3 the relative values of the different lung volumes in eleven heart patients are given. The value

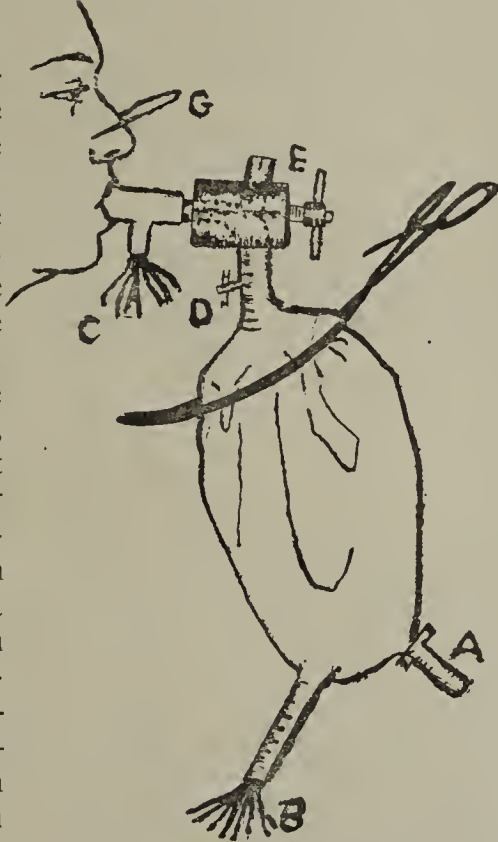


Fig. 4.—Five liter rubber bag; lead tubes with capillary boring inserted at C and B; through these tubes, samples of air can be drawn into evacuated recipients without interrupting rebreathing; alveolar air drawn at C; bag air drawn at B. (After Lundsgaard and Schierbeck.)

for the total capacity is 100, and the values for the middle capacity, the vital capacity and the residual air are consequently fractions of 100. In this way the middle capacity becomes either normal or slightly increased. Similar results were obtained by Rubow, who in this way saw a proof of Bohr's much discussed theory about functional adjustment of the middle capacity. Bohr thought that an increase in the middle capacity facilitated the blood flow through the lungs, and that it therefore was to be looked on as a functional adjustment secondary to a decreased power of the myocardium.

The relative values for the residual air show a considerable increase, and values for the vital capacity a marked decrease in all our cases. Expressed as relative values, our observations therefore simply confirm several previous determinations.

Quite a different picture of the conditions is obtained if the lung volumes are given, not relative to the observed total capacity but in percentage of the figures indicating the normal size of the lung volumes in each particular patient. These normal figures, of course, can be obtained only by calculation from some other body figure. Several empiric procedures have been proposed in the course of time, particularly for calculating the vital capacity. All, however, are open to discussion, and not more than an approximation can be claimed for any of them. We have applied the procedure devised by Van Slyke and myself<sup>5</sup> at the Rockefeller Hospital in 1918. We determined three dimensions of the chest in the different positions. The lung volumes were then determined in the corresponding positions. In a series of eighteen normal adults the ratio between the size of the chest (determined as the product of the three dimensions) and the lung volumes were found to be constant enough to be useful for a calculation in cases in which only the chest measurements could be obtained. In another series of determinations of the chest-lung volume ratio in twenty-seven normal adults in the Copenhagen Clinic, we arrived at practically the same average figures and the same constancy as found in the first eighteen subjects at the Rockefeller Hospital.

It is self evident that one cannot calculate the normal lung volumes from the chest dimensions if the form of

TABLE 3.—OBSERVED LUNG VOLUMES GIVEN IN PERCENTAGE OF NORMAL RELATIVE VALUES \*

No. of Patients	Total Capacity	Middle Capacity	Residual Air	Vital Capacity	Comment
1	100	105	122	92	Patients with uncompensated heart failure
2	100	99	143	85	
3	100	90	118	94	
4	100	99.5	145	85	
5	100	87	146	84	Patients with compensated heart failure
6	100	142	156	81	
7	100	...	215	62	
8	100	103	170	77	
9	100	101	136	88	
10	100	95	135	88	
11	100	125	187	71	

\* Compare Table 1.

the thorax deviates materially from the normal. It is also clear that one cannot *a priori* rely on its validity in patients in whom the excursions of the chest wall are abnormal, a condition which is common in heart patients, as expressed in Table 4.

However, by combining the ratio of chest dimensions and lung volume with the normal ratio between the different lung volumes, one can overcome this difficulty and obtain figures which can be shown at any rate to approximate the normal so much that it is justifiable

3. Van Slyke, D. D., and Binger, C. A. L.: Proc. Soc. Exper. Biol. & Med. 18: 141, 1921.  
4. Rubow, V.: Deutsch. Arch. f. klin. Med. 132: 255, 1908.

5. Lundsgaard, Christen, and Van Slyke, D. D.: J. Exper. Med. 27: 65 (Jan.) 1918.



to consider them the normal figures.<sup>6</sup> We have in this way determined quantitatively the deviation of the lung volumes from the normal in eleven patients with heart disease. We found (Table 4) that in most cases a decrease in the total capacity takes place, a decrease which as a whole is most pronounced in the clinically most severe cases. The figures range from 107 to 52 per cent. of the value calculated as normal. The middle capacity is either diminished or normal. The residual air is decreased in three cases and increased in eight. The vital capacity is decreased in all cases, and often to a very considerable extent. The reason for the discrepancy between the values in Table 3 and in Table 4 is, of course, the fact that the figures in Table 3 were

based on the observed total volumes, which in itself deviates considerably from the normal values.

The figures in Table 4 bring out two important facts that were distorted or even veiled in Table 3. One concerns the middle capacity, in which no increase is present. The other is that the residual air may be increased in some and decreased in other cases of heart failure. In short, in heart patients we have found that the total lung volume and middle capacity are in most cases diminished; in others, normal. The vital capacity is more or less decreased; the residual air is in some cases decreased, in others, increased.

Peters and Barr,<sup>7</sup> in 1920, used this procedure in calculating the normal lung volumes in six patients with heart diseases. They did not find any increase in the residual air in any of their patients. In calculating the normal lung volumes, they proceeded in the same way as Garvin, Lundsgaard and Van Slyke in tuberculous cases in 1918, using the actual chest measurements without correction. However, if this is done, a considerable error may result, usually so that the calculated residual air is too large. If Peters and Barr's results are corrected for impaired chest movement, their figures change considerably, and the first four cases show increased residual air. In the last two heavily decompensated cases the residual air is diminished, even compared with the corrected figures. The correction, as in our own figures, is made

by assuming the position of the chest to be normal in maximum inspiratory position. Vital capacity and residual air are then found by multiplying the (calculated) total volume by 0.75 and 0.24, respectively (Table 1).

#### MECHANISM OF PRODUCTION OF CHANGES IN TOTAL LUNG VOLUME

The decrease in the total lung capacity can theoretically be brought about in two different ways, as

shown in the diagram in Figure 5. The total maximum air space may be diminished because the chest wall does not expand as much as usual. Consequently, a certain part of the complementary air or even a part of the reserve air remains outside the lungs (Column B). The other mode of production is shown in Column C. The chest wall can expand to its normal limit. However, a larger part of the chest space than usual is

TABLE 4.—OBSERVED VALUES OF DIFFERENT LUNG VOLUMES IN PERCENTAGE OF NORMAL VALUE, CALCULATED FROM THE SIZE OF THE CHEST WALL, AFTER CORRECTION FOR DIMINISHED EXCURSION OF CHEST HAS BEEN MADE

No. of Patients	Total Capacity, per Cent.	Middle Capacity, per Cent.	Residual Air, per Cent.	Vital Capacity, per Cent.	Excursion of Thorax, Cr/Ct	Comment
1	60	63	73	56	86.4	Patients with uncompensated heart failure
2	52	51	73	45	84.7	
3	54	49	64	52	82.5	
4	78	78	112	67	83.0	
5	100	87	145	86	79.2	Patients with compensated heart failure
6	71	100	109	58	80.3	
7	81	...	172	50.5	82.0	
8	85	87	142.5	65	81.5	
9	102	103	132	94	80.9	
10	107	102	142	96	84.3	
11	89	112	164	61	85.3	

\* Normal ratio, 74.7.  $\frac{Cr}{Ct}$  = "chest volume" at maximum expiration divided by "chest volume" at maximum inspiration.

occupied by fluid or solid matter, leaving less space for air. This explanation was already suggested by Traube. Later it was taken up by Siebeck.<sup>8</sup> If the decrease in the total lung capacity was produced as shown in Column B by a less extensive expansion of the chest than usual, one would have to assume an effect either of weakness of the inspiratory muscles, or of stiffness of the lungs (von Basch's <sup>9</sup> *Lungenstarre*). However, Peabody and Sturgis showed in 1921 that weakness cannot have any important effect. As to the stiffness, one must assume that if it is present it exerts its influence on the expiratory rather than on the inspiratory movement. It therefore seems not very likely that Column B represents the condition. On the other hand, can the decrease in the total air space of the lungs be attributed solely to an increase in the nonaerial contents of the chest? We have a series of factors which act

TABLE 5.—CHANGES IN LUNG VOLUMES IN ELEVEN PATIENTS WITH MITRAL DISEASES AT DIFFERENT CLINICAL STAGES

Clinical Conditions	Lung Volumes		
	Total Capacity	Vital Capacity	Residual Air
Compensated stage { Incipient cases More advanced cases.....	Normal	Decreased	Increased
	Decreased	Further decreased	Increased
Decompensated stage.....	Further decreased	Further decreased	Decreased

together in diminishing the air space of the thorax, namely: (1) an increased blood content of the lung capillaries; (2) an increased thickness of the interstitial tissues; (3) eventually some intra-alveolar and intra-pleural fluid, and (4) increased size of the heart. To these four factors may be added (5) increased size of the abdominal organs (liver, etc.), forcing the diaphragm upward, although the mechanism is some-

6. The rather elaborate calculations are not given here. Readers are referred to a series of articles to appear in 1923. Preliminary reports were given at the December, 1922, meeting of the Society for Experimental Biology and Medicine.

7. Peters, J. P., and Barr, D. P.: *Am. J. Physiol.* **54**: 335 (Dec.) 1920.

8. Siebeck, R.: *Deutsch. Arch. f. klin. Med.* **100**: 204, 1910; **107**: 252, 1912.

9. Von Basch: *Klinische und experimentelle Studien aus dem Laboratorium von Prof. von Basch, Berlin* **1**: 171, 1891.

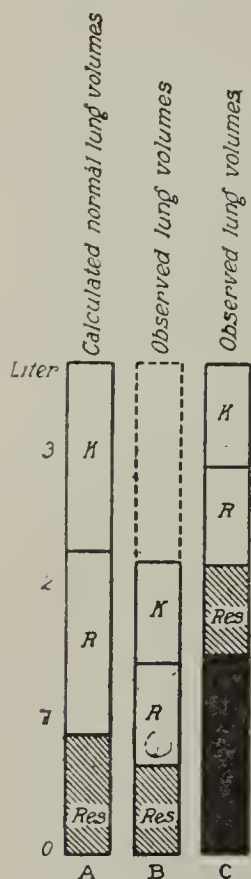


Fig. 5.—Mode of production of changes in total lung volumes in heart patients: A, calculated normal figures in Patient 1; B, condition if decrease is due to diminished expansion of chest; a certain amount of air remains outside the chest (area inside dotted lines); C, mechanism if diminished air content of lungs is due to an increase in the non-aerial space (black area) in the normally expanded thorax: V, K + R, vital capacity; Res., residual air. (After Lundsgaard and Schierbeck.)



what different. Indeed, one might be inclined to ascribe to the last factor the mode of action expressed in Column B. The maximum difference between the total lung volume calculated as the normal figure and the observed lung volume is in our eleven cases 1.75 liters (No. 5). Although no quantitative information is at hand as to the effect of these different factors, we believe that we are justified in ascribing the diminished total lung volumes in heart diseases to a pathologic increase in the solid and fluid matter normally present in the chest cavity (including the upward displacement of the abdominal organs).

#### MECHANISM OF PRODUCTION OF CHANGES IN RESIDUAL AIR

We found, as mentioned, in eight patients a considerable increase, whereas a decrease was present in three patients. By comparing these figures with the clinical pictures, a highly important fact is revealed. The eight patients showing increased residual air were all in the so-called compensated stage, whereas the three patients showing a decrease were markedly decompensated. How is it brought about that the residual air is increased in the compensated stage but decreased when compensation is broken? The explanation of this is, I believe, to be found in von Basch's theory about the so-called *Lungenschwellung* and *Lungenstarre*. I think it might be of interest to see how von Basch arrived at his theory. He wound a rubber tube containing water on a spiral on the outside of a soft bag. The bag was supposed to represent the air space in an alveolus and bronchus, and the tube the blood vessels around the alveolus. By increasing the pressure in the tube, he could produce a distention of the bag (Fig. 6). He boldly transferred this by analogy to the conditions in the human lungs in patients in whom the pressure in the pulmonary circulation was increased.

His theory has never been actually confirmed in patients. On the contrary, most investigators have rejected it. I believe that our findings may be explained by von Basch's theory better than in any other way, so far as the mild cases are concerned. The increased residual air in these cases, according to this theory, is caused by a stiffness of the lung capillaries on account of the increased pressure in the capillaries. It is interesting and of importance that we have found this increase in the residual air to be present before the total capacity is affected. Similarly, the sign of increased pulmonic blood pressure, the accentuation of the second pulmonic sound, is the earliest sign of valvular mitral disease. In the advanced cases, von Basch's theory does not hold true. This is undoubtedly due to the same factors that diminished the total air space, namely, increase in the solid and fluid content of the chest and probably particularly to fluid in the alveoli.

#### MECHANISM OF PRODUCTION OF CHANGES IN VITAL CAPACITY

The vital capacity was found to be diminished in both the compensated and the decompensated stage.

In the first stage, this decrease is mainly or even entirely due to the increased residual air, that is, to stiffness of the lungs. In the second stage, the decrease in the vital capacity is caused exclusively by the diminished total volume, that is, to the diminished air space in the lungs. A continued series of determinations of the lung volumes in heart patients during different functional stages of the disease, as taken up by Dr. Binger at the Rockefeller Hospital, will undoubtedly prove to be most valuable for correlating the clinical stages with the changes in lung volume. In the first place, one will be able to follow the excursions of the chest and the diaphragm from time to time, and in this way test the validity of our assumption. Furthermore, by determining the lung volumes from time to time, one obtains a sort of control on the calculated figures.

The ordinary sequence of events in heart patients with lung involvement, according to our findings and interpretations, is therefore the following:

In the very first stage of a (mitral) lesion in which the main clinical symptoms are the accentuated pulmonic second, the concentric hypertrophy of heart and the murmurs, the only abnormality found may be an increased residual air. In course of time when the stasis lasts long enough, the total volume begins to decrease, owing to the increasing influence of the previously mentioned factors. The residual air may, however, still be found increased. At last a period of broken compensation turns up, with further decrease in the total capacity. In this period, however, the residual air is diminished often to a considerable degree.

From this it appears natural that the vital capacity in heart patients cannot in the course of effective treatment increase to its normal value (Fig. 2). Even if the total capacity becomes normal, the residual air remains increased on account of the increased pressure in the pulmonic circulation necessary for the establishment of compensation. The vital capacity, therefore, must remain somewhat diminished.

I shall not in this place enter into a discussion of the effect of the changes in lung volumes on the mechanism of respiration and on the gaseous supply of the blood.

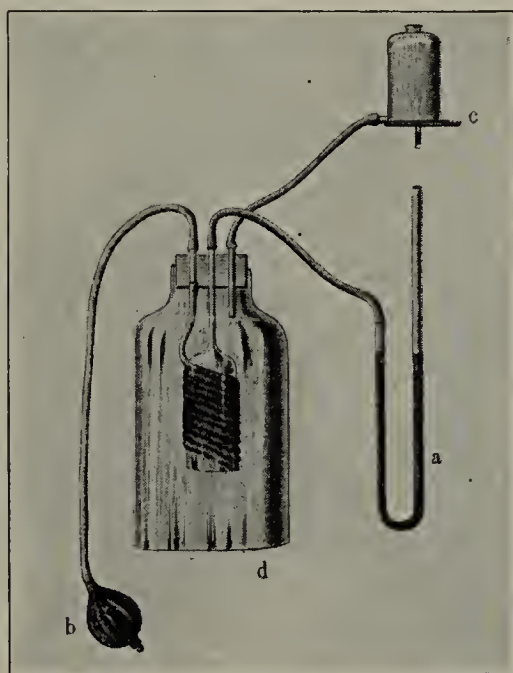


Fig. 6.—Von Basch's apparatus for demonstrating the effect of increased pressure in a rubber tube wound up in a coil around a rubber bag; a, manometer connected with the bag.

**Parasites and Their Discoverers.**—In 1879 the epoch-making discovery of the rôle of the mosquito in the development of filarial worms was made by Manson and the science of medical entomology was born. The transmission of trypanosome diseases by tsetse flies was discovered by Bruce in 1893, the relation of mosquitoes to yellow fever by the American Yellow Fever Commission in 1900, and to dengue by Graham in 1902; the relation of ticks to African relapsing fever by Dutton and Todd, and independently by Koch in 1905; the relation of ticks to spotted fever by Ricketts in 1906; the relation of lice to typhus by Nicolle and his fellow workers in Algeria in 1909, and independently by Ricketts and Wilder and by Anderson and Goldberger in Mexico in the same year (published in 1910); the life history of blood flukes by Leiper in 1914 and 1915, and the rôle of crabs as second intermediate hosts of lung flukes by Nakagawa in 1916.—Chandler, *Animal Parasites and Human Disease*.



THE CHOICE OF PYELOGRAPHIC  
MEDIUMS \*

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In 1906, through the work of Voelcker and von Lichtenberg, the urinary tract was first rendered opaque to the roentgen ray. Since that time the technic of pyelography has steadily improved, and the procedure, now satisfactory and devoid of danger, plays a rôle of supreme importance in urologic diagnosis. The earliest efforts and their attendant difficulties are matters of common knowledge. The colloidal silver preparations of which so much was expected proved unsafe. Indeed, their untoward effects might well have been foretold had it been remembered how readily invasion of the renal and general circulations may follow abnormal pressure within the kidney pelvis.

Instances of disaster following the use of silver are multiple, the damage resulting in most cases from silver embolism, and the kidney being usually the chief sufferer.

These more harmful substances, therefore, were supplanted by the thorium solution of Burns.<sup>1</sup> This was an excellent contribution. Its value from the standpoint of density in roentgen-ray plates is unquestioned. But thorium is expensive; the solution is not easy to prepare and it is kept sterile with some difficulty, as evidenced by the fact that it permits the growth of molds.

During the last few years simpler substances, salts of the halogen group, have come into favor and have been generally accepted as more nearly ideal pyelographic mediums. Aqueous solutions of sodium bromid and sodium iodid have proved to be highly satisfactory. They are of sufficient molecular weight to cast good shadows. They are readily injected through small catheters and are withdrawn with equal ease. They are inexpensive, easily prepared, and kept sterile without difficulty. Furthermore, they are so entirely lacking in toxic effects that their entry in small amounts into the circulation, should it occur, need not be feared.

We have referred to the fact that thorium permits the growth of molds. No such contamination will be found in the bromid and iodid solutions; but whether or not they possess positive germicidal properties is an important question which seems not to have been answered. A study of the phenol (carbolic acid)

coefficients of these two substances has therefore been undertaken. As a result of this investigation, it is possible to say that both solutions have a very slight inhibitory effect on bacteria. There is no significant difference, in this regard, between the sodium iodid and the sodium bromid. Neither is definitely bactericidal.

While sodium bromid and sodium iodid are both entirely satisfactory from the point of view of roentgen-ray density, sodium bromid has been more widely used. In this clinic for several years it has been employed as a routine in 25 per cent. solution. The same substance is in use in the Boston City and Massachusetts General hospitals. Sodium iodid has also had its champions, notable among them being Cameron,<sup>2</sup> who is responsible for a good deal of the experimental work that has been done to compare the efficiency of these two mediums. He first recommended a 25 per cent. iodid solution, but later suggested that its hypertonicity might prove undesirable. He

finally selected a 13.5 per cent. solution, and on the basis of his very thorough work, he concluded that it was the best available pyelographic medium. From the standpoint of opacity, he found it just as satisfactory as 25 per cent. sodium bromid, and better than thorium. He called attention also to the important observation that iodine possesses a selective absorption, apart from its atomic weight, and that the relative density of its shadow increases with increasing penetration of the roentgen rays. Believing, further, that toxicity grows with hypertonicity, he felt that the markedly lower osmotic pressure of 13.5 per cent. sodium iodid solution gave it distinct

advantage when compared with 25 per cent. sodium bromid.

We became interested in the problem of the choice of mediums as a result of an incidental observation made in the course of a long experimental study of the urinary tract. We were interested in the reaction of the bladder musculature to distention with various fluid substances. Anesthetized rabbits were used. A ventral midline incision and retraction of the intestines made it possible to observe the slowly filling bladder, together with one or both ureters. Provision was made for the recording of intravesical tension. Purely as a basis for more accurate interpretation of subsequent fluoroscopic studies, we were filling with body-warm 25 per cent. sodium bromid solution. We were greatly surprised at the close of the first of these experiments to find that striking changes in the bladder wall had



Fig. 1.—Normal renal pelvis filled with 12 per cent. sodium iodid solution.

\* From the Laboratory of Surgical Research of the Medical School of Harvard University and the Urological Clinic of the Peter Bent Brigham Hospital.

1. Burns, J. E.: Thorium—A New Agent for Pyelography, *J. A. M. A.* **64**: 2126-2127 (June 26) 1915; Further Observations on the Use of Thorium in Pyelography, *Tr. Sect. Gen.-Urin. Dis. A. M. A.*, 1916, pp. 314-323.

2. Cameron, D. F.: Aqueous Solutions of Potassium and Sodium Iodids as Opaque Mediums in Roentgenography, *J. A. M. A.* **70**: 754-755 (March 16) 1918. Cameron, D. F., and Grandy, C. C.: Sodium and Potassium Iodids in Roentgenography, *ibid.* **70**: 1516 (May 25) 1918. Cameron, D. F.: The Use of Iodids in Pyelography, *ibid.* **72**: 1737 (June 14) 1919; A Comparative Study of Sodium Iodid as an Opaque Medium in Pyelography, *Arch. Surg.* **1**: 184-214 (July) 1920.



been produced. In numerous previous experiments we had filled with warm physiologic sodium chlorid solution to the point of moderate tension, and at the end of each of the experimental periods we had found the bladder able actively to empty itself. Furthermore, there were no gross changes in the vesical wall as a result of the filling. With 25 per cent. sodium bromid solution used under the same conditions, the results were invariably different. Very marked changes occurred, and the bladders were rendered incapable of normal contraction. Large quantities were not used to produce these effects (average 40.7 c.c.), and the pressures engendered (average 17.4 mm. of mercury) were low as compared with the levels frequently reached in our work with physiologic sodium chlorid solution.

The first response to bladder filling with 25 per cent. sodium bromid was an increased irritability of the vesical musculature marked by rhythmic undulatory contractions. This initial stimulation, however, was only transient, and gave way finally to distinct depression. As filling progressed, the posterior region of the bladder developed a pale, silvery sheen, the spread mesh of muscle bundles being blanched as though completely anemic. With greater distention, the most conspicuous and important change occurred in the form of extreme edema. This involved chiefly the posterior dependent portion of the bladder, but extended into all of the adjacent tissues. A striking jelly-like, edematous layer appeared between the lateral trunk blood vessels and the vesical wall. Bromin, forced through structures of altered permeability, could be recovered from the serous surface of the organ. Thrombosis of small vessels was sometimes seen. When emptying was permitted, the bladder was found to be completely crippled as a result of the single filling. The anterior wall, protected somewhat by the air bubble and away from the weight of the bromid solution, contracted normally. The posterior wall collapsed like a wet paper bag.

The same experiment performed in a dog of 13 kg., 400 c.c. of fluid being used, raising a pressure of only 40 mm. of mercury, produced the same striking edema and the same characteristic bromid changes. Suspecting that these results were not the specific effect of sodium bromid itself, we performed similar experiments using isotonic 36.4 per cent. sodium iodid. Similar changes were produced. Twenty-five per cent. sodium chlorid solution also gave the same picture. Furthermore, "physiologic" bromid, isotonic with the blood, was found to be of no more effect than physiologic sodium chlorid solution.

Hypertonicity seemed, therefore, to be the responsible factor.

It was then of importance to determine how long the damage due to bromid persisted. With aseptic technic, rabbits were catheterized, and the bladders, emptied of urine, were gently filled with warm 25 per cent. sodium bromid solution. A brief, light anesthesia was obtained with morphin and ether. The fluid was introduced by means of a small syringe, care being used to avoid large quantities and high pressures. In six cases the amounts injected varied from 10 to 32 c.c. (average, 21 c.c.); and the pressures ranged from 10 to 22 mm. of mercury (average, 15 mm. of mercury). At the end of the filling and when the pressure had been maintained for a brief interval, the bladder in each case was allowed to empty and the catheter was withdrawn. The average time spent in this entire procedure was twenty minutes.

The animals were returned to the cage, and twenty-four hours later anesthesia was repeated. A ventral incision permitted direct inspection of the bladders. In one of the six cases there were present only patches of

slight discoloration on the posterior wall. It is perhaps of some significance that in this instance less than fifteen minutes was spent in the filling, and the pressure developed was slightly lower (10 mm. of mercury) than in the other experiments of this series. In the remaining five cases, however, lesions of surprising extent were found. In all of them the urine was grossly bloody. The bladders were thin, flabby and edematous. They presented a grayish discoloration, most marked posteriorly, and there was extensive thrombosis of the blood vessels. The edema involved all of the adjacent structures, and fresh fibrinous adhesions between the bladder and the neighboring loops of



Fig. 2.—Hydronephrosis and hydro-ureter, with associated infection; pyelogram made with 12 per cent. sodium iodid solution.

the bowel gave a typical picture of a plastic pelvic peritonitis. Subserous petechial hemorrhages in the dependent coils of intestine were also frequently seen.

In the production of these lesions, irritants other than sodium bromid may be excluded as factors. Infection was certainly not concerned in the picture after so brief an interval. One of the animals gave signs of acute illness, and in this case a few cocci were seen in smears of the bladder urine. Smears from the extravescical exudate, however, contained no organisms. In another case with typical changes, cultures from the urine and from the fibrin on the outer bladder surface were negative. That an actual rupture of the organ at the time of filling was not responsible for the conditions found was evidenced by the fact that these damaged bladders could still be filled with considerable quantities of physiologic sodium chlorid solution and withstand high pressures.

Our next procedure was to perform a similar experiment and observe the bladder after forty-eight hours. With the aid of morphin, 20 c.c. of the bromid solution



was introduced very slowly; 12 mm. of mercury was the highest resulting pressure, save for a transient sharp rise to 40 mm. during a struggle of the animal. After a forty-eight-hour interval, the rabbit seemed entirely well; but the bladder presented the typical changes which have been described. These were less in extent, however, and showed signs of recovery. Thirty-five cubic centimeters of physiologic sodium chlorid solution was now introduced, raising a pressure of 23 mm. of mercury, and the organ remained entirely intact.

As we believed that we were dealing with the influence of hypertonicity, it now seemed important to learn how much it was necessary to reduce the concentration of the solution in order to escape its untoward effects. Testing solutions of lesser percentage, we found that 10 per cent. sodium bromid was practically innocuous. But this concentration was insufficient for satisfactory roentgen-ray density, as proved by a clinical trial. We selected, therefore, a 14.56 per cent. solution of sodium iodid, isotonic with 10 per cent. bromid. As might be expected from its isotonicity, it was equally lacking in harmful effects when subjected to our experimental test. Moreover, its much heavier molecular weight gave it a very satisfactory degree of opacity to the roentgen ray. The results of its clinical use were excellent. It was then interesting to find that for clinical purposes the margin of safety could be made still greater. Twelve per cent. sodium iodid is perfectly satisfactory for the making of pyelograms, and this solution is now in routine use in our clinic. It is isotonic with 8.2 per cent. sodium bromid. Compared with sodium bromid, therefore, its use involves a reduction in hypertonicity from that of a 25 per cent. to that of an 8 per cent. solution.

We do not wish to infer that serious damage such as we have described follows the clinical use of 25 per cent. sodium bromid. We do submit, however, on the basis of our work, that it is potentially an irritant and that its use is unwise. We feel that its hypertonicity, especially in the presence of increased pressure, may cause sufficient edema of the renal pelvis to occlude its outlet and so produce the picture of colic, chills and fever which too often follows pyelography. This is especially true when the amount introduced is large and when the fluid is retained for any considerable time. Certainly, bilateral pyelograms with this solution are inadvisable, if, indeed, they are ever warranted.

The following clinical record is of interest. The observation was made by a member of the staff who at the time knew nothing of our work:

A man, aged 46, came into the hospital with symptoms of disease of the urinary tract. A diagnosis was made of renal

calculus with associated infection, on the right side. In the course of the investigations, bilateral pyelograms were made with the 25 per cent. bromid then in use. Slight enlargement of the right kidney pelvis was shown, a stone being apparently within its collecting portion. Following the cystoscopy, the patient developed for the first time a fever of 101.5 F., and the right kidney became very tender. Two days later a pyelotomy was performed. The perirenal fat was found to be markedly edematous, and because of edema the operator experienced difficulty in working with the tissues of the pelvis.

Without further comment on the solution to be used, it will not be amiss to say a word concerning the proper making of a pyelogram. First of all, the hazards of the procedure should be borne in mind and the cases should be carefully selected. Patients with extensive infection and depressed renal efficiency should be subjected to pyelography with the greatest caution. We feel also that pyelograms in ambulatory cases should not be advised, as a general rule.

When the ureteral catheter has been introduced for this purpose, it should be advanced gently to the upper ureter or pelvis, but not so far into the latter as to produce unnecessary trauma and bleeding. Drainage of the contents of the pelvis for a brief period is then desirable. This is usually accomplished by the collection of specimens for microscopy and culture. The pyelographic medium should be injected slowly, for rapid distention is more productive of pain than is slow distention. Great pressures should be avoided with the utmost care. With this provision, it is of small consequence whether the gravity or the syringe method of filling is used.

Indeed, we believe the latter preferable. But the danger of high pressures within the bladder or renal pelvis cannot be overemphasized. The ease with which fluid may be forced from the pelvis into the kidney parenchyma and into the general circulation has been demonstrated repeatedly. The work of Poirier<sup>3</sup> in 1891 is a classic example. In his experiments he introduced water into the ureter, and saw it flow out through the renal vein. Lewin<sup>4</sup> and Goldschmidt, similarly, injected air and produced death from air embolism. There are many such observations in the literature, and we are too apt to forget their significance.

The quantity of fluid to be used is not always easily determined. The practice of waiting upon the patient for the signal of pain in the side is not dependable. Indeed, the production of pain should be avoided. It



Fig. 3.—Adenocarcinoma of bladder, with small diverticulum; cystogram made with 12 per cent. sodium iodid solution.

3. Poirier, Paul: *Compt. rend. Soc. de biol.*, 1891, pp. 585-587.

4. Lewin, L.: *Ueber das Eindringen von Luft aus der Blase in das Herz und die Wege dieser Wanderung*, *Arch. f. Exper. Path. u. Pharmacol.* 40: 308-312, 1898.



is better to take a plate with from 7 to 10 c.c. as a guide to the amount of further filling, than to subject the patient to the risks of overdistention. When a satisfactory picture has been obtained, the solution should be promptly withdrawn into the syringe, or, if this is not possible, the catheter should be left in situ to facilitate pelvic emptying. Finally, forced fluids, rest and urinary antiseptics will add their share to the comfort and safety of the patient.

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## MALIGNANT TUMORS OF THE SUPRARENAL GLAND

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Malignant tumors of the suprarenal gland are comparatively rare, and an early diagnosis is more difficult than that of hypernephroma or other growths occurring in the kidneys. The prompt detection of this condition is, however, of paramount importance, for the patient's only hope of recovery lies in surgical intervention before adjacent structures have become involved or metastases have occurred. The case here reported is of unusual interest from etiologic and diagnostic standpoints. It afforded an opportunity for anatomic and histologic study, in addition to thorough clinical investigation. While correctly designated under the broader term a hypernephroma, it should be classified with the adenocarcinomas.

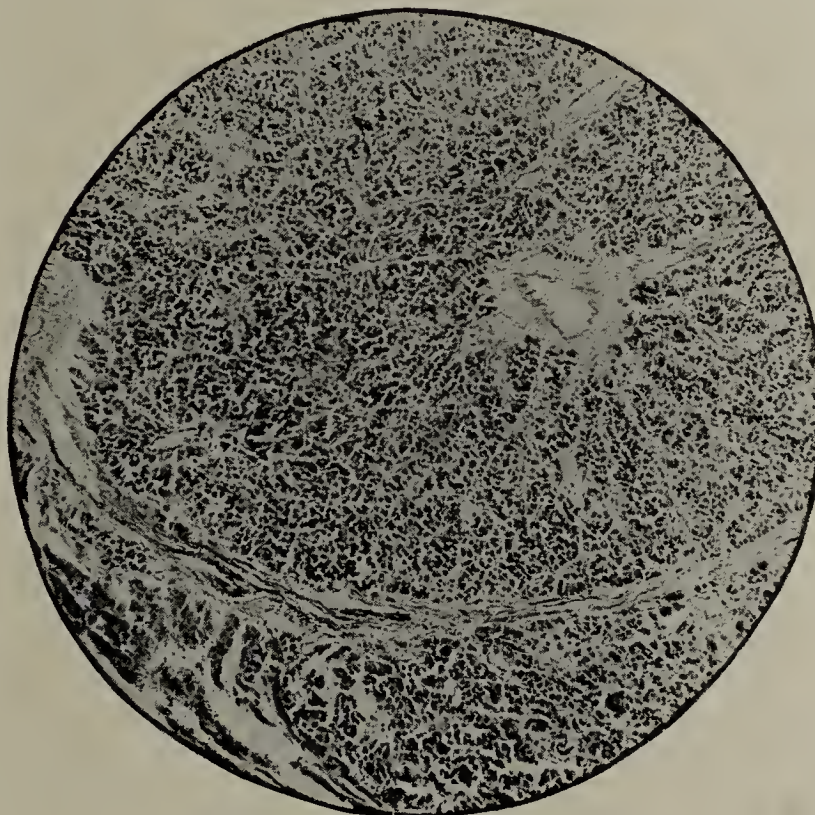
### REPORT OF CASE

M. G., a youth, aged 17, a leather repairer, seen in consultation with Dr. Harold Brunn, entered the Mount Zion Hospital clinic complaining of pain in the left upper abdominal quadrant. Except for measles when a child, he had never been sick before. Two hours after lifting a trunk he had been seized with a sharp pain in the left groin, became very weak, and fainted. Operation the following day revealed retroperitoneal bleeding with hematoma. He left the hospital in five weeks. Two weeks later, he complained of a steady, severe, sharp, cutting pain in the upper left abdominal quadrant and left lumbar region. He was taken to another hospital, and the pain disappeared in two weeks. He felt fairly well for seven months, and then had another attack similar to the foregoing. In addition to pain, he now also suffered from anorexia, nausea, marked weakness and slight headache. He was again taken to the same hospital, and operated on by the visiting surgeon. Incisions were made in the upper left lumbar regions, but apparently nothing was found. (A pyelogram taken at this time revealed a lateral elongation and narrowing of the left renal pelvis, together with an absence of the inferior calix.) He had had pain in the incisions since that time. Two months later, he again had a severe attack and was taken to the same hospital, but no diagnosis was made. Two weeks after this attack he entered Mount Zion Hospital, stating that he had awakened that morning with steady, sharp pains over the lines of the

incisions. These radiated upward and anteriorly across the abdomen. He also complained of chilly sensations, night sweats, anorexia, indigestion and vertigo. The bowels were regular, but the stools were occasionally tarry. He could not sleep on account of the pain, and had lost 6 pounds (2.7 kg.) in weight. Examination revealed a brownish pigmentation of the skin of the face, and a diffuse mottling over the entire body. A fine tremor of the tongue was present. The right base of the chest moved a little more than the left. When the patient coughed, there was a slight bulging, which started to the right of the umbilicus and extended over the upper left abdominal quadrant and lumbar region. It was most marked in the latter location. The left abdominal reflex was diminished. There was an area of slight hyperesthesia extending from the eleventh dorsal to the third lumbar vertebrae in both lumbar regions. The urine contained an occasional pus cell. The patient left the hospital in four weeks free from subjective symptoms. Examination between the attacks revealed a dilated stomach with peripyloric adhesions, a slight limitation of motion in the left half of the diaphragm, and hyperesthesia on both sides at the level of the eleventh and twelfth dorsal vertebrae.

A diagnosis of retroperitoneal postoperative adhesions following hematoma was made.

About six months later, the patient again entered Mount Zion Hospital complaining of the same symptoms. He stated that he had been free from pain only during three or four short intervals. It had been more marked than usual during the last two weeks. His blood pressure averaged 175 systolic and 120 diastolic. A mass beginning 1 inch to the left of the midline was felt projecting 1½ inches below the border of the ribs. It had a sharp border, and a notch could be detected. The surface was smooth, resembling liver or spleen, and it had a very slight respiratory excursion. There was a slight tenderness, most marked about 2 inches to the left of the midline. Another mass, smooth, rounded and more deeply situated, extended down the left flank, to a point just below the



Adenocarcinoma of left suprarenal gland.

level of the umbilicus. It was difficult to determine whether or not this was a part of the mass previously mentioned. It gave the impression of being an enlarged kidney. There was a patch of dulness with vocal fremitus posteriorly at the base of the left lung. Fluoroscopy revealed the left dome of the diaphragm high and fixed, and the stomach low in the pelvis. The urine occasionally contained a few blood cells, and cellular, hyaline and granular casts. Cystoscopic examination revealed an injected trigon. The ureters were catheterized to the pelves. No urine was obtained from the left kidney on either of two occasions, although three patent catheters were inserted. Clear urine, microscopically negative, was obtained from the right kidney. A comparative urea test of the right kidney and bladder urines showed equal values. Indigocarmine, injected intravenously, appeared on the right side in fourteen minutes; none appeared on the left side in seventeen minutes. Injection of thorium nitrate solution produced the characteristic pain. The resulting pyelogram disclosed marked flattening and transverse elongation of the pelvis, an absence of the calices, and a marked angulation of the ureter.

Operation revealed a large, retroperitoneal, abdominal mass lying below the stomach and splenic flexure of the colon. Inferiorly it extended well down into the loin, medially to the midline, and above beyond reach. It was of the color



of a normal kidney, but varied in consistency, being semi-cystic below and markedly indurated and nodular above. It was firmly adherent and quite vascular, and was considered inoperable. No fluid was found on puncture of the lower portion with a trocar. On the morning and evening of the fourth day after operation, the patient suffered from attacks of dizziness and convulsions. On return to consciousness five minutes after the first convulsions he was blind, but vision returned in a few minutes. The mass increased rapidly in size, the abdomen and lower chest becoming markedly distended. The feet and legs became edematous.

The patient died eight weeks after operation, twenty-two months after the beginning of symptoms.

Necropsy revealed the abdomen and lower part of the thorax greatly distended. Firm adhesions were found at the base of the left lung. The left pleural cavity was greatly encroached on by the high diaphragm. Extending from below the costal border was the liver, greatly enlarged and irregularly filled with tumor masses. Across this extended the distended, discolored colon. The small intestines were adherent to the anterior abdominal wall and matted together by numerous adhesions. The liver was removed with great difficulty, being adherent to the adjacent tissues, particularly to the diaphragm over the left dome. The stomach was flattened by the pressure of the solid contents of the abdomen. The left flank was occupied by a large, retroperitoneal mass. Across the face of this was the pancreas. The tumor was densely adherent to the diaphragm and posterior abdominal wall, particularly in the region of the scars. It was removed with great difficulty, and with it the left kidney, which was attached to its lower pole. The axis of the kidney ran obliquely upward and outward. No enlarged lymph glands were found. The lungs were collapsed. The left lung was shortened, owing to encroachment of the abdominal contents on the pleural space. In both lungs a few small nodules similar to the main tumor were found near the periphery. The liver was tremendously enlarged and irregularly studded with tumor masses varying in size from a pin point to a baseball. The larger masses were umbilicated, whitish yellow at the periphery, and terra cotta colored and necrotic in the center. The liver tissue was somewhat pale, but normal markings were preserved. The total mass weighed 4,473 gm., and measured 30 by 9 by 3 cm.

Following gentle manipulation, the tumor mass separated readily from the kidney, leaving the latter intact. A depression was noted on the medial face of the kidney, just above the hilum. The capsule of the kidney was not invaded, and stripped from the organ readily. The kidney was flattened with the exception of its lower pole. The pelvis had been obliterated by pressure. It weighed 105 gm., and measured 12 by 7 by 0.75 to 2.5 cm. A small red infarct was noted in the cortex.

The tumor, which was originally ovoid, was absolutely necrotic, and fell apart, allowing the disorganized center to escape. It measured roughly 20 by 18 by 18 cm., and weighed 1,400 gm. As a whole, it was terra cotta, but areas varied from brick red to a pale yellow.

The diagnosis was hypernephroma of the left suprarenal gland.

Microscopically, the tumor was made up of cells in circular groups or in long cords. The groups were separated by very fine connective tissue strands. In some areas there was a distinct perihelical arrangement, and everywhere vascularity was pronounced. No suggestion of lumen formation was found. The individual cell showed a relatively small, deeply staining nucleus, with a relatively large amount of cytoplasm. The latter was much vacuolated. Mitotic figures and giant cells were very frequent.

The picture presented the microscopic characteristics of the suprarenal adenoma type of hypernephroma. The picture lacks the characteristics of renal carcinoma, such as papillary pattern or tendency toward lumen formation.

#### COMMENT

In this case there seems to have been a definite connection between the trauma and the development of the hypernephroma. An early diagnosis was rendered

difficult by the appearance of symptoms so soon after the injury, by the bleeding and hematoma found at the first operation, and because of the negative findings at the second operation. The patient's later symptoms, pigmentation of the skin, tumor mass, weakness and gastro-intestinal symptoms, were, of course, suggestive of a tumor of the suprarenal gland. An interesting feature of this case was the brownish discoloration of the skin, although but one of the suprarenal glands was affected. Another unusual feature was the comparatively slow progress of the disease. The majority of suprarenal tumors progress rapidly after the first symptom has appeared. Adenocarcinoma is infrequent in such a young patient; the average age is 44 years.

Until a comparatively recent period, the majority of both cortical and medullary growths were classed as sarcoma or lymphosarcoma. The latter now, however, are considered to be of neuroblastic origin, and are termed neuroblastoma or neurocytoma. They are derived from the medullary portion of the gland, and usually occur during infancy or early childhood. They assume, in a large majority of cases, one of two forms, the Pepper type, with secondary growths only in the liver, and the Hutchinson type, characterized by metastases most marked in the skull, although the sternum, vertebrae and rarely the long bones and viscera are at times involved. Unlike the neurocytoma, the adenoma, carcinoma and hyperplasia are cortical growths. The tendency of some cortical tumors to reveal sarcomatous properties, however, has been demonstrated.

The etiology of malignant tumors of the suprarenal gland is obscure, although a history of injury is given in about 9 per cent. of these cases. Not unlikely a predisposition to the development of this condition exists, or the progress of a growth already present is accelerated by traumatism.

In a study of seventy-four cases in which my own was included, the following facts of diagnostic significance were elicited: Of seventy cases in which sex was mentioned, forty-two males and twenty-eight females were affected. Thirty-four per cent. occurred in infants or young children, 18 per cent. in patients between 6 and 40 years of age, and 48 per cent. in patients over 40 years old. Of sixty-seven cases in which a definite age was given, the average age was 32½ years. The right suprarenal was involved in 41 per cent., the left in 45 per cent., and both suprarenals in 14 per cent. Metastases occurred early, and were unusually widespread. In this series of seventy-four cases, the liver was involved in twenty-seven, the kidneys in sixteen, the lungs in fourteen, the skull (particularly the orbit, in Hutchinson's type) in eleven, the opposite suprarenal gland in nine, the peritoneum in seven, the brain in five, the lymphatic glands, especially the aortic, bronchial and mesenteric glands in fourteen, the pancreas, heart, mediastinum and ribs in three, the spleen, intestines and diaphragm in two, and the ovary in one case.

The most common subjective symptom of which these patients complained, and the first to appear, was weakness. This was present in about 33 per cent. of the foregoing cases, and was usually accompanied by loss of appetite and often by vomiting and diarrhea. Next to weakness, gastro-intestinal disturbances and pain were the most common complaints, each occurring in about 20 per cent. of this series. The latter occurs when the tumor has attained sufficient size to exert pressure on the surrounding structures. Unlike that



due to pathologic conditions of the kidney, the pain in suprarenal growths usually extends from the lumbar region upward toward the corresponding shoulder, and anteriorly across the abdomen.

The objective symptoms that were noted, in the order of their frequency, were these:

1. A tumor mass, which could be palpated, occurred in 38 per cent. of these patients. When the suprarenal growth has attained sufficient size, the kidney is usually displaced downward and laterally, and it is often possible to feel it in this position. When the suprarenal tumor is large, the kidney may often be felt as a distinct prominence on its surface. Because of its high position behind the ribs, palpation fails to detect a small tumor.

2. Pigmentation occurred in 20 per cent of these patients.

3. Loss of weight occurred in 12 per cent. of them.

4. Hematuria occurred in 9.5 per cent. The latter is much less common than in renal growths, a fact of significance in the differential diagnosis. When present, it is thought to be due to congestion caused by pressure on the renal vein.

5. Elevation of temperature occurred in 8 per cent. of the patients. It is thought to result from necrosis of the tumor.

6. Premature sex development, principally overgrowth of hair, occurred in 8 per cent.

7. Pus, albumin or casts in the urine occurred in 7 per cent. These findings, pointing toward pathologic changes in the kidney, tend to make diagnosis more difficult.

8. As previously mentioned, a flattening and elongation of the corresponding renal pelvis, disclosed by roentgenograms of the injected kidney, was found in our case. This obviously indicates involvement either of the kidney or of some immediately adjacent structure.

Keeping the foregoing subjective and objective symptoms in mind, a correct diagnosis should be made in an appreciable number of cases. As previously mentioned, the patient's only hope of recovery lies in early diagnosis and removal of the tumor before extension and metastases have occurred. Cases of successful extirpation have been reported.

In addition to surgical procedures, the preoperative and postoperative use of deep roentgen-ray and radium therapy should be considered.

Flood Building.

**Chronic Appendicitis.**—That chronic appendicitis may cause dyspeptic symptoms appears to have been first suggested in 1896 by Rutherford Morison.—Hurst, Guys Hospital Reports.

## PERIARTERIAL SYMPATHECTOMY

ALBERT E. HALSTEAD, M.D.

AND

FREDERICK CHRISTOPHER, M.D.

Senior Surgeon, and Assistant Surgeon, respectively, St. Luke's Hospital  
CHICAGO

In 1851, Claude Bernard discovered that, when the sympathetic nerve is cut in the neck of a rabbit, the blood vessels in the ear of the same side become very much dilated. He and other observers afterward demonstrated that, if the peripheral (head) end of the severed nerve is stimulated electrically, the ear becomes blanched, owing to a constriction of the blood vessels. Bernard also discovered a second class of nerve fibers, which, when stimulated, caused a dilatation of the blood vessels in the area supplied.

The vasoconstrictor nerve fibers belong to the sympathetic autonomic system, consisting, therefore, of a preganglionic fiber arising in the central nervous system and a postganglionic fiber arising from the cell of some sympathetic ganglion. These nerves form plexuses in the media of arteries and terminate in contact with the muscle fibers. While the terminations of the nerves are in the media, the adventitia, or externa, is spoken of as the nervous layer; for it is into and through this layer that the fibers must pass before entering the media. The adventitia consists of connective tissue, which is denser and contains more elastic fibers in its inner portion. A prominent layer of elastic tissue near the media is called the outer elastic membrane. In the larger vessels, the adventitia contains small nutri-

ent blood vessels, the vasa vasorum, which may penetrate the outer part of the media.

The recent work of Leriche<sup>1</sup> of Lyons has been of great interest and value to those endeavoring to treat vasomotor and trophic disturbances. Leriche has observed that, when the sheath of an artery is removed, one can see, just at the moment its external layer is pinched, that the vessel contracts, its pulse stops, and its size diminishes. If the cellular layer is excised, the diminution in size will progress to one third or one fourth of the normal size of the artery. After from three to fifteen hours, secondary signs invariably appear. These are: (1) elevation of local temperature from 2 to 3 degrees, giving the patient a subjective sensation of heat; (2) elevation of arterial pressure, which may be as great as 4 cm. of mercury, and (3)

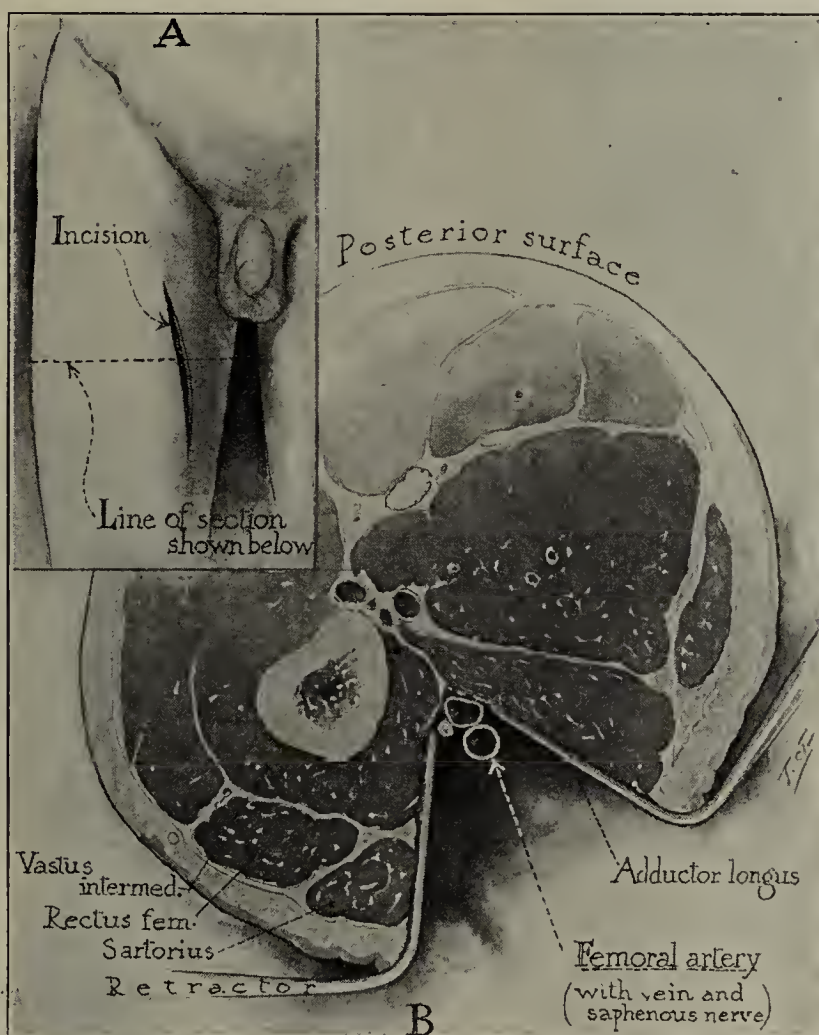


Fig. 1.—A, method of approaching the femoral artery; B, cross-section of thigh, showing relationship of femoral artery.

1. Leriche, René: Tr. Am. Surg. A. 39: 471, 1921.



increasing amplitude of oscillations. Leriche says the vasodilator reaction is transitional after periarterial sympathectomy; becomes attenuated from the fifth and sixth day, and disappears after from three to four weeks.

Leriche's operation has been to isolate from 8 to 10 cm. of the artery. The sheath is divided and, with one

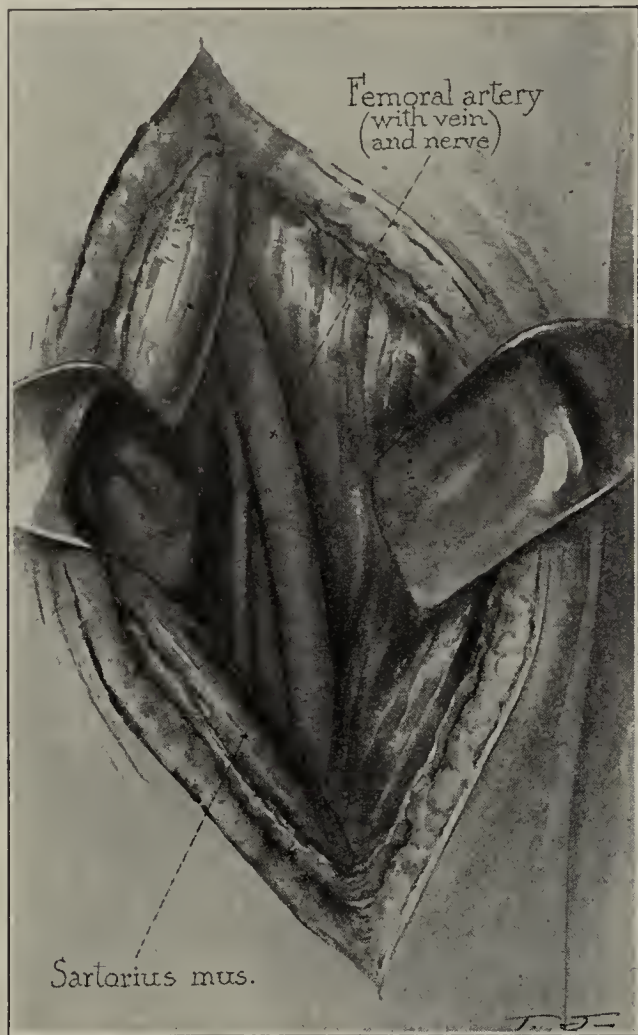


Fig. 2.—Exposure of femoral artery.

part held by forceps, the tunica adventitia is dissected away with either a knife or a cannular sound, until the vessel has been completely denuded. This procedure does not injure the main artery wall. Leriche has performed the operation 64 times; in 11 cases of causalgia or equivalent syndromes, 2 cases of painful stumps, 19 cases of posttraumatic contractures, 4 cases of large traumatic edemas, 1 case of trophedema, 4 cases of ischemic sequelae, 1 case of trophic sloughs on a stump, 10 cases of trophic sloughs after nervous section, 1 case of sore of the heel after medullary injury, 1 case of varicose eczema, 1 case of trophic trouble after frostbite, 1 case of spasmodic paralysis, 3 cases of an attempt to modify tension of the cerebrospinal fluid, 2 cases of jacksonian epilepsy, 1 case of goiter, 1 case of intermittent claudication and 1 case of erythromelalgia.

His study of cases leads him to believe that periarterial sympathectomy (1) is often very efficacious in painful phenomena; (2) will influence hypertonic symptoms of muscular phenomena, and (3) is very efficacious in trophic troubles which lead to ulcers.

Following is a case in which periarterial sympathectomy was performed:

#### REPORT OF CASE

*History.*—V. P., a sleeping car conductor, aged 55, was admitted to the medical service of Dr. Arthur R. Elliott, St. Luke's Hospital, Chicago, April 6, 1921. A tentative diagno-

sis of endarteritis obliterans was made by the admitting physician.

Six weeks previous to admission, the patient's right foot began to be painful and feel numb, and these symptoms had grown progressively worse. The pain radiated to the calf of the leg and the ankle felt weak. The patient was unable to walk more than half a block at a time; and, for the last four days and nights, the pain had been excruciating, preventing sleep. There had been no similar attack, and the foot had not swelled. The patient had typhoid fever and "soft chancre" at 17 years of age, but otherwise the history was negative. The family history was also negative.

*Examination.*—The right pupil was slightly larger than the left, and both reacted rather sluggishly to light and accommodation. The musculature of the extremities was fairly well developed. There was no paralysis, and no tenderness save in the right foot, which was painful when manipulated, and, to a lesser extent, in the right calf, on palpation. The body was otherwise that of a normal, healthy man.

April 9, the blood sugar was 0.091 per cent., the blood urea nitrogen 17.47 mg. per hundred cubic centimeters, and the total nonprotein nitrogen, 38.95 mg. per hundred cubic centimeters. The Wassermann reaction was clearly negative. There were 4,980,000 red blood cells and 10,050 white cells; hemoglobin, 90 per cent. The urine showed a faint trace of albumin, a few hyaline casts, no sugar, and an occasional leukocyte.

*Diagnosis.*—A diagnosis of endarteritis obliterans was made by Drs. Arthur R. Elliott and George W. Hall.

*Treatment.*—The patient was given 4 liters of Locke's solution daily by mouth and the duodenal tube, and hot formentations were applied to the foot. He made some improvement.

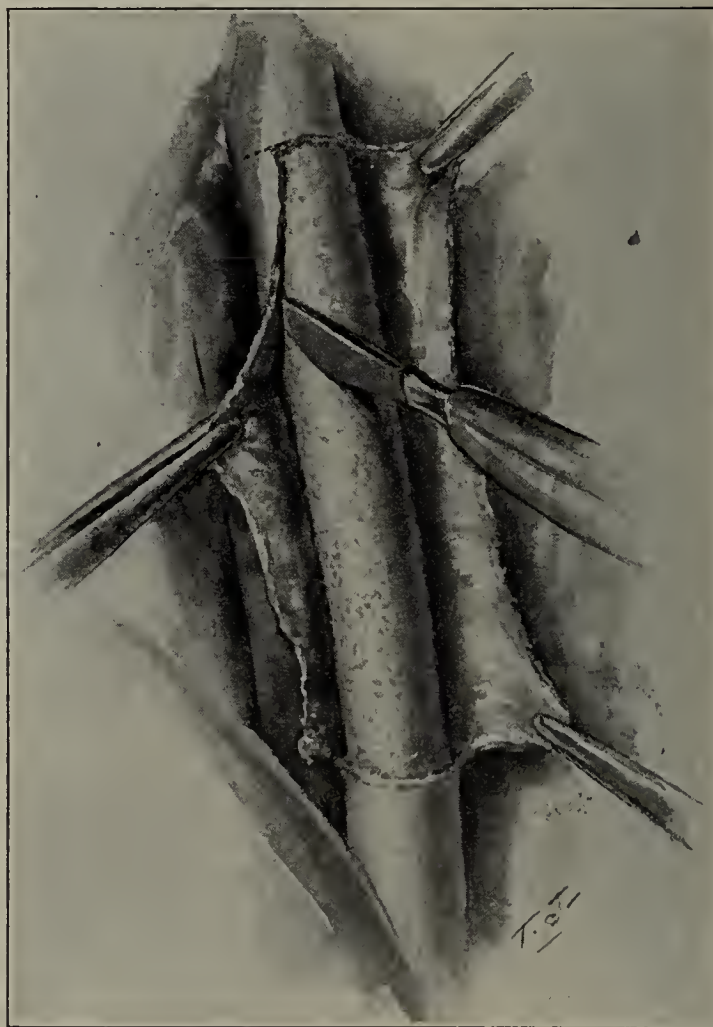


Fig. 3.—Method employed in removing the adventitia of the femoral artery.

April 26, he was given sodium citrate 120 grains (8 gm.); Locke's solution, 64 ounces (2 liters); potassium iodid, 30 grains (2 gm.); sodium bromid, 20 grains (1.3 gm.), and hydrated chloral, 5 grains (0.3 gm.). After a few days, the sodium citrate, sodium bromid and chloral were discontinued. May 1, nitroglycerin,  $\frac{1}{100}$  grain, every two hours for eight doses daily, was started, and was continued a week. May 17, thyroid extract, 5 grains (0.3 gm.) twice



daily was started, and, May 19, sodium nitrite, 2 grains (1.3 gm.), every four hours. May 27, the electric oven was tried on the foot, and nitroglycerin was substituted for sodium nitrite. June 4, massage of the leg was started. June 24, 300 c.c. of 0.5 per cent. sodium citrate was given, intravenously. The condition was unchanged throughout.

August 13, the patient was seen by Dr. Halstead, who advised an attempt at periarterial sympathectomy or an amputation. August 24, the patient was transferred to our surgical service.

*Operation.*—August 26, the femoral artery of the right leg was dissected out so that the junction of the middle and lower thirds was visible. The adventitia was incised with great care and stripped completely off for a distance of 5 cm. The wound healed rapidly and cleanly, and the patient was discharged on the thirteenth day after operation, September 8.

July 21, 1922, ten months after operation, the patient was admitted to St. Luke's Hospital for carbuncle of the neck. Operation of incision and drainage was carried out.

*Outcome.*—The patient is working as cashier in a restaurant and is on his feet most of the twelve hours that he is on duty. He is able to walk a mile or more. There is no pain in the leg except a slight one if he walks rapidly. Numbness, which was present at the time of operation, has practically disappeared. Before the operation, the patient was unable to do anything, and the pain was most severe when lying in bed. Now there is no pain. The general health is excellent. The leg used to be cold but gets warm in bed now. Tactile and thermal discriminations are normal. The scar is pale and the wound is cleanly healed.

30 North Michigan Avenue—Winnetka Bank Building.

## PNEUMOLITH OR BRONCHOLITH \*

HERBERT FOX, M.D.

PHILADELPHIA

The occurrence of pulmonary or bronchial stones coughed up with the sputum is not so common that the observation of a single case on a single occasion does not present data worthy of record. It so happens that just at the time of the appearance of an article on pulmonary calcification by Elliott,<sup>1</sup> two pieces of calcified matter were brought to me by a patient long a sufferer with chronic bronchitis.

The causes, distribution, composition and clinical evidences of pulmonary calculi are well brought out by Elliott,<sup>1</sup> by Wells,<sup>2</sup> by Norris and Landis<sup>3</sup> and by Kidd,<sup>4</sup> but there is no extensive collection of literature. I append to this short report a list<sup>5</sup> of the most important articles since Poulalion's thesis in 1892. A few are not listed because of their inaccessibility.

There are two principal varieties of pulmonary calcification: one that has its origin in a chronic or healed inflammatory area, tuberculosis being usually the cause, and one that is part of the pathologic changes in calcium and phosphorus metabolism whereby these salts are laid down at places of high acid concentration. The latter is a metastatic calcification. The former is usually localized or irregularly distributed, whereas the latter is more uniform and may be universal in the pulmonary tissue, blood vessels and serous membranes. It is also possible for stones to form in bronchiectatic cavities, around a nucleus of organic matter, especially if drainage from the dilatation is imperfect. The case

here reported may be explained on the basis of an old calcified tubercle ulcerating through a bronchus, or as a stone originating in a bronchus; from the roentgen-ray report, the former is more probable.

### REPORT OF CASE

A man, aged 60, was healthy, until at 30 he developed tuberculosis. This was arrested by a life of three years in the plateau region of the Rocky Mountains, after which he returned to city life, being engaged since then in active practice. He has always been very active in outdoor life as a farmer and hunter, crediting to this the preserved arrestment of the tuberculosis. About ten or twelve years ago he began to have repeated attacks of "grip" at irregular intervals, especially at the times he spent the winter season in Philadelphia. These attacks were accompanied by bronchitis, a condition that became confirmed after a few years. For the last four or five years there has been almost constant cough, with excessive mucopurulent sputum, which comes up in coherent masses. There has also been some hemoptysis, occasionally as blood streaking in the sputum, but more often as fresh clotted blood amounting to as much as 3 ounces. The free bleeding occurred with paroxysmal cough in the morning. In the winter of 1920 I examined the sputum, and found no tubercle bacilli, but large numbers of pneumococci and *Streptococcus equinus*. From this a vaccine was prepared and administered for eight treatments, there being after the first few doses distinct relief of cough and decrease of expectoration. The improvement was not maintained, and the treatment stopped. Examination revealed signs of a bronchiectasis, a diagnosis confirmed by roentgen ray. The roentgenogram revealed bronchiectasis on both sides, but larger in the right upper lobe bronchus. There were several dense shadows in both lungs which might be either calcified areas or fibrosis, and probably a few calcified glands at the hilum. Since this time the pulmonary condition has not improved materially, although life in the South during the winter and in the West during the summer has relieved the severity of the cough, and stimulated the general health. During the last two years the breathing has become more and more labored, amounting to distinct asthma on extraordinary exertion; the latter feature was better this fall because of the patient's careful life and because an easier state of personal affairs permitted more composure.

Physical examinations at repeated intervals during the last fifteen years have given virtually identical findings. Below the right clavicle down to the third interspace there has been slight retraction of the chest, impairment of resonance, and at times a suggestion of a tympanitic note. Breath sounds here have been harsh, but expiration has not been clearly tubular in type. Posteriorly, similar findings were obtained down to the midscapular level, but more distant from the ear. The abnormal signs were always more distinct at the third interspace than at the extreme apex. No diagnosis of bronchiectasis could be made unqualifiedly by physical examination, although this was suggested.

In September, 1922, the sputum was again studied bacteriologically, with the idea of determining whether any organisms present would give a sensitivity reaction by a skin test. The predominating organism was found to be a member of the hemorrhagic septicemia group, and this gave a moderate but still definite reaction when injected, beside a control, into the skin. Injection treatment was started with 25 million, an amount which gave no local reaction but produced decided malaise, the temperature going up to 99.2 F. (this man's thermometric record is always normal or below), slight increase of cough, which was not harassing, with easier expectoration. Because of the temperature rise, the foregoing dose was continued three times at intervals of five days with always the same result, though diminishing in intensity. Attempts at increasing the quantity had no good effect. After the second reaction the patient brought two fragments of calcareous matter coughed up during the night with mucus but not wholly enveloped by it. No especial effort was required to raise the stone. The patient thinks that they probably represent one stone broken by his teeth. The one retained as museum specimen is 4 by 3 by 2 mm., quite

\* From the William Pepper Laboratory, University of Pennsylvania.

1. Elliott, A. R.: Broncholithiasis, J. A. M. A. 79: 1311 (Oct. 14) 1922.

2. Wells, H. G.: Chemical Pathology, 1920, p. 468.

3. Norris and Landis: Diseases of the Chest, 1920, under Calcification of the Lungs.

4. Kidd, in Allbutt: System of Medicine 5: 338.

5. This list of articles is omitted in THE JOURNAL, but will appear in the reprints, a copy of which will be sent by the author on request.



irregular, rough and without faceting or capsule. The smaller piece on examination showed traces of calcium carbonate, calcium oxalate and magnesium phosphate; there was also a little organic matter. It is interesting to note that this man has maintained for several years that there was in his lung a foreign body, he being conscious of the presence of a peculiar sensation indicating the existence of something that should not be there.

## OTITIS MEDIA COMPLICATING OPERATIONS ON THE GASSERIAN GANGLION \*

HORACE R. LYONS, M.D.

ROCHESTER, MINN.

Otitis media complicating operations on the gasserian ganglion was first observed in the Mayo Clinic about three years ago, in a patient who complained of a sense of fulness and deafness following section of the posterior root of the gasserian ganglion for trifacial neuralgia. Since then, such observations have been made several times. This type of otitis media occurs from a few days to several weeks after operation on the gasserian ganglion. The chief complaint is a sense of fulness and deafness on the side on which the operation is performed. Otalgia is never severe, and is not a common complaint. Examination of the ears discloses a fulness in the inferior quadrants of the tympanic membrane, with more or less obliteration of the common landmarks. There is usually a fluid level, and a bubbling sound is heard with inflation of the eustachian tube. Two patients said that they had "water in the ear." The tympanic membranes were pale in each instance. In this condition, there also appear within the middle ear bleblike formations without evidence that the remainder of the cavity contains fluid. The tympanic membrane is gray or pink, and does not contain generalized fluid. It is flaccid or atrophic in appearance, is not intensely red, and never has the sense of resistance with the otoscope. Deafness, as tested by tuning forks, was of the conduction type and was not severe. The posterior superior wall of the canal did not droop.

In classifying the pathologic conditions in the middle ear in cases of otitis media, the question arises whether the fluid is exudate or transudate. Because of the close association and connections of the tympanic plexus in the mucous membrane of the middle ear with the branches from the gasserian ganglion, as described here, it is definitely established that the fluid is the result of an altered condition of the mucous membrane consequent to the operation. It is accepted that the operation results in a trophic disturbance in the mucous membrane of the middle ear, causing the collection of fluid. I believe that this type of otitis media is due to the secretion of the fluid; but the point cannot be definitely established. Animal experimentation as a means of investigation might have been feasible, except for the fact that the results of section of the posterior root of the gasserian ganglion in animals not suffering from trifacial neuralgia would not be parallel to those following a similar operation on patients with a definite disturbance of the sensory root, or of the gasserian ganglion, as in the cases here reported. It was therefore concluded that such investigation would not be of value.

In one case observed (Case 1), secretory otitis media followed alcohol injection of the posterior root of the ganglions. Spontaneous rupture and secondary infection, resulting in suppurative otitis media, occurred. It is also of interest that the posterior root was injected, since the neuralgia disappeared at once and cutaneous anesthesia followed.

In another case of secretory otitis media, not reported because the condition occurred several weeks after the patient went home, so that our information was not definite, suppuration occurred, but cleared up promptly. This man had a corneal ulcer, as did one other patient.

Abrasions of the cornea are not uncommon following operations on the gasserian ganglion; two of this series of patients had corneal ulcers. I am unable to determine whether such ulcers are due to trauma or purely to trophic local changes. Both causes may exist and possibly a combination of the two, namely, lowered local resistance due to the trophic changes, with subsequent trauma from dust and other foreign materials. Although goggles of the automobile type are worn by such patients postoperatively, trauma cannot be ruled out definitely.

In many respects, the picture of otitis media due to trophic disturbances following gasserian ganglion operations simulates herpes zoster otiticus, differing chiefly, however, in that pain is absent in the former and severe in the latter; also, the bleb formations on the pinna are absent in this form of otitis media.

### NERVE CONNECTIONS

Sensory and trophic nerve supply to the mucous membrane of the middle ear is abundant, and it is directly connected with the sensory root of the gasserian ganglion. The tympanic plexus in the middle ear also has direct connection with the posterior root of the fifth cranial nerve, the sphenopalatine ganglion and the cervical sympathetic nerves.

The sensory nerves to the external auditory canal are derived from the auriculotemporal branch of the trigeminus, and from the auricular branch of the pneumogastric. The latter, also known as Arnold's nerve, perforates the wall of the meatus, and supplies its lining membrane.

The posterior wall is separated from the mastoid process by the tympanomastoid fissure. The auricular branch of the pneumogastric nerve passes through this fissure to the posterior wall of the canal. The coughing, sneezing or vomiting that sometimes follows irritation of the canal, as from cleaning the ear, or examining it with instruments, is said to be due to a reflex effect on the pneumogastric nerve through this branch. The auriculotemporal branch of the trigeminus nerve enters into its supply, and may explain the earache that occurs in cases of cancer of the tongue or disease of the lower teeth.

The nerve supply of the tympanic membrane is derived chiefly from the auriculotemporal branch, supplemented by twigs from the tympanic plexus and by the auricular branch of the vagus. They accompany, for the most part, the blood vessels and, besides supplying the latter, form a subcutaneous and a submucous plexus. The tensor tympani and tensor palati muscles receive their nerve supply from the same source, namely, the trigeminus, through the otic ganglion.

The nerves supplying the mucous membrane of the tympanum are branches from the tympanic plexus,

\* From the Section on Otolaryngology and Rhinology, Mayo Clinic.



formed by the tympanic branch of the glossopharyngeal nerve, in conjunction with sympathetic filaments from the network accompanying the carotid artery. The tensor tympani muscle receives its supply from the trigeminus, the stapedius from the facial. Although the chorda tympani nerve has an intimate topographic relation to the space which it traverses close to the outer wall, it gives no filaments to the structures within the tympanum. The nerves of the eustachian tube are supplied from the tympanic plexus and from the pharyngeal branches of the sphenopalatine ganglion.

The tympanic nerve, or Jacobson's nerve, arises from the petrous ganglion and traverses a tiny canal in the osseous bridge between the jugular fossa and the carotid canal. Entering the tympanic cavity and receiving fibers from the carotid plexus of the sympathetic by way of the small deep petrosal, the tympanic nerve passes upward and forward in a groove on the promontory, and breaks up in this situation to form the tympanic plexus. After distributing filaments to the mucous membrane lining, the tympanic cavity and the associated air spaces (mastoid cells and eustachian tube), its fibers reassemble, and join with a filament from the geniculate ganglion, to continue as the small superficial petrosal nerve to the otic ganglion.

The branches of the tympanic nerve are the small superficial petrosal nerve, the branch to the fenestra ovalis, the branch to the fenestra rotunda, the branch to the eustachian tube, the branch to the mastoid cells, and the branch to the great superficial petrosal nerve.

The auricular branch of the vagus is given off from the ganglion of the root. It receives a filament of communication from the petrous ganglion of the ninth nerve, and follows the outer margin of the jugular foramen to an opening between the stylomastoid and jugular foramina. Entering this foramen, it traverses a canal in the temporal bone which crosses the inner side of the facial canal, and terminates between the mastoid process and the external auditory meatus. Leaving the canal, the nerve supplies the skin of the posterior part of the auricle and of the posterior inferior portion of the external auditory meatus. While traversing the temporal bone, the auricular nerve communicates with the facial and, after reaching its arc of distribution, with the posterior auricular nerve.

The communicating branch of the facial nerve to the tympanic plexus traverses a tiny canal in the temporal bone to reach the tympanic cavity, where it joins the main continuation of the tympanic plexus of the glossopharyngeal to form the small superficial petrosal, and proceeds to the otic ganglion, which it enters, as a sensory root. The fibers from the tympanic plexus, probably secretory in function, are distributed from the otic ganglion to the parotid gland.

#### REPORT OF CASES

CASE 1.—Mr. S. A. H., aged 48, complained of severe pain throughout the left side of the face, which was recognized as trifacial neuralgia. July 28, 1922, the patient was relieved by a preliminary alcohol injection of the sensory root of the fifth cranial nerve. He returned in about two weeks for recurrence of the severe pain. Examination of the ears was negative. August 10, a gasserian ganglion operation was performed on the left side, the posterior root being cut. Three days after operation, the patient complained that his left ear felt full. This feeling persisted, with slight deafness.

Examination revealed the right ear to be normal; the left tympanic membrane was pale; the lower quadrants were bulging, and the upper were normal. Motion of the tympanic membrane with an otoscope confirmed the patient's suspicion

that there was water in the ear, because the fluid could be seen to move. Changing the position of the head changed the relation of the fluid level to the ear landmarks. Eustachian tube inflation caused a bubbling sound. Functional test of the hearing revealed a slight conduction type of deafness. There was no otalgia at any time. Paracentesis was not necessary, and the patient was dismissed from observation three days later. August 18, he wrote that symptoms of fulness and deafness were decreasing. The fluid level was lower.

CASE 2.—Mr. W. B., aged 48, had typical trifacial neuralgia. The ears were normal. Three alcohol injections were given on the right side, May 28, Dec. 15 and Dec. 19, 1921, respectively. The last injection afforded relief, but the patient had a sense of fulness and deafness in the right ear. The ear ruptured spontaneously, and a thin, watery fluid escaped. No further treatment was necessary. December 29, a gasserian ganglion operation was performed, the right sensory root being sectioned. Three days later, before the primary dressing was changed, the patient complained of slight pain in the right ear, soon followed by a spontaneous discharge of clear fluid.

Examination revealed a pale tympanic membrane, slightly full in the lower quadrants, with a posterior inferior perforation, and a thin fluid pulsating through the opening. This clear fluid became definitely purulent on the following day, by secondary infection. Slow but steady improvement ensued. Jan. 14, 1922, when the patient was dismissed from observation, the tympanic membrane was retracted and the perforation healed, and subjective and objective symptoms had entirely disappeared.

CASE 3.—Mr. F. N. B., aged 65, had trifacial neuralgia. Preoperative examinations revealed normal ears. July 30, 1921, the right sensory root of the gasserian ganglion was sectioned. About nine days later, the patient complained of fulness and slight deafness in the right ear.

The typical pale membrane, with slight fulness in the lower quadrants and the slight deafness typical of the condition, was present. There was no otalgia; paracentesis was not considered necessary. The patient was seen daily, and the ear rapidly cleared. He also had a corneal ulcer in the right eye which was typical in its resistance to local treatment. Further trauma was eliminated by the use of a glass eye-shield.

CASE 4.—Mr. T. E. G., aged 68, had a right gasserian ganglion operation for trifacial neuralgia, May 19, 1921. The sensory root was cut. The findings in the ears were negative. The patient was dismissed from observation without complications. However, a letter from his home physician reported that he had subsequently developed right otitis media, which spontaneously ruptured and became secondarily infected. He also developed a right corneal ulcer. Both resisted local treatment. A later letter, December 19, stated that both the ear and the eye were almost cured.

#### COMMENT

Four other cases belong to this series, but, since a personal examination was not made, they are not incorporated in this report. Case 1 was typical in every detail, and most interesting. It should be noted, however, that all the patients had complete relief from the pain after operation. They also had cutaneous anesthesia over the surface supplied by the posterior root of the ganglion. It should be noted, further, that two of the four patients had trophic disturbances in the form of secretory otitis media and corneal ulcer. This again brings up the question of the factor of trauma in these cases of postoperative corneal ulcers.

#### SUMMARY

1. Secretory otitis media following operation on the gasserian ganglions is an entity. It is probably due to trophic disturbances in the mucous membrane of the middle ear.



2. The nerve connections between the gasserian ganglion and the mucous membrane of the middle ear are abundant.

3. The ear and eye complications are always on the side on which the operation is performed.

4. Trauma, as an etiologic factor, is eliminated so far as the ear is concerned, and this gives further basis to the argument that the corneal complications are entirely trophic in origin.

5. The process may be similar to that occurring in a herpes zoster otiticus.

## SPASMODIC FORCED RESPIRATION AS A SEQUEL OF EPIDEMIC ENCEPHALITIS

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The protean character of the sequelae of epidemic (lethargic) encephalitis has come to be well recognized as evidence of its involvement of almost any part of the brain or spinal cord. Its syndromes are legion, and it bids fair to rival neurosyphilis as a waste basket for the vagaries of neurologic diagnosis.

During the last year, certain disturbances of the respiratory mechanism have come under my observation as a sequel to epidemic encephalitis, which have resulted clinically in disorders of breathing of a very bizarre nature. In each instance, the symptoms have conformed to the same general pattern, but there has been a different coloring as far as the individual respiratory difficulty was concerned.

We are all familiar with the dyspnea that accompanies respiratory or cardiovascular diseases, the toxemias and the well known Cheyne-Stokes respiration. Quite different in all their characteristics are those disorders of respiration to which encephalitis has given rise. These are more in the realm of disturbances of rhythm and amplitude than of rate, though tachyrespiria is also present.

The literature on this disease contains no histories of cases similar to those reported here, though several writers mention respiratory syndromes following encephalitis. Aronson<sup>1</sup> reports the case of a young child who developed a persistent rapid respiration, about 45 a minute, accompanied by certain character and psychic changes. Grossman<sup>2</sup> mentions in his review of the sequelae that three patients complained of difficulty in breathing without any pathologic condition in the lungs. Hoover<sup>3</sup> reports an unusual case of inspiratory dyspnea due to paralysis of the dilators of the nares, which was relieved by raising the nares. Barker<sup>4</sup> says that peculiar disturbances, such as tachypnea, irregular respiration and paroxysms of deep breathing, are seen, and specifically notes one of these cases which was accompanied by a tetanic attack.

This peculiar respiratory disorder varies considerably as to its time of onset, following the acute disease

in some instances in four months, in others more than a year. It does not begin suddenly, but gradually develops to a maximum point, where it maintains a fairly constant level.

The type of case described by Aronson has also been noted by me and is a type of respiration in which the rate is over 40 and the effort loud and labored, suggesting the panting of a dog.

The other cases, five of which have come under my observation, are different, in that there are intervals of normal breathing interspersed with occasional outbursts of abnormal respiration. Without any premonitory feelings other than, perhaps, slight dizziness, the patients complain that they feel compelled to take a deeper breath; that something is compressing the lower chest which interferes with adequate depth of breathing. The breathing, therefore, suddenly becomes deeper and more rapid, usually between 40 and 45 a minute. The effort is marked, inspiration being voluntarily long and deep, with all the accessory muscles called into play. Expiration is also voluntary and labored, frequently ending with a noticeable grunt. During these spasmodic paroxysms, the mental attitude is obviously one of distress and anxiety, suggesting that which is sometimes seen in vagal attacks, and is concentrated on the difficult breathing. Conversation is avoided, and, if the breathing is voluntarily interrupted, the succeeding respirations appear to be more violent, as though to compensate. There is marked restlessness accompanying the paroxysms; the patients become uneasy; the hands are clenched and unclenched; the musculature throughout the body may become tense and rigid; often they lie down, sit up, stand up and then bend forward or backward, depending on the impulse of the moment.

Weakness predominates during the attacks, and, if standing, the patients will lean against the wall, assuming unusual postures. Yawning is a frequent accompaniment. A child showed psychic acceleration with the attack; another patient, marked depression; while in two the attack seemed to terminate in a slight transient cyanosis accompanied by a period of apnea. One of the two, during the height of the attack, arched his back, clenched his hands, and appeared about to have a true convulsive attack. There were, however, no clonic movements and no loss of consciousness at any time, though noticeable pallor, followed by cyanosis and irregularity of the pulse, were present.

These attacks terminate as abruptly as they begin, usually after from five to fifteen minutes' duration there being none of the crescendo, diminuendo quality noticeable in the Cheyne-Stokes respiration. Their frequency is variable, occurring three or four times a day, and often just before sleep at night.

The paroxysms are increased by any emotional stimulus, and also by inactivity; for when the mind is diverted or exercise is being taken, they do not seem to be initiated.

These attacks are likely to be free from other physical signs, though the heart rate was shown by the electrocardiograph, in one case, to exhibit a marked sinus arrhythmia, and in the most severe case there was a temporary loss of the pulse in the wrist at the height of the attack.

The inevitable diagnosis in all these cases had been hysteria, but all except one patient, on careful questioning, gave a clear-cut history of a febrile disease, with perversion of sleep and other localizing intracranial signs.

1. Aronson, L. S.: Encephalitis with Unusual Sequelae, *Neurol. Bull.* 3: 113 (March) 1921.

2. Grossman, Morris: Sequels of Acute Epidemic Encephalitis, *J. A. M. A.* 78: 959 (April 1) 1922.

3. Hoover, C. F.: Inspiratory Dyspnea Due to Paralysis of Dilators of Nares Following Acute Infectious Meningo-Encephalitis, *J. A. M. A.* 78: 966 (April 1) 1922.

4. Barker, L. F.: Sequelae of Epidemic Encephalitis, *New York State J. Med.* 22: 251 (June) 1922.



Two of the patients showed as residuals the familiar thalamic facies, staring eyes with lack of emotional tone and tendency to the mask. They also showed pupillary irregularities, and one, a persistent insomnia.

Therapy in these cases was of no avail, though one case was improved by moderate doses of phenobarbital (luminal).

#### REPORT OF CASE

*History.*—A. W., a man, aged 22, single, seen June, 1922, had had a severe head cold in February, 1921, which made him feel quite sick but did not put him to bed. During and after this illness he had some tendency to prolonged sleeping, which, after several months, turned into a partial sleep inversion. This had persisted off and on up to the time of examination, the patient falling asleep readily during the daytime, but suffering from insomnia at night, often reading the whole night. At the termination of this acute illness, he began what at first was considered a habit of coughing, which had persisted until the present time. The breathing was forced and labored, coming on rather rhythmically in paroxysms of five minutes' duration, with about five minutes' intermission. It was inhibited by diverting the mind and by taking an interest in something, while any emotion intensified it. The attacks were characterized by rapid, deep respiration, chiefly through the mouth, with some distortion of the facial expression, and the use of the accessory respiratory muscles. Expiration was forced and accompanied by a noisy coughlike grunt. Extreme fatigue followed each paroxysm.

There was a period of several months about a year after the acute illness when he was bothered by excessive perspiration, and during the past year he had had no ambition or "pep." Activity was an effort, and he desired to sit around all day. He had done no work, and was inattentive and forgetful. His family had noticed that he stared more, and that there was a change in his facial expression. There was at no time diplopia, myoclonia or pains.

*Examination.*—This revealed widening of the palpebral fissures, producing some strain of the eyes, with a noticeable blankness of expression and emotional play over the face, especially the upper part (thalamic facies). There was no impairment of voluntary movement. The pupils were slightly unequal, but regular in outline and reacted to light and accommodation. Other than the respiratory difficulty described in detail above, the patient was free from physical signs.

*Summary.*—This case presents a typical but definite history of an acute epidemic encephalitis, with acute onset and some lethargy, followed by inverted sleep mechanism, thalamic involvement, as seen in the facies, retarded physical activity (movement), and evidence of autonomic disturbance in the period of excessive perspiration and the paroxysms of forced respiration.

#### COMMENT

It seems almost impossible, with our present knowledge of the respiratory mechanism, to postulate a localization for this interesting autonomic disturbance; but it is unquestionably rhythmic and automatic, two functions usually attributed to that system. Its freedom from medullary signs would rule out the bulb as the site of the lesion.

The marked emotional element in these attacks, the psychomotor excitation, the disturbance of the sleep mechanism and the ironed out facies predicate an unquestionable thalamic lesion.

Von Monakow recently described in detail his conception of a continuation of the sympathetic chain up through the pons to the thalamus, where it has a large nucleus, and thence to the postparietal cortex as its end station. Under the influence of such data and knowing the numerous other autonomic sequelae of encephalitis, we can suggest for future observation a center in or near the thalamus which is part of the respiratory functional control, this seeming particularly

to regulate its rate and rhythm. It seems possible that it is such a function which is diseased in this unusual postencephalitic respiratory syndrome.

NOTE.—Since this article was written, there has been reported<sup>5</sup> a series of five cases with a postencephalitis respiratory syndrome. These occurred in children, and unquestionably describe a clinical syndrome similar to the one that I have described in adults.

74 West Forty-Eighth Street.

## Clinical Notes, Suggestions, and New Instruments

### A UNIQUE CASE OF COEXISTENT TUBERCULOSIS AND SYPHILIS IN THE GENITAL TRACT

DAVID M. P. MAGEE, M.D., LONG BRANCH, N. J.

Urologist, Monmouth Memorial Hospital

The fact that tuberculosis and syphilis frequently coexist in a patient is attested by experience.

#### REPORT OF CASE

*History.*—J. S., a colored man, aged 48, a laborer, single, admitted to the urologic service, Aug. 3, 1921, complained of swelling in the left inguinal region of two months' duration, starting with swelling in the corresponding testicle and traveling to the groin.

*Physical Examination.*—There was a swelling in the left inguinal region about the size of a small egg, indurated in character, with a slight amount of tenderness present. There was slight involvement of the neighboring gland on each side of the swelling. The left testicle felt normal, but the epididymis was enlarged, hard and somewhat tender, with distinct small nodules on the vas, which also felt thickened. The right testicle was involved in a small mass, and presented several small distinctly nodular spots on its surface. The epididymis on this side seemed also to be involved, but the vas did not feel nodular and was not much thickened. The patient's temperature varied from 98 to 99 F. The urine showed albumin, a few hyaline casts with an occasional cylindroid, and a few leukocytes, with some epithelial cells. No tubercle bacilli were found. Blood examination revealed: hemoglobin, 85 per cent.; color index, 0.77; red blood cells, 5,500,000; white blood cells, 7,200; small lymphocytes, 25 per cent.; large lymphocytes, 11 per cent.; polymorphonuclear neutrophils, 59 per cent.; eosin, 4 per cent.; basophils, 1 per cent.; Wassermann reaction, four plus. A roentgenogram of the chest revealed considerable widening of the aorta in the region of the arch, and lung infiltration of the right apex.

A working diagnosis was made of bilateral tuberculous epididymitis, with probable extension into the right tunica vaginalis.

*Operation.*—On the ninth day after admission, the left side was operated on, an epididymovasectomy with enucleation of the enlarged inguinal gland on that side being performed. The epididymis was hard, enlarged and indurated. The testicle was soft and rather friable, and the vas was thickened and slightly nodular. During the attempt to dissect the inguinal gland, it ruptured, and about half a dram of purulent material flowed out. The gland itself was tightly adherent to the surrounding structures. At this stage, the patient did not appear to be doing well, so the right side was left for future operation. The epididymis, inguinal gland and vas were sent to the laboratory, and a diagnosis of tuberculous epididymitis was made.

*Course and Treatment.*—Convalescence was uneventful except that it was somewhat protracted by the discharge from and breaking down of the wound in the inguinal region. The patient returned home, September 3, with the intention of returning later for operation on the right side. Anti-

5. Parker, H. L.: Disturbances of the Respiratory Rhythm in Children: A Sequela to Epidemic Encephalitis, Arch. Neurol. & Psychiat. 8: 630 (Dec.) 1922.



syphilitic treatment was begun in the urologic clinic, September 10. Up to the time of his readmission for the second operation, he had received six intravenous injections of neo-arsphenamin, 0.6 gm. each, and two intramuscular injections of mercuric salicylate, one of one grain and one of one-half grain.

This treatment was interrupted after October 21, because the patient failed to return.

**Second Operation.**—December 6, he was readmitted to the ward, complaining of pain in the right side of the scrotum, which was rather sharp at times. Otherwise, he felt quite well. The physical findings were the same as before, except for the scar of the first operation. The next day, the right testicle, epididymis and cord were exposed and removed, along with an old fistulous tract leading from the lower pole of the epididymis to the skin surface on the anterior portion of the scrotum. The vas deferens was thickened and the epididymis nodular. The testicle on section had a fibro-gelatinous appearance. There were several small cysts, which resembled blebs, on the surface of the testicle. These contained straw colored fluid. On laboratory examination, the testicle showed chronic productive interstitial inflammation

I should like to call attention to two things which were discovered on examination: (1) probable involvement of the right lung at the apex, as developed by the roentgenogram, probably a tuberculous process, which may have been the forerunner of the genito-urinary tuberculous condition, and (2) the presence of the sinus, which communicated with the surface of the scrotum on the right side. This was entirely healed, but would lead one to suspect tuberculous involvement on that side. To offset this, there was the pathologist's report, which nowhere mentioned tuberculosis in connection with the material sent him, which consisted of the entire removed specimen.

148 Broadway.

#### THE TECHNIC OF A KNOT

WALTER J. SULLIVAN, M.D., CHICAGO

The accompanying illustrations present the technic of a knot which I have been using for the last two years. A short piece of catgut can be used in the tying of the knot, and a reef or flat knot can be accomplished by the technic, as



Successive steps in tying knot.

with hyalinization of the seminiferous tubules, characteristic of syphilitic orchitis. There was dilatation of the epididymis tubules, and regenerative hyperplasia of the efferent ductules and of the interstitial cells also characteristic of syphilis. The diagnosis was syphilitic orchitis.

**Outcome.**—An uneventful recovery ensued, and the patient was discharged about December 22, reporting to the clinic on the 23d and continuing treatment until March 3, 1922, during which time he received eleven intravenous injections of neo-arsphenamin, each 0.6 gm., and eight intramuscular injections of mercuric salicylate, each one-half grain. During this time, he had two more Wassermann tests, one, Dec. 30, 1921, two plus, the other, March 3, 1922, four plus.

He has not returned for further treatment, but has been seen by me several times since last March. To all appearances, he is doing well, having gained in weight noticeably. As far as I know, he is doing his usual work.

#### COMMENT

Here we would seem to have a pure tuberculous process on the left side and a pure syphilitic process on the right side. It is this feature of the case which makes it of more than passing interest.

illustrated. A strand of catgut or linen from 6 to 7 inches in length can easily be used, and the accompanying results obtained.

As far as I know I have not seen this particular technic illustrated anywhere, and in reply to my inquiries many men who have done quite a bit of technical work state that they have not seen it in print or in any illustrations.

Frequently small pieces of catgut are left from suture material, and these can be utilized to tie the knot. Long strands of catgut, as illustrated here, do not work as well as short strands.

2550 Prairie Avenue.

**Physician Versus Cobbler.**—The *Deutsche medizinische Wochenschrift* quotes a letter in the daily paper from a physician who wrote that he had just been paid by the insurance society for his medical services for the last three months, and his fees included one for medical examination and six office treatments of a certain shoemaker at 12 marks each, total 72 marks. The same day, the shoemaker returned to him a pair of shoes he had been repairing, with the bill, 1,000 marks.



## METHOD FOR PREPARING BLUE CELLULOID INJECTION MATERIAL \*

JOHN ALBERT MARSHALL, D.D.S., PH.D., SAN FRANCISCO

This note refers to those anilin dyes which may be used for coloring specimens prepared by the celluloid injection method.

In a study of the anatomic relations of the salivary glands, it became of interest to inject simultaneously the gland substance through the excretory duct, and the arterial blood supply through the common carotid artery. The red dye used for the injection of the arteries is the usual substance employed for this purpose, namely, alkanin. This material in various dilutions does not afford a sufficient contrast for the study and comparison of the small excretory ducts and the capillaries. The gross relationship is more clearly indicated when two colors are used. The difficulty seems to be due to the necessity of macerating the injected specimens in concentrated hydrochloric acid, and subsequently washing away the debris. In this manner, the injected masses are freed from the overlying hard and soft tissues. A search of the literature failed to find a description of any blue dye which would withstand the action of the concentrated hydrochloric acid. The color of alkanin is not changed during digestion, but apparently no blue dye has been described with properties identical in this respect to the red dye.

A combination of dyes may be used, however, which, although temporarily discolored by concentrated hydrochloric acid, regains a distinct hue when washed in water. Such dyes are, for example, crystal violet and brilliant green. A 10 per cent. solution of both of these dyes is made in acetone and used for coloring the celluloid preparations. Subsequent digestion of the injected material by means of concentrated hydrochloric acid decolorizes the dye temporarily. When digestion is complete and the injected mass washed with water, the color returns.

The great advantage of these dyes is apparent in experimental work requiring simultaneous injection of different systems or of different structures.

## REPORT OF CASE OF OBSTRUCTION TO INTESTINE DUE TO ASCARIS

W. P. BAUGH, M.D., ALBANY, ALA.

In this case *Ascaris lumbricoides* caused an obstruction of the small intestine, necessitating resection.

Miss R., aged 36, referred by Dr. Mouldon Smith of Ardmore, Tenn., was admitted to the Benevolent Society Hospital at Albany, Ala., Nov. 6, 1922, with intense pain in the abdomen, in the right hypochondriac region. She was poorly nourished, was suffering great shock, and presented all the symptoms of an intestinal obstruction.

The history was negative except that she had had several attacks of pain in the abdomen for the last two years which had been diagnosed as subacute appendicitis.

A median abdominal incision was made. When the abdominal cavity was entered a considerable portion of the ileum was seen to be collapsed, with a definite line of demarcation at each extremity, with beginning gangrene. A large mass was observed; radiating from this mass, there were cordlike structures in the intestine extending from both sides of the mass.

The diagnosis of *Ascaris lumbricoides* was made, and approximately 70 cm. of the ileum removed at its middle third. An end-to-end anastomosis was performed.

In the removed section of intestine there was a large mass of *Ascaris lumbricoides* consisting of nine worms matted together, the longest one measuring 27 cm. and the shortest one 12 cm. The largest of them was dead, and the others were wrapped about it.

The patient was dismissed from the hospital, November 21, after an uneventful recovery.

\* From the George Williams Hooper Foundation for Medical Research, University of California Medical School.

## Special Article

## THE CARE AND FEEDING OF INFANTS

(Continued from page 109)

[NOTE.—This is the third of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—Ed.]

## MIXED FEEDING AND WEANING

The main indications for mixed feeding are: 1. To furnish sufficient food to meet the infant's needs when the mother's supply becomes inadequate. This is best accomplished by *complemental feeding* by the administration of cow's milk mixture after a limited period on the breasts. 2. To relieve the mother of one or more breast feedings to provide for her recreation. 3. To teach the infant bottle feeding in the preparation for emergencies. The two latter conditions will necessitate replacing breast by bottle meals. These are known as *substitute feedings*. Whichever of these two methods of extra feeding is adopted, the all important question to be answered for the mother is what foods and how much of them shall be given to replace the breast milk. It has been stated that average infants will require amounts approximating 2½ ounces (75 c.c.) for each pound of body weight, of breast milk in twenty-four hours.

It is necessary to weigh the infant before and after nursings for one or more days to obtain a fair idea of the amount of cow's milk mixture that it will be necessary to administer in cases of underfeeding at the breast. Example: Given a normal infant weighing 10 pounds (4.5 kg.), the food value of 25 ounces (700 c.c.) of breast milk should be approximated (one sixth of the body weight). Comparative determinations of human and cow's milk show, on an average, fat, 3.5; protein, 1.5; carbohydrate, from 6 to 7.5 in the former, and fat, 4.0; protein, 3.5; carbohydrate, 4.5, in cow's milk.

Clinical experience has taught us that most infants will thrive on artificial mixtures approximating the food values contained in breast milk. Roughly, 1½ ounces (45 c.c.) of cow's milk to which ¼ ounce (3 gm.) of sugar (cane or milk) and 1 ounce (30 c.c.) of water has been added, will meet the requirements for each pound of body weight (0.54 kg.).

It is a safe and rational plan to think of the infant's needs in grams of fat, protein and carbohydrate for each pound of body weight. The breast-fed infant receiving 2½ ounces per pound receives, fat, 2.6; protein, 1.1, and carbohydrate, 5.0 gm., daily for each pound of body weight. These values are approximated by 1½ ounces of cow's milk with ¼ ounce of sugar and 1 ounce of water added (fat, 1.8; protein, 1.57; carbohydrate, 5.0). Example: A 10-pound infant receiving 15 ounces of breast milk is receiving 2½ ounces for each 6 pounds of his body weight, and will require in addition the equivalent of 2½ ounces of breast milk for each of 4 pounds of body weight, which can be supplied by 6 ounces or one and one-half times four of cow's milk, and ¼ ounce of sugar.<sup>6</sup> To meet

6. Two level tablespoonfuls of cane sugar equal 1 ounce; 3 level tablespoonfuls of milk sugar equal 1 ounce.



his water requirements, the mixture should be made 10 ounces, adding 4 ounces of boiled or cereal water.<sup>7</sup>

The cow's milk mixture can be divided into equal parts to be given from the bottle as complementary feeding following the breast nursings.

The exception to these food requirements is the thin infant whose substitute feedings must approximate the requirements of his full weight for his age. It is to be remembered that small *fat* infants require less total food than large infants of the same age. (Further details for artificial feeding will follow.)

*Food Other Than Milk Mixtures.*—Most infants may be given small quantities of orange juice during the third month of life, even though they are exclusively breast fed. During the fourth month, small quantities of well-cooked cereals can be started, and during the early part of the second half year a vegetable and meat broth may be started to advantage. These additions may be made to the diet even when the breast milk supply is sufficient to meet the caloric requirements. Besides rounding out their diet, they prepare the infant to meet the emergencies of a diminishing breast-milk supply.

#### WEANING

Weaning should always be done gradually, when possible, for the sake of both mother and child. The first months in the life and development of a child are the most critical period. Weaning at this time is a serious matter. A well baby after he is 6 months old can, as a rule, be successfully weaned when necessary, if it is properly done. However, at least part breast feeding should be continued throughout the next three months, or even longer, if possible, depending on the infant's health, the season and the other circumstances. When a mother cannot give her infant at least two satisfactory breast feedings daily, it is advisable to wean the child.

Sometimes a baby cannot take cow's milk; in such a case milk from a goat may be tried. This has been of great value in some cases of exudative diathesis.

As a rule, the trouble in weaning is not because the infant cannot digest cow's milk, but because the change is made too suddenly or the food given at first is not properly adapted to the infant.

In cases of sudden weaning, the food must be weaker in the beginning than for an artificially fed child of the same age. If weaned at 6 months, the infant should be put on a mixture for a child of 2 or 3 months, and the same rule applies for older infants. When the infant becomes accustomed to cow's milk, the strength can be gradually increased.

By gradually changing this way from breast feeding to bottle feeding, weaning can usually be completed in two weeks without upsetting the baby. It is very seldom necessary to wean in a shorter time than this and there is every reason to wean gradually so as to prevent any disturbance. Rarely should breast feeding be continued past the first year.

The fear of the laity of the "second summer" is well founded when dirty milk and other improper foods are fed promiscuously; but with clean, certified and sterilized milk and properly prepared soft foods the dangers of the summer heat are minimized. It should be the rule to underfeed rather than overfeed in hot weather; during the extreme hot spells the diet may well be reduced by one third or even one half.

#### THE PHYSICIAN

It is necessary that the medical adviser, in order that maximum breast feeding may be maintained, shall impress on his patient that the instances in which the mother's milk will not agree with her own baby are very rare; that the first few days and weeks form the most critical period in the nursing history, during which the mother and the infant are adapting themselves to each other. During this period there is great danger that the distress and lack of gain in weight due to underfeeding may be misinterpreted as improper feeding. The scale used for measuring the twenty-four hour intake, by weighing before and after each feeding and the estimation of the gain in weight over given periods of time, must be the determining factors for the institution of complementary feeding. In order to establish a maximum milk flow, both breasts should be given at each feeding, but at not too short intervals, and if other food is necessary it should be given after the nursing and not in place of a nursing. Such a procedure will result in a maximum stimulation. When, through any cause, the infant is unable properly to stimulate the breasts, regular expression should be practiced. Mothers are to be taught that lactation can be reestablished even after the baby has been off the breast for some time.

In private practice, in order to obtain the maximum breast feeding, it is necessary that routine consultations with the mother be inaugurated. These should begin shortly after the baby is born, by personal instruction to the mother as to the best means of promoting her breast milk supply through proper hygiene and diet, on her own part, and regular stimulation of her breasts by the baby or by expression of milk or a combination of these methods. When the activities of the physician do not permit such instruction it should be given by a trained nurse or some one who has had practical experience along these lines.

In not a few instances, even in the presence of good breasts, during the first few weeks the breast milk supplied by the mother will not meet all the requirements of the infant, and occasionally this period of insufficient supply may run into the second month. In all such cases complementary<sup>8</sup> feeding becomes necessary. With improvement in the mother's general health and her assumption of her normal activities, the breast milk supply increases, and repeatedly we have seen what at first seemed a hopeless case for complete breast feeding develop into one in which the infant could be supplied with all of its needs until the time arrived at which mixed feeding was the diet of choice. Such cases are especially common among the very young and old primiparas, and these are the ones who require the greatest amount of encouragement.

It therefore becomes the duty of the physician, in order that the mother may assume her full responsibilities toward her infant, to see the infants in their practice at regular intervals during the period of lactation. Weekly or bimonthly consultations during the first month, and monthly visits during the remainder of the nursing period are not only to be recommended but in many instances are imperative for the best interests of the infant. Breast feeding is rarely considered a burden by the young mother when the four-hour nursing period has been established, and in case of emergency it is usually possible to express suffi-

7. One kilogram equals 2½ pounds; 30 c.c. (or 30 gm.) equals 1 ounce.

8. Complementary feeding is the administration of a bottle following a period at the breast; substitute feeding the replacing of a breast by a bottle feeding.



cient milk to satisfy infants, should it become impossible for the mother to be present at the feeding hour.

#### DISTURBANCES IN BREAST-FED INFANTS

Breast milk is a complete food and contains all the essentials of a well-balanced diet for the human infant. Notwithstanding the fact that there is a considerable difference in the chemical composition of milks from different sources, the average infant will thrive on them. However, nutritional disturbances are of common occurrence in the breast fed; and while, on the whole, they are less dangerous than similar disturbances in bottle-fed infants, they should receive early and serious consideration.

Those most commonly seen fall within one or more of the following groups: (1) underfeeding; (2) overfeeding; (3) congenital debility, with resulting impairment of the vital functions; (4) intercurrent parenteral (pharyngitis, tonsillitis, bronchitis, pneumonia, pyelitis, etc.), and enteral infections, and (5) idiosyncrasy toward mother's milk.

#### UNDERFEEDING

The diagnosis will be dependent on an estimation of the quality and the quantity of milk received by the infant. The clinical picture as presented by the infant is the predominating factor that leads the physician to an investigation of the underlying elements causing its lack of progress.

The quantity of the twenty-four hour supply is ascertained by weighing the infant before and after each nursing without change of garments. An accurate beam scale should be used. Most infants require from 2 to 2½ ounces (60 to 75 c.c.) of breast milk per pound of body weight in twenty-four hours.

#### SYMPTOMS

Dissatisfaction on the part of the infant with its individual meals is usually the first evidence of underfeeding. This is usually followed by restlessness and crying before the nursing time is due. Again, it may manifest its dissatisfaction by nursing greedily for a short time, releasing the breast and crying. In some instances it cannot be induced to remain at the breast because of the difficulty it encounters in obtaining its food after the first few minutes; or, on the other hand, there may be a tendency to prolong its feeding time. These symptoms are usually soon followed by a period of stationary weight or a loss in weight.

Usually the stools are normal in appearance, but small in amount, and give little evidence of the cause of the trouble. However, if the food supply is decidedly insufficient, we may have a positive evidence of the underfeeding by the appearance of the so-called "hunger stools," which are brownish or greenish brown and contain little fecal matter and much mucus.

If the condition is not corrected, the baby becomes weak and apathetic. The skin loses its turgor, its temperature becomes subnormal, it is pale and anemic and the fontanels become depressed and the abdomen sunken. Whenever there is room for doubt as to the cause of this group of symptoms, the scale will furnish the most positive evidence.

#### TREATMENT

The first step necessary in the institution of a rational regimen is to ascertain whether the fault is to be found in the mother or in the infant. On the part of the mother, it may be due to her physical

condition or lack of glandular tissue in the breasts. Or, again, the infant may have some deformity or infection of the mouth interfering with nursing, or it may be too weak to continue its nursing to the end. If the infant is not getting enough food, artificial food must be supplied, temporarily, as part of the diet.

Undue haste in removing the baby from the breast offers the greatest danger in the treatment of underfeeding and should be resorted to only when other means fail. The ability to increase the quantity of milk secreted by the average woman must necessarily vary directly with the quantity and quality of the glandular tissue composing the breast. However, to a certain extent at least, certain factors will more or less directly influence the quantity and quality of the secretion and they are worthy of our attention.

If the trouble is due to an actual insufficiency in the milk supply, careful attention must be paid to the hygiene of the mother. She must have plenty of rest and sleep, her surroundings must predispose to a happy frame of mind, she must not be overburdened with household cares and her exercise must be regular. If possible, she should be freed from all care of the baby at night. She should eat sufficient food and drink plenty of liquids. Every effort should be made to stimulate her appetite, so that she will take an abundance of milk and other nutritious foods; but she should not be forced beyond her natural appetite, even in the taking of fluids. The general rules previously mentioned for the mother's diet should be followed. An excessive diet may be assimilated by the mother's body without increasing the flow of milk.

The diet recommended should be palatable to the nursing mother, as previously recommended.

Stimulating massage, combined with expression, may be applied to the breast in such a manner as to stimulate the whole gland. This can best be accomplished by two movements: By gently raising the whole breast from the chest wall and kneading it gently between the fingers, and by holding the breast against one hand and making circular movements against the periphery with the outspread finger-tips of the other hand and gradually working from its base toward the nipple.

Baths at a temperature comfortably cool (from 80 to 90 F.) should be taken daily to promote the mother's general health as well as cleanliness. These should be followed by a brisk rubbing with a coarse towel.

Steaming the breast by the application of hot towels covered with oil silk two or three times daily is of decided benefit.

Galactagogues are of questionable value. General tonics will often improve the digestion and tend to overcome anemia, and in this way improve the general health and thereby lactation. If after such methods the mother's milk is still insufficient, mixed feeding—part breast feeding and part bottle feeding—may be given for weeks or even months. One bottle feeding a day should be given in place of the breast, and the bottle should be given after each of the other breast feedings to make up the necessary amount. The baby should be encouraged to empty the breasts.

When part breast milk and part cow's milk is given, a well baby will usually have no difficulty in digesting the cow's milk. In case the baby is disturbed or sick, the bottle can be stopped for a few days and the diet limited to breast milk and boiled water. Carbohydrates can usually be added to the water to advantage, in the form of cereals and sugars.

(To be continued)



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SATURDAY, JANUARY 20, 1923

## PROGRESS OF CLINICAL CALORIMETRY IN THE UNITED STATES

The ready determination of the fundamental metabolic reactions in the body for the purpose of discovering pathologic conditions because of which the exchange of matter and the transformation of energy may be noticeably altered has been the goal of many investigators. Thanks to the development of clinical calorimetry, to which American investigators have contributed no small share, the estimation of the so-called basal metabolic rate has become a procedure adapted to accurate application in any well organized hospital or clinical laboratory. Only a few years ago, apparatus for this purpose was unheard of except in a few specially equipped laboratories for physiologic research in nutrition. Today, outfits for the study of metabolism at the bedside exceed the number of persons properly trained to apply the apparatus to its appropriate uses. The magnitude of the development and legitimate exploitation of these newer diagnostic resources of the medical sciences can best be appreciated from the report that a single clinic of repute is already in a position to report more than 25,000 measurements of basal metabolic rates on nearly 9,000 persons in the last five years,<sup>1</sup> while another hospital has already recorded metabolism studies in a series of 1,000 cases.<sup>2</sup>

The statistics thus rapidly accumulating are enabling those interested in the problems of metabolism to secure at least tentative answers to some of the questions still puzzling them. With respect to the technic of the measurements themselves, the need of insisting on suitable conditions for the analysis is well understood by those initiated into the fraternity of metabolism analysts. As an expert has recently remarked in discussing the temporary elevations of the metabolic rate so often encountered, nothing the subject does or fails to do, except deep sleep, can depress the metabolic rate,

whereas any slight disturbing condition, such as a headache, pain, discomfort, excitement, restless or uneasy sleep the preceding night, fear, movements, fever, surreptitious ingestion of food, or innumerable other factors may, in certain cases, cause an appreciable elevation. Technical errors, we are told further, are a much less common source of inaccuracy than failure to obtain the metabolic rate under absolute basal conditions. A basal determination is not obtained if the subjects fail to cooperate, or are nervous and worried over the procedure, as they are likely to be in the first test. Under such conditions the observed metabolic rate may be from 5 to 30 per cent. too high. Therefore, a first test with an observed metabolic rate between  $\pm 10$  and  $\pm 20$  per cent. will probably be lowered to within the normal limits of variation if the test is repeated a sufficient number of times to obtain a true basal metabolic rate.

What shall be the standard for comparison? Although food and activity are intentionally excluded from modifying the metabolism, account must be taken of age, sex and size. In examining the question of how the active protoplasmic mass, i. e., the metabolizing tissue, of the body can best be estimated, Boothby and Sandiford<sup>3</sup> have found that there is a remarkable agreement between the surface area calculated by the Du Bois surface area formulas and the formulas derived from Harris and Benedict's biometric correlation formulas for the prediction of the basal heat production. Hence the Du Bois formula for the determination of the surface area and the Du Bois normal standards of heat production for each square meter of body surface for age and sex are considered by them the best method at present available for predicting the normal heat production.

A tremendous interest attaches to the demonstration from the Mayo Clinic<sup>1</sup> that a high percentage of persons have normal metabolic rates according to the Du Bois standards, unless they are suffering from some specific disease characterized by an alteration in the basal metabolism. Boothby and Sandiford allege that the basal metabolic rate differentiates diseases into those with increased, normal and decreased metabolism as sharply as the temperature divides diseases into the febrile and afebrile groups. Out of several thousands examined, more than three quarters of all patients other than those with disorders of the thyroid had basal metabolic rates within the restricted Du Bois normal limits of  $\pm 10$  to  $\pm 10$  per cent.; 90 per cent. had basal metabolic rates within  $\pm 15$  to  $\pm 15$  per cent. The high percentage of normal results is most significant when it is considered that nearly all of the subjects who comprised the normal group had a functional or organic disease. With the exception of the thyroid and suprarenal glands, there is at present no evidence that any ductless gland is responsible for a demonstrable

1. Boothby, W. M., and Sandiford, Irene: Summary of the Basal Metabolism Data on 8,614 Subjects, with Especial Reference to the Normal Standards for the Estimation of the Basal Metabolic Rate, *J. Biol. Chem.* **54**: 783 (Dec.) 1922.

2. Means, J. H., and Burgess, H. W.: Basal Metabolism in Nontoxic Goiter and in Borderline Thyroid Cases, *Arch. Int. Med.* **30**: 507 (Oct.) 1922.

3. Boothby, W. M., and Sandiford, Irene: A Comparison of the Du Bois and the Harris and Benedict Normal Standards for the Estimation of the Basal Metabolic Rate, *J. Biol. Chem.* **54**: 767 (Dec.) 1922.



calorigenic reaction. A scientific basis for clinical calorimetry being thus firmly established, it becomes increasingly important that the training and educational equipment of those who are to profit by it shall be so adequate that the progress of medicine will be properly safeguarded, and above all that quackery shall not be enabled to gain a foothold where ignorance and incompetence leave an unprotected pathway.

#### DRUG EXANTHEMS

With the notable increase in the number of new drugs, many of them representing synthetic chemical compounds developed in the laboratories of various countries, have come manifestations of unusual or unexpected reactions produced by them in exceptional cases in the human organism. Thus, in addition to the long recognized exanthems known to occur at times after the use of bromids and iodids and such familiar medicaments as arsenical compounds, a diversity of skin eruptions, many of them transitory in character, has been described in recent years. The offending substances include such popular drugs as the derivatives of barbituric acid, several of which are widely used as soporifics, and various antipyretics, including some of the most familiar ones, hexamethylenamin and phenolphthalein. The skin manifestations occasionally called forth by the latter popular laxative have had repeated mention in *THE JOURNAL*.<sup>1</sup>

The theories of the etiology of the cutaneous manifestations have been as varied as the latter themselves appear to be. The hypotheses have followed the views that have happened to prevail at successive periods; accordingly, one reads of idiosyncrasy, susceptibility, chemotaxis, toxicity and, more recently, of allergy, or anaphylaxis, in connection with the phenomena. Some of the theories are susceptible of more rigorous experimental test. Reasoning that if a suitable explanation should be found for the more frequent of the exanthems, such as iododermas and bromodermas in their various forms, the answer might suffice also for the skin lesions or rashes produced by many other drugs. Wile, Wright and Smith<sup>2</sup> of the University of Michigan have reconsidered some of the factors in connection with the effects of bromids and iodids. The theory of the existence of specific precipitins for these substances in the blood was promptly disposed of, as this type of "immune" substance was not demonstrable. Percutaneous sensitization tests for iodid and bromid are uniformly negative, and cannot, therefore, be used to indicate ingestion susceptibility.

Wells<sup>3</sup> pointed out, not long ago, that there still remains no satisfactory proof that anything except proteins can act as anaphylactogens. He scouts the idea that drugs can produce true anaphylaxis. It is probable, Wells asserts, that many of the systemic reactions observed after intravenous injections of arsenicals and other substances are not anaphylactic but anaphylactoid, and dependent on capillary thrombosis, agglutination, emboli or capillary toxicity, after the order of the results obtained by Karsner and Hanzlik. According to Wells, the failure to produce passive anaphylaxis with the serum of persons hypersensitive to drugs, the failure to secure convincing active sensitization in guinea-pigs, the number of instances in which drug hypersensitiveness is exhibited on the first injection and those in which heredity is evidently responsible, and numerous points of difference from true anaphylactic reactions, all make the identity of drug hypersensitivity with true antigen-antibody anaphylaxis a matter of great improbability. With this the studies of Wile, Wright and Smith are in harmony. The local phenomena of iododerma and bromoderma, they state, do not find their explanation on simple bacterial or simple chemical grounds. The ultimate explanation probably lies in a complex biochemical reaction. The classification of such cutaneous phenomena, however, as true sensitization or allergy, they conclude, is as yet unjustifiable in the light of present knowledge.

#### THE DISTRIBUTION OF BACILLUS BOTULINUS

Botulism stands almost alone among human diseases in that the microbic cause is not a tissue invader transmitted directly through the agency of man or the higher animals or by means of insects, but is primarily a saprophyte, owing its pathogenic power to a toxin produced in food substances outside of the animal body. From the standpoint of prevention, therefore, the real habitat and distribution of *Bacillus botulinus* become matters of fundamental significance. Certain forms of animal and plant life dangerous to man have a definite localization on the earth's surface. Poisonous snakes, the mosquito carrier of yellow fever virus, and poison ivy are all restricted to certain areas; is this true of *B. botulinus*?

The obscurity that still surrounds the natural living conditions of most of the spore-forming anaerobes has been especially marked in the case of *B. botulinus*. With the exception of an isolated finding in 1897 by Kempner and Pollack, who came across this organism in the intestinal contents of a hog, it had been found until recently almost solely in connection with outbreaks of human botulism. Some early observations on the Pacific Coast by Meyer and Geiger<sup>4</sup> seemed to indicate

1. Wise, Fred, and Abramowitz, E. W.: Phenolphthalein Eruptions, *Arch. Dermat. & Syph.* **5**: 297 (March) 1922. Ayres, Samuel: Phenolphthalein Dermatitis, *J. A. M. A.* **77**: 1722 (Nov. 26) 1921. Corson, E. F., and Sidlick, D. M.: Urticaria from Habitual Use of Phenolphthalein, *ibid.* **78**: 882 (March 25) 1922. Rosenbloom, Jacob: Report of a Case of Nasal Herpes Due to Ingestion of Phenolphthalein, *ibid.* **78**: 967 (April 1) 1922. Wise, Fred, and Parkhurst, H. J.: Drug Eruptions from the Clinical Aspect, *Arch. Dermat. & Syph.* **6**: 542 (Nov.) 1922.

2. Wile, U. J.; Wright, C. S., and Smith, N. R.: A Preliminary Study of the Experimental Aspects of Iodid and Bromid Exanthems, *Arch. Dermat. & Syph.* **6**: 529 (Nov.) 1922.

3. Wells, H. G.: The Present Status of the Problems of Anaphylaxis, *Physiol. Rev.* **1**: 44 (Jan.) 1921.

4. Meyer, K. F., and Geiger, J. C.: *Pub. Health Rep.* **36**: 1313 (June 10) 1921.



that manured soil was very likely to contain *B. botulinus* spores. One of their observations is very striking: "For eight years previous to 1918, an owner of a small vegetable garden grew and home canned string beans without any spoilage. In 1918, the garden was fertilized with animal manure. The beans grown during this year were canned by the same method used previously, the contents of the jar promptly spoiled and some contained botulinus poison." From this, it would seem that the home of *B. botulinus* is in the alimentary tract of certain domestic animals.

This view has been considerably modified by a very extensive study of the distribution of the spores of *B. botulinus* carried out by Meyer and his associates, the results of which have just been published.<sup>5</sup> From this, it appears that the spores of *B. botulinus* are widely distributed in soil throughout the United States and part of Canada. They have also been obtained from soil samples collected in Belgium, Denmark, England, the Netherlands and Switzerland, and from Hawaiian and Chinese soils. In the United States, they have been found in almost every state in the Union. It is a surprising and possibly significant fact that *B. botulinus* spores were found far more frequently in virgin soil from mountainous districts than in soil or manure collected from animal corrals, pig pens, and the like. Contrary to earlier assumptions, soils subjected to intensive fertilization yielded *B. botulinus* less commonly than did uncultivated soils.

Of the two types of *B. botulinus*, the more toxic, commonly known as Type A, was found mainly in the Pacific Coast and Rocky Mountain states, while Type B predominated in specimens from the Mississippi Valley and Great Lakes region. Scattered findings of Type A were reported from some of the Atlantic Coast states, but for the most part B was the prevailing type. The soil samples from European countries did not show A in a single instance.

The findings of Meyer and his collaborators with regard to the presence of *B. botulinus* in various vegetables and fruits are equally interesting. In view of the soil findings mentioned above, all garden and field products in certain localities might be expected to carry *B. botulinus* spores at times. This is apparently true in general, but the authors call attention to some common variations in the results reported. Pea pods, stalks and leaves gave 5.4 per cent. of positive cultures (fifty-one specimens), while the vines and pods of string beans (forty-four specimens) were 32.7 per cent. positive. The number of specimens of any particular vegetable examined is hardly large enough to warrant special comment, and it is evident that the occurrence in vegetables should be closely correlated with local soil findings. Ten specimens of spinach were examined and all were negative, although this vegetable has been involved in several outbreaks of botulism.

The failure of these recent observers to find *B. botulinus* in significant numbers in animal excreta is worthy of particular notice. They are now inclined to believe that manures or fertilizers contribute relatively little to the contamination of the soil with this bacillus. Their observations on man also were negative. Contrary to the findings of Tanner and Dack,<sup>6</sup> who found *B. botulinus* in two out of ten specimens of feces from healthy persons, Meyer and Dubowsky did not obtain a single positive result from the examination of stools of forty-five normal persons.

It is evident that much still remains to be learned about the distribution of *B. botulinus* in nature. As always happens in scientific progress, these extensive and important observations, while they clear up much that was formerly obscure, suggest also numerous problems that remain for solution.

#### BACILLUS ACIDOPHILUS AND INTESTINAL PUTREFACTION

The accumulating experience in the use of milks soured by the action of lactic acid-producing organisms illustrates the unwisdom of accepting indirect inference in place of convincing observation and experiment in the applications of science to practice. At the outset it may be frankly admitted that the administration of sour milk products is at times beneficial. This is particularly true in pediatrics.<sup>7</sup> If clinical observation justifies the belief that for certain types of gastrointestinal disturbances fermented milk accomplishes more than sweet milk with a similar fat, sugar and protein content, the precise convincing explanation for the specific benefits is by no means yet forthcoming. One by one the hypotheses are being shattered. The early assumption that the Bulgarian bacillus of Metchnikoff fame could be successfully implanted in man and the intestinal flora permanently modified thereby seems to have become untenable. Of late, attention has been directed to the effects of the administration of milk cultures of a related micro-organism, *Bacillus acidophilus*, stated to be a normal inhabitant of the human alimentary tract, but ordinarily present in very small numbers under the most common dietary regimens.<sup>8</sup> This bacillus is reported to be more successfully implanted, provided a suitable pabulum is provided for it in the intestinal tract. Only under such conditions can the flora be transformed into the acidophilic type.

Because the acidophilic bacteria can be made to predominate so largely in the intestine under appropriate modes of administration, if not actual implantation in a more permanent way, it has been assumed that the activities of putrefactive organisms would be almost

6. Tanner, F. W., and Dack, G. M.: *Clostridium Botulinum: Presence in Human Alimentary Tract*, J. A. M. A. **79**: 132 (July 8) 1922.

7. *Lactic Acid-Producing Organisms and Preparations*, New and Nonofficial Remedies, Chicago, American Medical Association, 1922, p. 156.

8. Rettger, L. F., and Chaplin, H. A.: *The Intestinal Flora*, Yale University Press, 1921.

5. A series of seven papers in the *Journal of Infectious Diseases* **31**: 501-613 (Dec.) 1922.



entirely suppressed by a favorable change of flora induced by milk containing cultures of *Bacillus acidophilus*. With the disappearance of putrefaction, the somewhat hypothetic toxic products charged with harm to the body might also reasonably be expected to be lacking. Consequently, and not without some logic, suitably treated milk has been recommended in the treatment of intestinal disturbances due to putrefactive changes. However, if indican excretion may be taken as an index of intestinal putrefaction, it now appears that implantation of *Bacillus acidophilus* in the intestine does not necessarily lower the putrefactive processes. This, at least, is the conclusion that may be derived from two recent independent investigations, by Smith and Kulp<sup>9</sup> at Yale University, and by Kast, Short and Croll<sup>10</sup> at the New York Post-Graduate Medical School and Hospital. Some of the human subjects showed increased indican and phenol excretion in the urine when liberal amounts of milk and lactose cultures of *B. acidophilus* were added to the diet, although the concentration of the micro-organisms in the feces proved to be very high. In other cases, despite excellent implantation and determined change of intestinal flora to the aciduric type, the output of indican did not usually fall below that of the control periods.

It may be that the large amount of tryptophan-yielding protein present in milk and serving as a possible indican precursor may explain the outcome. These important and timely facts should not be interpreted as an arraignment of *Bacillus acidophilus* therapy. They merely suggest that favorable clinical results obtained with milk and lactose cultures of *Bacillus acidophilus* are not primarily dependent on decreased production of the antecedents of indican.

## Current Comment

### FUNCTIONAL TESTS FOR THE LIVER

Although so-called "functional tests" for the kidney have proved to be of considerable value in the clinical study of renal disorders, the attempts to devise equally useful or dependable tests for hepatic function have not been so successful. This is not due to failure to devote attention to the subject, or to lack of persistent effort to devise satisfactory reactions. A variety of tests have been proposed, often with considerable enthusiasm on the part of their authors; in most cases, however, a sufficient trial has demonstrated that they fall short of the expectations that were raised for the procedure. The explanation of the inadequacy has usually resided in the fact that comparatively few of the tests proposed involved functions that are absolutely specific for the liver, or that a number of

simultaneous conflicting factors made interpretations very uncertain. The importance of the subject should nevertheless encourage rather than discourage further effort toward the discovery of an adequate test. Several years ago, Abel and Rowntree<sup>1</sup> of the Johns Hopkins Medical School discovered in phenoltetrachlorophthalein a pigmentary substance which, under normal conditions, is excreted entirely by the liver. Thus the dye leaves the blood stream rapidly and is carried into the alimentary tract contents with the bile. According to experimental investigations by Rosenthal, the elimination of definite doses of phenoltetrachlorophthalein proceeds with remarkable uniformity except in cases of liver damage. His recent researches with a simplified technic<sup>2</sup> on human patients give promise that a method available for clinical use has at last been perfected whereby an index of the functional capacity of the liver or of the total amount of functioning liver tissue can be secured without difficulty. Clinical results have fully borne out experimental work. Following the intravenous injection of the dye, strikingly high degrees of retention in the plasma have occurred in cases of hepatic disease. The most noteworthy retentions among the patients studied in Boston by Rosenthal have been present in acute hepatitis, in a case of cirrhosis in which there was a small liver, and in advanced cases of hepatic carcinoma. Such reports should encourage a thorough trial of the new procedure.

### THE COST OF WORK—IN CALORIES

Now and then it falls to the professional duty of the physician either to prescribe some form of work for his patients or to consider the possible suitability of the tasks in which they are customarily engaged. Thus, there is added to the many requirements for acceptable medical practice the duty of becoming an expert on the subject of both muscular and mental effort. Exercise must be prescribed for some persons; others must be prevented from engaging in over strenuous occupation. Personal experience becomes a helpful teacher in enabling us to pass judgment on various degrees or types of exercise; and now science is coming to our further assistance. The study of energetics bears out experience in telling us that lumbering is a calory-consuming occupation in which the daily need of food fuel may rise to 6,000 calories. Hence, Lusk<sup>3</sup> is moved to remark that the proverbial reputation of sawing wood as a strenuous occupation has here its scientific verification, and explains the disinclination of the hungry to engage in this useful occupation, as well as the unpopularity of charitable wood yards. The wood yard and the stone pile are more likely to be involved in a sentence to jail than in a physician's directions. The easier tasks that permit suitable function without overtaxing an impaired heart or some other organ are usually expressed in medical literature in terms of dumb-bells or Indian clubs or stairclimbing. Most considerations of this sort have involved the male sex and

9. Smith, A. H., and Kulp, W. L.: The Effect of Change in Type of Intestinal Bacteria on Urinary Indican and Phenols, *Proc. Soc. Exper. Biol. & Med.* **20**: 44 (Oct.) 1922.

10. Kast, L.; Short, J. J., and Croll, H. M.: The Influence of Diet and of *B. Acidophilus* Ingestion on Intestinal Putrefaction, *Proc. Soc. Exper. Biol. & Med.* **20**: 45 (Oct.) 1922.

1. Abel, J. J., and Rowntree, L. G.: *J. Pharmacol. & Exper. Therap.* **1**: 231, 1909.

2. Rosenthal, S. M.: A New Method of Testing Liver Function with Phenoltetrachlorophthalein, *J. A. M. A.* **79**: 2151 (Dec. 23) 1922.

3. Lusk, Graham: *The Science of Nutrition*, Ed. 3, Philadelphia, W. B. Saunders Company, 1917, p. 349.



its vocations. Of late, new data have accumulated with respect to the energy expenditure of women in household occupations. The figures for rest approximate 60 calories or, in round numbers, a calory per kilogram, hourly. Such work as sewing requires the additional expenditure of from 10 to 15 per cent. of energy; for dishwashing or ironing the increment mounts to 20 per cent. or more, while the rapidly vanishing vocation of sweeping may make an extra energy demand of 65 per cent. an hour. According to the information issued from the Office of Home Economics<sup>4</sup> at Washington, it appears that knitting, crocheting, darning and sewing by hand make moderate demands on the body as regards energy expended, compared with washing, ironing, sweeping and dishwashing. This does not take into account such matters as fatigue from sitting in one position, from monotony of work, or similar factors, but simply the energy expenditure for the work done. Here is a liberal range of choice of therapeutic tasks for women. And lest the list should seem to be too conservative, let us add that the work of typewriting, according to Carpenter,<sup>5</sup> belongs in the dishwashing group of muscular exertions.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**Dr. Grote Resigns.**—Dr. Carl A. Grote has resigned as city and county health officer for Huntsville and Madison County to accept a similar position in Greensboro, N. C. Dr. Grote has been in charge of the health department at Huntsville for five years and was president of the Junior Chamber of Commerce and the Kiwanis Club. He succeeds Dr. Harry Brockman. Dr. Burton F. Austin, Decatur, county health officer of Morgan County, will succeed Dr. Grote as health officer of Madison County.

### CALIFORNIA

**Personal.**—Dr. Lester E. Tretheway, Manteca, has been appointed a member of the county board of health.—Dr. David Starr Jordan, Stanford University, Palo Alto, Calif., has been awarded the Order of the Rising Sun by the Japanese government in recognition of his services to that country. President Kozai and Professor Watase of the Imperial University of Tokyo presented the decoration.

**State Board of Health.**—Governor Stephens has reappointed the following physicians, whose terms expired some time ago, as members of the state board of health: Drs. Edward F. Glasco, San Francisco; George E. Ebright, San Francisco; Robert A. Peers, Colfax; Adelaide Brown, San Francisco, and Frederick F. Gundrum, Sacramento. These officers will serve for four years.

### CONNECTICUT

**Personal.**—Dr. Albert E. Austin, Greenwich, sailed, December 16, on the White Star liner *Majestic* for Cherbourg and Southampton.—Dr. Gilbert T. Smith, Stamford, has been appointed chief surgeon of the S. S. *Resolute*, which left New York, January 8, for a tour round the world.

4. Langworthy, C. F.: Report of Work on Energy Expenditure for Sewing and Some other Household Tasks, *J. Home Economics* 14: 621 (Dec.) 1922.

5. Carpenter, T. M.: The Increase in Metabolism Due to the Work of Typewriting, *J. Biol. Chem.* 9: 231, 1911.

### FLORIDA

**Duval County Medical Society.**—At the annual meeting of the society in Jacksonville, December 5, Dr. John E. Boyd was elected president; Dr. Elmo D. French, vice president, and Dr. Francis A. Copp, secretary. Dr. John K. Norwood was reelected treasurer and business manager of the *Duval County Medical Society Bulletin*.

**Antimosquito Association Organized.**—At the recent antimosquito conference, held in Daytona, the Florida Antimosquito Association was organized, with Col. Joseph Y. Porter, Sr., Key West, as chairman. This independent agency, with a membership of civic organizations, corporations and individuals interested in mosquito control work, will be closely identified with the state board of health, which will make community surveys, outline plans, initiate campaigns and guide its movements.

### GEORGIA

**Public Health News.**—The portable dental clinic of the Atlanta public schools reported 11,669 children with defective teeth among pupils of nine public schools examined recently. The 240 members of the Atlanta Dental Society are cooperating in a drive for better teeth among schoolchildren, each dentist treating, free of charge, at least one child. Of 6,279 children examined during one week, 5,534 were found to be in need of treatment.

**Crawford Long Memorial Association.**—The Atlanta Academy of Medicine has furnished an office free of cost for the Crawford W. Long Memorial Association to conduct its campaign for funds to erect a statue of Dr. Long in the National Hall of Fame, Washington, D. C. Souvenir checks have been sent out by Dr. Frank K. Boland, president of the association, to be filled in by the subscriber with the amount he wishes to give. On one end of the check is a picture of a medallion of Dr. Long as a young physician, administering ether for the first surgical operation under anesthesia, March, 1842. Druggists will also be recipients of the requests for donations. Dr. William J. Blalock, president of the Fulton National Bank of Atlanta, is treasurer of the association. The sum of \$10,000 is required, of which only \$3,000 has been subscribed to date.

### ILLINOIS

**Personal.**—Dr. Arthur N. McCord, city physician of Streator, sustained a fracture of the right wrist, December 15, while cranking his car.—A public reception and banquet was given in honor of Dr. Clarence E. Smart of Weldon on the occasion of his leaving for Savannah, where he will reside in future.—Dr. Herbert E. Parson, Decatur, has been reelected county physician.—Dr. Ward P. Burdick was unanimously elected president of the staff of St. Anthony Hospital, Rockford, at the annual meeting.—Dr. Walter C. Martini has resigned as medical superintendent of the Oaklawn Sanatorium, Jacksonville, and will act in the same capacity at the Champaign County Tuberculosis Hospital at Urbana, succeeding Dr. Anna C. Johnson, who resigned recently.

### Chicago

**Society of Medical History Meeting.**—At the meeting of the Society of Medical History, Chicago, January 12, papers were presented by Dr. Peter Bassoe on "Early History of Neurology and Psychiatry in the Middle West," and by Dr. A. S. Warthin, Ann Arbor, Mich., on "Noah Webster as an Epidemiologist."

**Personal.**—Dr. Robert C. Timms has resigned from the city health department, following five years' service.—Drs. Franklin H. Martin, Emil G. Beck, Arthur D. Black, Truman W. Brophy, Frank E. David, Ernest J. Ford, Junius C. Hoag, Effie L. Lobdell, Albert J. Ochsner and Henry Schmitz will leave, February 10, for an extended tour of South America.—Dr. Benjamin B. Beeson, Chicago, read a paper on "The Diagnosis of Skin Diseases" before the Scott County Medical Society at Davenport, Iowa, January 2.

**Infant Welfare Society.**—The annual meeting of the society will be held, January 24. At a meeting held recently, it was stated that approximately 12,000 babies were taken care of by the twenty-seven stations during 1922. This work will be extended to every corner of the city, with the hope of saving the lives of 18,750 babies in Chicago during 1923, it was announced. While the death rate among infants for the city was 89 per thousand, the rate among welfare babies was only 14.—Vital statistics recently announced give Chicago's



birth rate as 20.02, as compared with 20.33 in 1921, and the death rate, 11.88, as compared with 11.08 in 1921. Thus the city's population is increasing at the rate of 25,000 a year from the excess of births over deaths alone.

## INDIANA

**Memorial to Physicians.**—Bronze memorial tablets to the late Drs. Albert C. Kimberlin and Frank B. Wynn were unveiled with appropriate ceremonies at the Methodist Episcopal Hospital, Indianapolis, January 14.

**Indianapolis Medical Society.**—At the annual meeting of the society, December 30, the following officers were elected for 1923: president, Dr. John W. Sluss; vice presidents, Drs. William F. Molt, and Arthur L. Walters, and secretary-treasurer, Dr. William A. Doeppers. Dr. Charles H. Good, president of the Indiana State Medical Association, gave an address.

## KENTUCKY

**Personal.**—Dr. Henry E. Tuley, who has resigned as superintendent of the Louisville City Hospital on account of ill health, has been succeeded by Henry Reager.—Dr. James U. Ridley, Robard, has been elected health officer of Henderson County to succeed Dr. Everett N. Powell of Corydon.

**Public Health News.**—The advisory committee of the state board of charities and corrections, December 30, appointed fifteen Lexington physicians as a local consulting staff of the state board to work with the resident staff of the Eastern Kentucky State Hospital and the State School of Reform at Greendale, in providing proper medical care to the inmates of the two institutions. This is the first move in a campaign to improve the conditions from a medical standpoint at the charitable and penal institutions of the state. The Feeble-minded Institute and the State Reformatory, Frankfort; the State Hospital, Lakeland; the State Hospital, Hopkinsville, and the state penitentiary, Eddyville, are the other institutions that will receive gratuitous service by local physicians.—Five sanitary inspectors from the School of Public Health, operated by the University of Louisville, have been added to the public health workers of the state. These men, who will be sent to different counties of the state, in addition to having pursued technical and theoretical studies in public health during the summer, were given practical work under the supervision of the health officer in one of the full-time health departments.—An order has been issued by the health officer of Catlettsburg, for general vaccination following the discovery of four cases of smallpox in the city. The victims had been at large on the streets for several days before their cases were diagnosed. A rigid quarantine has been established over the locality.

## LOUISIANA

**Hospital News.**—A ward in the proposed new annex building of the Touro Infirmary, New Orleans, will be named in memory of the late Samuel Schwartz, whose heirs have increased the building fund of the infirmary by \$15,000, it was announced, January 3, by the board of managers. The ward will be known as the Sam Schwartz Ward. Owing to the number of premature babies born at the infirmary, the baby incubator, installed through the generosity of Mr. Bonart, has proved inadequate, and Mr. Bonart has donated another. Dr. J. W. Newman, New Orleans, recently donated \$5,000 to the institution, for maternity work.—The Greenwell Springs Tuberculosis Sanatorium, near Baton Rouge, was totally destroyed by fire, recently. The loss is estimated at \$50,000.

## MASSACHUSETTS

**Physician Elected Mayor.**—Dr. William D. McFee was elected mayor of Haverhill, December 5, by a majority of 2,341. Dr. McFee is chief of staff of the Gale Hospital and was formerly city physician.

**Hospital News.**—Repairs costing \$60,000 will be made at the Peter Bent Brigham Hospital, Boston, recently vacated by the U. S. Veterans' Bureau, it is announced by Dr. J. B. Howland, superintendent.—The new home for the Boston Lying-In Hospital, with the new nurses' home, opposite the Harvard Medical School at Cambridge, was formally opened, January 1, when the patients were admitted. Nearly \$1,000,000 has been raised to defray expenses of constructing the new hospital and nurses' home. The wing in which private wards will be established will be erected later. Dr. William L.

Richardson, through whose efforts the hospital was reopened, is president emeritus of the trustees.

**Personal.**—On the retirement of Dr. George W. Dow, Lawrence, as medical examiner, Dr. Victor A. Reed, his assistant, will succeed him. Dr. George B. Sargent, Lawrence, will succeed Dr. Reed as assistant medical examiner.—Dr. John M. Little of Boston will succeed Dr. Edwin W. Dwight, Boston, as chief surgeon of the Boston and Albany Railroad. Dr. Dwight, whose resignation became effective, January 1, has been chief surgeon of the road since 1909.—Prof. E. L. Mark, who was 75 in May, and retired recently with the title of Hersey professor of anatomy, emcritus, Harvard University, was given a dinner in Boston, December 27.—Dr. Howard T. Child, Boston, has been assigned as permanent subdistrict medical officer of the local office of the U. S. Veterans' Bureau, Burlington, Vt. Dr. Child served with the U. S. Navy during the World War.—Dr. Peter L. McKallagat has resigned as city physician of Lawrence.—Dr. Joseph A. Bacon has been reappointed head of the Haverhill Tuberculosis Sanatorium.

## MISSOURI

**Personal.**—Dr. George M. Boteler, city health officer of St. Joseph, resigned, January 15. This was Dr. Boteler's third term as health officer. He has accepted the position of assistant health officer of the District of Columbia and will reside in Washington.

**The Hodgen Lecture.**—Dr. Lewis S. McMurtry, Louisville, Ky., will deliver the Hodgen Lecture for 1923, under the auspices of the St. Louis Surgical Society and the Medical Fund Society at the University Club, St. Louis, January 24. His subject will be "The Birth of Scientific Surgery."

**Physicians in the General Assembly.**—The following physicians were elected to the general assembly at the recent elections: representatives, Dr. Frederick L. Ogilvie, Scott County; Dr. Robert F. McReynolds, Knox County; Dr. Heine Marks, City of St. Louis, fifth district; Dr. William A. Porter, Lafayette County, and Dr. L. V. Cockrum, Lewis County. Dr. Benjamin B. Tout of Cass County was reelected to the senate.

## NEVADA

**Physician Elected to Legislature.**—Dr. Roy W. Martin, superintendent of the Las Vegas Hospital, has been elected to the state legislature.

**New Health Ordinance.**—At a meeting of the city council of Reno, December 26, a new health ordinance was drawn, providing that physicians must report all contagious and communicable diseases except in certain specified instances. It also contained a clause making it compulsory for any person under arrest and suspected of being infected with any disease considered dangerous to the public health to submit to a physical examination, and treatment if necessary, at his own expense or, if indigent, at public expense.

## NEW JERSEY

**Personal.**—Dr. Charles J. Murn was recently elected president of the board of health of Patterson.—Dr. George B. Ellor, a former commissioner, has been appointed health commissioner of Bloomfield to succeed Dr. Benjamin F. Sturges. Dr. Morgan D. Hughes has resigned as member of the board of health of Bloomfield.—A dinner was given to Edward Weston, LL.D., Sc.D., Newark, head of the Weston Electrical Instrument Company, at the Hotel Commodore, New York, December 28, at which he was presented with a silver loving cup by the guests.—Drs. George V. V. Warner, Redbank, and John C. Clayton, Freehold, were elected president and secretary, respectively, of the Monmouth County Medical Society, at the annual meeting at Freehold, recently.

## NEW YORK

**Brooklyn Plans Clinics.**—The department of public welfare, in cooperation with the Medical Society of the County of Kings and the Long Island Hospital Medical College, Brooklyn, will hold clinics at the Kings County Hospital during January and February, it was recently announced by Commissioner of Public Welfare Coler. Invitations were sent to the medical profession to attend the clinics in internal medicine, surgery, gynecology, obstetrics, neurology and other subjects and also to attend the formal exercises of the opening of the new dispensary and operating suite of the Kings County Hospital, January 12.



**Hospital News.**—The pavilion for handicapped children of Ontario County, erected at Memorial Hospital, Canandaigua, was formally dedicated, December 27. This pavilion was the gift of the Canandaigua Rotary Club.—The DeWitt Sanatorium has given up its plans for establishing an institution for the treatment of maternity and surgical cases at 168 Hancock Street, Brooklyn. This change of plans is the result of opposition on the part of residents in the neighborhood who fear that such an institution would decrease real estate values and increase fire hazards.—The Veterans' Mountain Camp of the American Legion, Tupper Lake, which has been remodeled to conform to state requirements for a hospital of its type, will be formally opened in the near future, the work having been completed. The Knights of Columbus have recently given to the camp, on account, \$1,000 of the \$10,000 recently pledged by them to the movement.—St. Mary's Hospital, Rochester, has started construction of a new nurses' home, to be erected at a cost of \$300,000. This is to be the first unit of a new hospital group in Rochester, the plan for which has been developed by the hospital authorities, with Dr. S. S. Goldwater, New York, as consultant. The new outpatient department of St. Mary's Hospital was formally opened, January 2, with Dr. Leo F. Simpson as director of the surgical clinic, and Dr. Benjamin F. Duffy, of the medical clinic.—The United Hospital Fund Campaign, to raise a fund of \$1,300,000 for extension and improvement of services at Rochester General Hospital, Rochester Highland Hospital and the Homeopathic Hospital of Rochester, was conducted, January 12-20.—The Monroe County Tuberculosis Sanatorium, of which Dr. John J. Lloyd is superintendent, will give a course in diagnosis and treatment of tuberculosis to Rochester physicians, beginning January 12. There will be eight sessions on Friday mornings.

#### New York City

**Guity's "Pasteur" Coming to America.**—At the Pasteur centenary meeting held at the New York Academy of Medicine, January 10, the president of the academy, Dr. George David Stewart, announced that the rights to Sacha Guity's play "Pasteur" have been acquired for Henry Miller. The play will be presented by the Charles Frohman Company, Henry Miller taking the title rôle. The English version of the play has been made by Arthur Hornblow, Jr.

**Chandler Foundation.**—Robert Eckele Swain, Ph.D., professor of chemistry and head of the department of chemistry of Stanford University, gave the Charles Frederick Chandler Foundation lecture at Columbia University, January 9, on the subject of "Atmospheric Pollution by Industrial Wastes." In 1910, friends of Prof. Charles F. Chandler presented a sum of money to Columbia University for the foundation, the income from which is used to provide a lecture by an eminent chemist and a medal which is presented to the lecturer in recognition of his achievements in science.

**Personal.**—Dr. Fred H. Albee has been invited to give the opening address at the Congress of Orthopedic Surgeons, to be held in Amsterdam, Holland, May 25-26.—Dr. Boris Bogen, head of the Joint Distribution Committee for Russian and Polish Relief, Dr. I. G. Kligler of the Rockefeller Institute and head of the Palestine Malarial Research Unit, and Dr. Otto Shulhof, director of recreation for New York, sailed, December 16, on the White Star liner *Majestic*, for Cherbourg and Southampton.—Drs. William J. Robinson and Martin Rehling were reelected president and secretary, respectively, of the medical board of the Bronx Hospital and Dispensary, December 28.—Dr. Herman Baruch returned from Europe on the White Star liner *Majestic*, January 5.—Dr. Robert Bárány, professor of otology at the University of Upsala, Sweden, gave an address on "Development and Problems of Neuro-otology" before the New York Academy of Medicine (section on otology and neurology and psychiatry), January 13.—Dr. Henry O. Reik has tendered his resignation as head of the American Institute of Medicine and editor of the *International Medical and Surgical Survey*.—Dr. Hans Zinsser, professor of bacteriology at the College of Physicians and Surgeons and bacteriologist to the Presbyterian Hospital, will join the staff of the Harvard Medical School, Boston, next autumn, as professor of bacteriology and immunology.

#### OHIO

**New State Health Commissioner.**—Governor Donahey has appointed Dr. John E. Monger, Columbus, as state director of public health to succeed Dr. H. H. Snively. The appointment was announced, January 3, on receipt of definite declination from Dr. Allen W. Freeman, professor of public

health at Johns Hopkins University, Baltimore, whose five-year term as state health commissioner was broken by the reorganization law last July.

**Columbus Academy of Medicine.**—At the annual meeting and banquet of the academy, December 11, legislative action necessary to secure the abolition of the office of coroner and provide for a medical examiner and staff, with proper psychiatric and pathologic divisions, under the county prosecutor; and the creation of a central bureau of criminal identification within the state department of welfare, which would take the finger prints of all persons arrested in the state regardless of the nature or outcome of the case, was indorsed. The pathology of crime was discussed, and Charles De Woody, director of the Cleveland Association for Criminal Justice, spoke on "Crime and the Administration of Criminal Justice."

**Personal.**—Dr. Carl C. Hugger, Columbus, has been appointed resident obstetrician and gynecologist of the New York Polyclinic Hospital.—Dr. Wilbur G. Carlisle, Bucyrus, sustained injuries, and his brother was killed, recently, when their automobile was struck by a train. It is reported that Dr. Carlisle will recover.—Dr. Michael R. Haley, Piqua, has been awarded the French medal of honor for meritorious services in France during the World War.—Dr. Theodore E. Myler has resigned as health officer of Geauga County.—Dr. Archibald C. Adams, republican candidate for coroner of Allen County, was reelected for the third term at the November election.—Dr. John H. Berry, superintendent of the Athens State Hospital, was elected president of the Athens County Medical Society at the annual meeting.—Drs. John J. Reynolds and Dyle J. Slosser were elected president and secretary, respectively, of the Defiance County Medical Society, recently.—Dr. Carl L. Mueller has been elected health commissioner of Wapakoneta to succeed Dr. George L. Lyne, who resigned, January 7.—Dr. Charles S. Runk, New Lexington, has been appointed health commissioner of Perry County.—Dr. William H. Carey, Bellefontaine, has been appointed health commissioner of Logan County for the second term.—Dr. Orange H. Thomas, Fremont, has been reelected health commissioner of Sandusky County.

**Mental Hygiene Clinic in Cincinnati.**—The director of the Community Chest and Council of Social Agencies of Cincinnati has submitted to the board of directors an outline for a mental hygiene clinic. The plan has been approved and a special committee has been appointed under Dr. Emerson A. North to proceed to establish a working organization. It is hoped to clear up mental problems in the field of dependency, to develop a method of handling effectively the mental problems of the juvenile and police courts and to supply the public schools with the facilities necessary for dealing with problems in conduct disorders. The clinic is to work in cooperation with these various agencies. It is hoped to make a social study of the home conditions of the various patients, to have physical examinations, and psychologic examinations for determining intelligence levels, and finally to enlist the aid of a psychiatrist in an endeavor to discover evidences of developing mental disease, conflicts or wrong mental attitudes. Cases needing medical attention will be referred to the established hospitals and clinics and those in need of adjustment to the educational bureau. Cases involving home conditions were to be referred to the social agencies or social workers of the clinic and cases requiring psychiatric treatment would either be treated directly in the clinic or be referred to some of the established psychiatric institutions. The plan is comprehensive, and its progress will be watched with general interest throughout the country.

#### OREGON

**Central Willamette Valley Medical Association.**—At the annual meeting of the association in Eugene, December 7, Dr. William H. Davis, Albany, was elected president; Dr. Robert L. Wood, Lebanon, vice president, and Dr. Frank E. Beauchamp, Albany, secretary-treasurer.

**Granite City Hospital.**—This institution, recently purchased by Jesse Winburn and renovated, has been opened to physicians and dentists, offering equal privilege and service to all members. It will be known as the Ashland Community Hospital. At a meeting of the physicians and dentists recently, appreciation for this gift to Ashland and the medical profession was voiced, and a plan to buy a community ambulance was launched. Winburn was a former patient at the hospital.

**Personal.**—Dr. Jacob E. Shearer, Tillamook, has been appointed chairman of the state hospitalization board for



disabled ex-service men.—Dr. Eugene W. Rockey was unanimously elected commander of Portland Post No. 1 of the American Legion for 1923 at the annual meeting.—William C. Munly, captain, M. C., U. S. Army, for three years in Coblenz, Germany, with the American Army of Occupation, recently returned to this country.—Dr. Edgar O. Dutro, Hood River, who was forced to give up the practice of medicine a year ago owing to ill health, has resumed his practice.—Dr. William Donald Nickelsen, who has been in charge of the dispensary at Moscow, under the American Relief Administration, has returned to Portland from Russia.—Dr. Henry C. Jefferds, Portland, recently sailed on the *Laconia* for a tour of the world. The ship was chartered for this purpose and is expected to circle the globe in less than three months.—Major Richard B. Dillehunt, M. O. R. C., dean of the University of Oregon Medical School, Portland, has been assigned to General Hospital No. 46 (reserve) by the War Department.

## PENNSYLVANIA

### Philadelphia

**New Surgical Society Organized.**—The George P. Muller Surgical Society of the Post Graduate School of the University of Pennsylvania has recently been organized. Section meetings will be held every second and fourth Monday in the month. Papers are furnished by the graduate surgical students.

**Academy of Natural Sciences of Philadelphia.**—At the annual meeting of the academy, December 19, Richard A. F. Penrose, Ph.D., was elected president to succeed John Cadwalader, LL.D. Edwin G. Conklin, Ph.D., and Dr. Henry Skinner, Philadelphia, were elected vice presidents, and George Vaux, Jr., treasurer. Dr. Spencer Trotter, Swathmore, was elected librarian.

**Physicians Held in Bail.**—Seven physicians who offered "busy practice" as their only excuse were brought before Magistrate Grellis and held in \$400 bail each on charges of failing to report births in accordance with the state law. The charges will be removed as soon as they comply with the law. The prosecution was instituted by Dr. Wilmer R. Batt, state registrar of vital statistics.

**Personal.**—Dr. J. Blair Spencer has resigned as director of the local health council for the prevention of tuberculosis, in order to devote his time to his office as assistant director of public welfare. During his period of service with the health council, Dr. Spencer turned his salary of \$8,000 a year over to charity.—Dr. Edward Martin has resigned as state health commissioner, following four years' service.—Dr. John B. Deaver, Philadelphia, conducted a surgical clinic at the Presbyterian Hospital, Charlotte, N. C., January 5.—Dr. Horatio C. Wood, professor of materia medica, Philadelphia College of Pharmacy and Science, will deliver the eighth lecture of the free public course given by the college, January 24, on "The Cost of Patent Medicine." Prof. E. Fullerton Cook, Ph.M., delivered the seventh lecture, January 17, on "The Making of Medicine (From the Time of the Pharaohs Down to the Scientific Age of Today)."—Dr. Victor George Heiser, New York, has been appointed commissioner of health to succeed Dr. Edward Martin, and Dr. Ellen C. Potter will succeed Dr. John M. Baldy as commissioner of public welfare.

## RHODE ISLAND

**Personal.**—Dr. Charles H. Holt has been elected mayor of Pawtucket. Dr. Holt, previous to taking the oath of mayor, resigned the position as head of the department of health, which he has held for seven years. He will be succeeded by Dr. Florian A. Ruest, a graduate of Laval University, Montreal, Canada.

## TENNESSEE

**Health Board Eliminates Two Bureaus.**—The venereal disease and the oral hygiene departments will be discontinued by the state board of health, it is announced. The work of the oral hygiene department overlaps that of the rural sanitation bureau, while lack of cooperation on the part of some of the cities of the state is assigned as the reason for the elimination of the venereal disease bureau.

## TEXAS

**Public Education Campaign.**—Responding to an appeal from the state board of medical examiners for amendment of the medical practice act so as to make the law enforceable,

the State Medical Association began a campaign of public health education, January 1. Dr. C. M. Rosser is chairman of the educational campaign. Six physicians made lecture tours of north and east Texas during the first week. A dinner was given at Greenville for members of the state legislature, heads of civic organizations and the medical profession, to discuss the situation. Dr. Joseph D. Becton, president of the State Medical Association, attended the dinner.

## VIRGINIA

**State Health Conference.**—A conference of state health workers was held in Richmond, December 28-30. Dr. Warren F. Draper, U. S. Public Health Service; Dr. James A. Hayne, secretary of the state board of health of South Carolina, and Dr. Ennion G. Williams, state health commissioner, gave addresses at the session.

**Personal.**—Dr. Benjamin J. Baker, Norfolk, following a long illness and a year's rest from work, has resumed his practice.—Drs. Willie S. Snead and Samuel Downing were elected president and secretary-treasurer, respectively, of the Warwick County Medical Society, at the annual meeting in Newport News, December 15.

## WASHINGTON

**Hospital News.**—Sealed proposals were received, January 16, by the director of the U. S. Veterans' Bureau, Washington, D. C., for the construction of a neuropsychiatric hospital at American Lake, Tacoma, consisting of twenty-eight fire-proof buildings, complete, with water, lighting, heating and sewer systems. Plans and specifications for the institution have been completed.—A new building was recently completed at Our Lady of Lourdes Hospital, Pasco, at a cost of \$135,000. The hospital staff has been organized and a training school has been opened.

**Personal.**—Dr. William H. Anderson, Seattle, has been appointed superintendent of the King County Hospital, Seattle, to succeed Dr. James Tate Mason. The entire board of the hospital will be reorganized, Dr. Anderson announced. Dr. George M. Horton has been named consulting chief of the institution on the new board.—Dr. Joseph L. Lane has returned to Seattle following eighteen months in Europe, where he took graduate courses in London, Paris, Berlin and Vienna.—Dr. Joseph H. Fitz, Montesano, has been appointed health commissioner of Grays Harbor County to succeed Dr. Raymond J. Cary of Elma.—Dr. Joseph P. Kane, former health officer of Tacoma, was elected president of the Pierce County Medical Society, and Dr. Warren B. Penny, secretary-treasurer, for 1923.

## CANADA

**New Mental Hygiene Committee.**—At a meeting of the Montreal branch of the Canadian National Committee for Mental Hygiene, at the end of December, the Mental Hygiene Committee of Montreal was formed. Dr. Colin K. Russel was elected president of the committee; Dr. F. H. Mackay, secretary, and Dr. Gordon S. Mundie, medical director.

**New Medical Society Formed.**—At a meeting of District No. 1 of the Ontario Medical Association, recently held at Chatham, the Kent County Medical Society was organized, with Dr. James W. Rutherford, Chatham, president, and Dr. Ernest C. Riseborough, Chatham, secretary. Dr. Edward R. Secord, Brantford, and Dr. Thomas C. Routley, Toronto, president and secretary, respectively, of the Ontario Medical Association attended the meeting and banquet.

**University News.**—The following appointments have been made by the board of governors of the University of Toronto, department of medicine: assistant professors of ophthalmology, Drs. Duncan N. MacLennan and William Lowry; department of obstetrics and gynecology; assistant professor, Dr. Frederick A. Cleland; associates, Drs. William A. Scott and John G. Gallie.—The library of Western University was recently the recipient of a volume of "The Aphorisms of Hippocrates and the Sentences of Celsus." This book is considered one of the earliest medical books written.

**Federation of American Societies for Experimental Biology.**—The annual meeting of the federation, comprising the physiologic, biochemical, pharmacologic and pathologic societies, was held in Toronto, December 27-29. Reports of elections received up to date are as follows: American Society of Experimental Pathologists: Dr. Eugene L. Opie, professor of pathology at Washington University Medical School, St. Louis, was elected president. Dr. Joseph Erlan-



ger, professor of physiology at Washington University School of Medicine, St. Louis, was reelected treasurer of the American Physiological Society, and Prof. Philip A. Shaffer, Ph.D., professor of biochemistry at Washington University School of Medicine, St. Louis, was elected president of the American Society of Biological Chemists. Dr. Shaffer also served as chairman of the executive committee of the federation of the American Societies for Experimental Biology. At the meeting of the federation the following councilors were elected for the ensuing year: Drs. John R. Murlin, Rochester, N. Y.; S. A. J. Carlson, Chicago; C. W. Green, Missouri; Joseph Erlanger, St. Louis, and A. B. Luckhardt, Chicago.

### GENERAL

**American Society for Clinical Investigation.**—The fifteenth annual meeting of the society will be held in Atlantic City, N. J., April 30. Those submitting titles of papers to be read before the meeting must accompany them with abstracts of their papers (not more than 200 words). Titles should be sent to Dr. James H. Means, secretary of the society, 15 Chestnut Street, Boston, not later than March 1.

**Bacteriologists Elect.**—At the annual meeting of the Society of American Bacteriologists in Detroit, December 27-29, the following officers were elected for the ensuing year: president, Prof. Edwin G. Hastings, Madison, Wis.; vice president, Dr. Arthur Parker Hitchens, major, M. C., U. S. Army, Washington, D. C., and secretary-treasurer, J. M. Sherman, Dairy Division, U. S. Bureau of Animal Industry, Washington, D. C.

**Rockefeller Purchases Pasteur Home.**—John D. Rockefeller recently purchased, for 40,000 francs, as a centenary gift to the people of the village, the cottage at Dôle, France, in which Louis Pasteur was born 100 years ago. The French parliament has given an additional sum of 20,000 francs with which the cottage will be remodeled into a public museum. It will be presented to the people of the commune of Dôle. The property and house formerly belonged to Pasteur's father, a tanner.

**Association of American Medical Colleges.**—The thirty-third annual meeting of the association will be held at Ann Arbor, Mich., March 2-3, under the presidency of Dr. Charles P. Emerson, Indianapolis. The chief topic of discussion will be the new medical curriculum. Dr. Harley E. French, dean of the University of North Dakota School of Medicine, will speak on "Problems of Two Year Medical School," and Prof. Theodore Hough, Ph.D., dean of the University of Virginia Department of Medicine, will read a paper entitled "Shall the Premedical Requirement Be Increased?" Dr. Frederick C. Zapffe, Chicago, is secretary of the association.

**National Health Council.**—At the annual meeting of the National Health Council at its New York offices, January 6, the following officers were elected for the ensuing year: chairman, Lee K. Frankel, Ph.D., to succeed Dr. Livingston Farrand of Cornell University; vice chairman, Dr. Frankwood E. Williams, medical director of the National Committee for Mental Hygiene; secretary (reelected), Dr. Samuel J. Cumbine, Topeka, secretary of the Kansas State Board of Health, and treasurer (reelected), Dr. William F. Snow, New York, general director of the American Social Hygiene Association.

**Congress on Surgery to Meet in London.**—The international Congress of Surgery issues an advance program for the meeting, which will occur in London, July 16-21. The sessions will be held under the presidency of Sir William Macewen. Among American surgeons who are included on the program are the following: Drs. W. R. MacAusland, Boston, "Arthroplasties"; Harvey Cushing, Boston, "Surgery of the Endocrines"; C. Frazier, Philadelphia, "Surgery of Traumatic Nerve Lesions"; George Crile, Cleveland, "Operative Shock"; William J. Mayo, Rochester, "The Splenic Syndromes," and Major A. P. Hitchens, Washington, "Serum and Vaccine Therapy." The arrangements for the congress are in the hands of the secretary, Dr. L. Mayer, who may be addressed at 72 Rue de la Loi, Brussels.

**American Association for the Advancement of Science.**—At a recent meeting of the American Association for the Advancement of Science, held at Cambridge, Mass., Charles D. Walcott, LL.D., Ph.D., secretary of the Smithsonian Institution, Washington, D. C., was elected president. Professor Walcott is president of the National Academy of Sciences. Prof. E. W. Washburn, Ph.D., University of Illinois, was elected vice president of the chemical section.

A special number of *Science* containing the address of the retiring president of the American Association for the Advancement of Science and the proceedings of the association of the sections of the affiliated national scientific societies meeting at Boston during convocation week was issued recently.—Prof. Charles E. Mendenhall, Ph.D., of the University of Wisconsin, was elected president of the American Physical Society.—During the meeting of the sections of the affiliated national societies at Harvard University, Prof. Lewis M. Terman, Stanford University, Palo Alto, Calif., was elected president of the American Psychological Association and Prof. John Anderson, Johns Hopkins University, Baltimore, secretary.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

Cambridge Hospital, Cambridge, Mass.; Free Hospital for Women, Brookline; the Perkins Institution and Massachusetts School for the Blind, Watertown, and the Massachusetts Charitable Eye and Ear Infirmary, Boston, shares in the \$375,000 estate of Charles G. Green, Cambridge.

Children's Hospital, Philadelphia, and the Children's Seaside Home, Atlantic City, N. J., on the death of the annuitants, one half of the principal of the \$125,000 estate of the late Major Charles W. Bailey of Philadelphia.

Massachusetts Homeopathic Hospital, Boston, \$100,000; Children's Hospital, the Boston Floating Hospital, the Eye and Ear Infirmary and the Massachusetts Association for Promoting Interests of Adult Blind, each \$10,000, by the will of Arthur F. Estabrook.

San Antonio, Calif., for the establishment of a hospital, \$75,000, by Mrs. James Paul.

Eastern Maine General Hospital, Bangor, \$75,000 from "a friend."

Roosevelt Hospital, New York, the residuary estate of Helen T. Cole, appraised at \$70,634.

Mount Sinai Hospital, New York, as a nucleus for medical education, \$25,000 from Mr. Joseph F. Cullman.

Children's Hospital, Birmingham, Ala., \$25,000, from Mr. Crawford Johnson of that city.

British Old People's Home, Riverside, Ill., \$22,000; donation of a site valued at \$10,000 by Mr. Samuel Insull of Chicago, and \$12,000, the result of a bazaar held by the Daughters of the British Empire in Chicago.

Hale Hospital, Haverhill, Mass., \$20,000; Old Ladies' Home, \$10,000, and the Haverhill Children's Aid Society, \$500, by the will of George C. Wadleigh of Haverhill.

Jane Lamb Memorial Hospital, Clinton, Iowa, \$11,000, to furnish rooms in the new addition, collected at a festival held for that purpose.

Sebring, Fla., \$10,000, for the establishment of a charity hospital by Mr. and Mrs. George E. Sebring.

New York Neurological Institute, New York, \$10,000, by the will of the late Dr. Pearce Bailey of New York.

Denver Sanatorium of the Jewish Consumptives' Relief Society, \$10,000, the proceeds of a ball held by the ladies' auxiliary of the society in New York City.

Methodist Episcopal and St. Christopher's hospitals, Philadelphia, \$5,000 each for the maintenance of free beds; the Children's Seaside Home, Atlantic City, N. J., \$2,000, by the will of Annie W. Buckley.

Edna P. Alter Mexican Settlement Association, Pasadena, Calif., \$8,000, for a maternity ward, anonymously.

St. Luke's Hospital, New York, \$7,500, the income to be used for members of the Artists' Fund Society, by the will of George H. Story.

Exeter Cottage Hospital, Exeter, N. H., \$5,000, anonymously; \$500, by the will of Miss Gordon of Washington, D. C.; \$500, under the will of Mrs. Soule; \$100, by the will of the late Miss Ann Flagg, and \$100, from the father of a patient.

Touro Infirmary, New Orleans, for maternity work, \$5,000, by Dr. J. W. Newman.

Presbyterian, Eye, Ear and Throat Hospital, Baltimore, \$3,000, by the will of Mrs. Mary S. Butler.

St. Vincent's and St. John's hospitals, Cleveland, each \$1,000 by the will of F. H. Glidden.

Spartanburg General Hospital, Spartanburg, S. C., the greater part of the income from the estate of Mrs. Alice M. Lee, for the founding of the "Boyce Lee Memorial" for charity patients.

Flagler Hospital, St. Augustine, Fla., property facing the institution, for a park to be maintained by the hospital trustees; by Mr. Don H. Bacon.

Durham (N. C.) County Health Department, a touring car, by the Civic League of Durham.

**Annual Congress on Medical Education, Licensure, Public Health and Hospitals.**—The annual Congress on Medical Education, Licensure, Public Health and Hospitals will be held at the Congress Hotel, Chicago, March 5-7, 1923. This year the U. S. Public Health Service will participate in the conference. The provisional program of the congress follows. On the first day, March 5, during the forenoon the Council on Medical Education and Hospitals, will present a program as follows:

1. Remarks by Chairman, Dr. Arthur Dean Bevan, Professor of Surgery, Rush Medical College, Chicago.
2. Report of the Secretary, Dr. N. P. Colwell, Secretary of the Council on Medical Education and Hospitals, Chicago.
3. Report on Investigation of Graduate Medical Schools, Dr. Louis B. Wilson, Director of the Mayo Foundation of Medical Education and Research, Rochester, Minn.
4. The Medical Curriculum, coordination of courses to increase efficiency, Dr. E. Stanley Ryerson, Secretary, University of Toronto Faculty of Medicine, Toronto.
5. Nursing Education and Service. A Report from a Special Committee of the Council on Medical Education and Hospitals, by the Chairman, Dr. Robert W. Lovett, Professor of Orthopedic Surgery, Harvard Medical School, Boston.



On Monday afternoon the Federation of State Medical Boards of the United States will present the program as follows:

1. Enforcement of the Medical Practice Act, Dr. H. M. Platter, Secretary of the Ohio State Medical Board, Columbus.
2. Needed Revisions in Medical Licensure in Accordance with Present Day Medical Education, Dr. Kendrick C. Babcock, Provost of the University of Illinois, Urbana.
3. A Single Standard for Admission to the Practice of Medicine. By Harry Eugene Kelly of the Chicago Bar.
4. The Hospital Intern Year as an Essential for the License, Dr. Alexander MacAlister, Secretary of the New Jersey State Board of Medical Examiners, Trenton.

In the forenoon of Tuesday, March 6, the Association of American Medical Colleges will present the following program:

1. The Danger of a Stereotyped Curriculum by Dr. Charles P. Emerson, Dean and Professor of Medicine of the Indiana University School of Medicine, Indianapolis.
2. Present Ideals of the Physical Plant in Medical Education.
  - (a) Charles R. Bardeen, Dean and Professor of Anatomy of the University of Wisconsin Medical School, Madison.
  - (b) Dr. G. Canby Robinson, Dean of Vanderbilt University Medical Department, Nashville.
3. The Art of Medicine, by Dr. Irving D. Cutter, Dean of the University of Nebraska College of Medicine, Omaha.

On Tuesday afternoon the American Conference on Hospital Service will give the following program:

1. Introductory Remarks by Dr. Frank Billings, President of the American Conference on Hospital Service.
2. The Role of Non-Medical Clinical Assistants in Hospitals Without Interns, by Dr. S. S. Goldwater, Director, and Dr. W. M. Blue-Stone, Assistant Director, Mt. Sinai Hospital, New York.
3. Liability of the Hospital for the Acts of Its Servants, by John A. Lapp, Director, Department of Social Action of the National Catholic Welfare Council, Chicago.
4. The Relation of the State University Hospital to the Medical Profession, by Dr. C. P. Howard, Professor of Medicine in the State University Iowa College of Medicine, Iowa City.
5. Annual Report of the Hospital Library and Service Bureau, by the Director, Miss Donelda R. Hamlin, Chicago.

On Wednesday, March 7, during the forenoon the Council on Health and Public Instruction will present the following program:

1. "Hygeia," A Journal of Individual and Community Health, by Dr. Victor C. Vaughan of the Editorial Board.
2. Symposium: The Medical Profession and the Laity.
  - (a) From the Standpoint of the Layman, Dr. Walter Dill Scott, President of Northwestern University, Evanston, Ill.
  - (b) From the Standpoint of the Health Officer, Dr. Watson S. Rankin, Secretary of the North Carolina State Board of Health, Raleigh.
  - (c) From the Standpoint of the Practitioner, Dr. Frederick C. Warnshuis, Secretary of the Michigan State Medical Association, Grand Rapids.
  - (d) From the Standpoint of the Board of Trustees of the American Medical Association. Dr. Frank Billings, Chicago.

On Wednesday afternoon the program given under the auspices of the U. S. Public Health Service will deal with:

The Education of Sanitarians and the Future of Public Health in the United States.—A report of progress from the Committee of Fifteen appointed by Surgeon General Cumming of the United States Public Health Service at the Conference held in Washington, March 14, 1922.

Tuesday evening the Federation of State Medical Boards will hold its annual dinner followed by its regular executive session.

#### LATIN AMERICA

**Personal.**—Dr. Juan N. Corpas has been appointed dean of the medical school of Bogotá, Colombia, succeeding Dr. L. F. Calderón, who had filled the position for many years.

**Cancer Ward in Havana.**—A ward for cancer patients has been set aside at the Havana Municipal Hospital. Dr. Gustavo de los Reyes will be in charge of the radium treatment.

**Public Health Propaganda in Salvador.**—The department of public health of El Salvador has begun publishing in the newspapers a series of articles on infant care and feeding.

**New Argentine Journal.**—The Phthysiologic Association of the Tornú Hospital in Buenos Aires has begun the publication of a journal, *Revista de la Asociación de Tisiología del Hospital Tornú*. The editor is Dr. Nicolás Romero. Plans are now being made in Argentina for the organization of a society of phthysiology having as its nucleus the present Tornú society.

**New Hospitals.**—A new hospital is being built at Loja, Ecuador, the proceeds of 6 per cent. of the provincial taxes being employed for this purpose.—A children's hospital and a general hospital were recently opened in Montevideo: Pedro Visca Hospital and Pasteur Hospital, respectively.—A day nursery was established recently at Quito, Ecuador, by the Child Welfare Society. The medical director is Dr. J. B. Arzube Cordero.

**Sixth Latin American Medical Congress.**—According to a statement by Dr. F. M. Fernández, secretary of the medical congress held recently at Havana, not less than thirty-one resolutions were adopted. Recommendations were made for the erection of a statue of Carrión at Lima, as urged by the previous congress; establishment of medical service in all steamships; organization of cancer institutes in all countries now lacking such institutes; eradication of plague, yellow fever, and hookworm disease, and control of malaria; organization of a Pan-American association of eugenics and homiculture at the Pan-American conference to be held at Santiago, Chile, in March; appointment of a committee to prepare a model bill regulating importation and sale of narcotics; enforcement of the Montevideo convention as to reciprocity of professional diplomas; study of hydatid disease, paragonimiasis and bronchopulmonary spirochetosis; creation of anatomic museums in all Latin American medical schools; organization of a Latin American Medical Association with headquarters at Montevideo, charged with the duty of publishing a journal; standardization of medical courses, terminology and pharmacopeias; restriction of Chinese immigration; simplification of antirabic treatment; public education in heart diseases and their causes; adoption of laws against abortion; support of the Gorgas institute at Panama; active campaigns against venereal diseases; uniformity in quarantine laws; protection of the health of pregnant women; creation of a Latin American committee on nerve and mental hygiene. The next Latin American congress will meet at Mexico City within a period of not less than two and not more than three years.

#### FOREIGN

**The Medical Press and Pasteur.**—Our exchanges for December, from every quarter of the globe, bring one long paean of laudation of Pasteur.

**Cajal Street.**—A Spanish journal gives a list of more than 100 towns in Spain which have renamed a street in honor of Prof. Ramón y Cajal. Some have installed large artistic tablets to designate the street.

**Gift for Glasgow University.**—Mr. Henry Mcchan has donated £25,000 (approximately \$115,000) to the University of Glasgow for the foundation of a new chair of public health in the university.

**Cheese Poisoning Traced.**—Dr. Cameron Macaulay, assistant medical officer of health of Dover, England, recently traced 126 cases of food poisoning to a single red Canadian cheddar cheese, portions of which had been distributed to eighty households.

**Election of Officers.**—The National Academy of Medicine at Madrid recently reelected Dr. Carlos M. Cortezo president; Dr. A. Fernández Caro, vice president; Dr. Espina y Campo, librarian; Dr. Nicasio Mariscal, secretary, and Dr. Martín Bayod Martínez, treasurer.

**Committee on Hygiene Meets in Geneva.**—The committee on hygiene of the League of Nations convened at Geneva, January 8. Among the questions discussed was the nomination of a representative of the American hygienic service as a member of the committee, and collaboration with the international sanitary bureau at Washington, D. C. Dr. Bernard Nocht, director of the Hamburg Institute, has been appointed a member of the health commission of the league.

**Tributes to Physicians.**—The city of Ocaña recently placed a tablet on the house in which Dr. Espina y Capo of Madrid was born, and a street was renamed in his honor.—Professors Jemma and Caronia of Naples were recently tendered a banquet as a token of appreciation for their work in pediatrics. It has resulted in founding an actual Neapolitan school of pediatrics. Their publications have made their names well known in this country. They are the editors of *Pediatria*, which is regularly summarized in the Current Literature department.

**The Next German Congress for Internal Medicine.**—The date for the Thirty-Fifth Kongress für innere Medizin has been appointed as April 9 to 12, 1923, at Vienna. Prof. K. F. Wenckebach—at present in this country—is to preside, and the two subjects appointed for discussion are "Lethargic Encephalitis" and "Arterial Hypertension." Economo of Vienna and Nonne of Hamburg open the discussion on the first topic, and Durig of Vienna and Volhard of Halle, on the second. No other communication on these two topics will be allowed, but free discussion is planned. Communi-



cations can be addressed to Professor Wenckebach, Lazarettgasse 14, Vienna.

**The Beneke Prize.**—Our German exchanges give the particulars for competition for the endowed Beneke prizes, offered by the University of Göttingen. The competing articles must be sent in anonymously and be received before Aug. 31, 1924. The topic is "Experimental Research on the Structure of the Carbon Framework in the Biliary Acids." The first prize is 1,700 and the second 680 marks. For the year 1925, the topic is "Consequences of Amitotic Cell Division for the Constitution of the Nucleus as Studied in Plants and Animals (Exclusive of Unicellular Organisms); in particular, the behavior of the chromosomes as to the shape and numbers when a cell, after amitotic division, divides again by karyokinesis." Also the vigor of development of cells after amitotic division is to be investigated. The prize is 1,000 marks.

**Foreign Congresses.**—At the International Congress of Ophthalmology, held in Washington in 1922, the invitation of the ophthalmologic societies of Great Britain and Ireland to hold the next congress in London in 1925 was accepted. A general committee consisting of representatives of the inviting societies has since met and has formed an executive committee, empowered to make arrangements for the 1925 congress. It will be held in London, July 21-24. The three official languages will be English, French and German. The subscription for membership has been fixed at the sum of £2 (\$9.30). Invitations will be sent to the principal ophthalmologic societies or other representative bodies in every nation, asking them each to nominate a delegate to the congress who would be responsible for promoting its interests in the country which he represents. Leslie Paton, F.R.C.S., 29 Harley Street, London, W., is the secretary. — At the annual meeting and banquet of the British Association of Economic Biologists at the University of Manchester, December 15, Dr. W. Laurence Balls introduced a discussion on "Genetics in Relation to Applied Biology," which was followed by a discussion on the place of applied biology in universities and on the relation of biology to medicine. — The annual meeting of the Royal Surgical Aid Society was held in London, December 8. This was the diamond jubilee (fiftieth) anniversary of the society.

**Personal.**—Dr. W. A. Lethem, assistant medical officer of the port of Liverpool, has been awarded the diploma in tropical medicine by the University of Liverpool. — Dr. F. J. Paley was recently invested with the Order of the Knighthood of St. Gregory the Great, conferred on him by the late pope in recognition of his work among the clergy. Following a banquet in his honor, Dr. Paley stated that during the twenty-three years' of its existence, the Diocesan Nursing Home of Brighton had cared for more than 1,000 priests. This included sick priests from England, Ireland, Italy, Spain, France and the South American countries. — Sir William Thorburn delivered the Bradshaw lecture in the theater of the Royal College of Surgeons, December 8, on "The Surgery of the Spinal Cord." — Dr. Ernest H. Starling, professor of physiology in the University of London, has been appointed the first Foulerton professor, under the foundation of the Royal Society, created by the will of Miss L. A. Foulerton. — Sir William H. Bragg, Quain professor of physics in the University of London, has been elected a corresponding member of the Paris Academy of Sciences in the section of physics. — Major Gen. O. E. P. Lloyd, V. C., has been appointed colonel commandant of the R. A. M. C. The rank is next to that of colonel-in-chief. — Dr. Alexander G. Gibson has been appointed lecturer in morbid anatomy at the University of Oxford. — Prof. T. Rovsing of Copenhagen has been elected an honorary member of the Italian Urologic Society.

#### Deaths in Other Countries

Dr. Isaac B. Davenport, well known dental surgeon of the American colony of Paris where he had resided for more than forty years; Knight of the Legion of Honor, died at Le Vesinet, November 4, aged 68. — Dr. John M. Finny, Dublin; a former president of the Royal College of Physicians and of the Royal Academy of Medicine; King's professor in the practice of medicine; aged 81. — Dr. Thomas H. Kellock, December 19, in London, aged 59. — Dr. R. J. Ryle, justice of the peace; at Guy's Hospital, London, aged 67. — Dr. Jules Chambréant, professor of obstetrics at the University of Bordeaux until called to Paris in 1918 to take charge of the national Saint Maurice maternity home. Three of his works had been awarded prizes by the national Academy of Medicine. — Dr. Balard d'Herlinville, president of the medical syndicate of the Havre district.

#### CORRECTION

**Chest Measurement as a Gage of Body Weight.**—In the article by Parmenter and Gray (*THE JOURNAL*, Dec. 23, 1922, p. 2159), the first half of the sixth paragraph should have read:

"Is the weight correlated with the girth as closely at expiration as at the calculated midrespiratory phase used in all our previous papers? This question is suggested by the preference for the former by army examiners<sup>4</sup> in order to forestall draft evasion on the ground of a finding less than the military minimum, and also by Oeder<sup>5</sup> in order to compensate approximately noticeable stoutness." The third footnote should have read: "Miles, W. R., and Root, H. F.: Personal communication to the authors." Footnote 4 was: "Gould, B. A.: Investigations in the Military and Anthropological Statistics of American Soldiers, New York, 1869. Baxter, J. H.: Statistics, Medical and Anthropological, of the Provost General's Bureau, Washington, D. C., 1875. Davenport, C. B., and Love, A. G.: Army Anthropology, Statistics, Medical Department, U. S. Army, Washington, D. C., 1921." Footnote 5 was: "Oeder, G.: *Berl. klin. Wchnschr.* 52: 433 (April 26), 466 (May 3) 1915."

## Government Services

### Annual Report of the U. S. Veterans' Bureau

The first annual report of the U. S. Veterans' Bureau has been issued. The report covers all the World War relief activities of the United States government, and it is proposed to have one or more copies available for reference in all the offices, hospitals and schools of the bureau. The report contains a historical record of the statistics, appropriations and disbursements, and of the principal events leading to the consolidation of the government agencies that have administered the laws for relief of veterans of the World War. An appendix to the report contains reprints of all laws for the relief of veterans of the World War that were approved prior to June 30, 1922.

### Proposed Bill to Aid Disabled Veterans

Through a bill introduced in the House by Representative Wursbach, the director of the Veterans' Bureau is directed to provide hospital, dispensary and other medical treatment, including surgical appliances, to all disabled veterans whose disability was incurred in line of duty. The service is to be rendered to veterans on the presentation of their pension certificates. The bill also provides that whenever a veteran, because of disability, is ordered to a hospital for treatment, transportation shall be furnished him by the Veterans' Bureau.

### Vaccination Free to Postal Employees

The Postmaster General has arranged for the entire personnel of the postal system, numbering 333,000 employees, to be given free vaccination against smallpox and typhoid and paratyphoid fever. The Secretary of the Treasury has authorized all stations of the U. S. Public Health Service throughout the country to accommodate postal workers on their request. It is estimated that 90 per cent. of the railway mail service, which has 23,000 members, have been vaccinated. Postmaster General Work stated that not only the fifty-eight Public Health Service stations recently authorized to make free medical and physical examinations of postal employees, but all other stations, wherever located, will give free inoculations.

### Immigration and Public Health

The Women's Advisory Council to the U. S. Public Health Service met with the Surgeon General, January 12, in Washington, D. C. Among the addresses delivered was one by Dr. Elizabeth B. Thelberg of Vassar College, chairman of the National Council of Women. Dr. Thelberg emphasized the importance of heredity in insanity, and said that 59 per cent. of those now receiving institutional care are from parents one or both of whom give a history of insanity in the family. She called attention to the large number of persons now being discharged from institutional care as cured, many of whom continue to procreate, reproducing in kind. Many other questions of interest were discussed, the program being mainly devoted to the subject of the effect of immigration in its many relations to the public health.



## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Dec. 23, 1922.

#### Surgeon Sued for Operating Without Patient's Consent

Owing to the great interest and importance of the case referred to briefly in *THE JOURNAL*, Dec. 30, 1922, p. 2243, a more complete account, taken from the *South African Medical Record*, which has just come to hand, may well be given: In the Cape Provincial Division of the Supreme Court before Justice Watermeyer and a jury, a suit for damages in the amount of \$50,000 was entered against Dr. C. C. Elliott, a Capetown surgeon, for amputation of the penis without the consent of the patient or, alternatively, for performing an unnecessary operation. The plaintiff, aged 50, was admitted to the New Somerset Hospital, Capetown, suffering from gangrenous ulcer of the penis. After a careful examination by the defendant, who is visiting surgeon to the hospital, and by Prof. G. B. Bartlett of the University of Capetown, who is pathologist to the hospital, it was decided that the patient was suffering from cancer, and that to save his life the penis should be amputated. This was done, but the plaintiff stated that he consented to operation only under the idea that a circumcision was to be performed. He saw a report in which Professor Bartlett recommended that the growth should be treated as "malignant," but he did not know what this meant. Some medical evidence was given for the plaintiff throwing doubt on the diagnosis of cancer and suggesting that, in any case, radium or the roentgen ray should have been tried before proceeding to amputation.

Dr. Elliott stated that he had had a good many similar cases, and had given this one much thought and research, looking up authorities. In his opinion, roentgen-ray or radium treatment would have been not only inefficient but dangerous. It was the duty of the house surgeon to obtain the consent of the patient, and he assumed that this had been done. The only responsibility he took was with regard to the operation. He took none with regard to obtaining consent, which was an administrative matter. The house surgeon explained that, as the patient was transferred from one ward to another in preparation for operation, he unfortunately assumed that the patient's consent had been obtained.

Prof. C. F. M. Saint of Capetown University gave evidence that, on Professor Bartlett's report, amputation was the proper treatment. Since this case the hospital has adopted a printed form which must in all cases be signed by a patient, giving consent before an operation. In summing up, the judge said that a man did not waive control over his body by going into a hospital, and that consent for operations should always be obtained, as admitted by the defense. In this case, by an oversight it was not obtained, and the question arose, Who was responsible? It was clear that no moral responsibility attached to Dr. Elliott, who was justified in assuming that consent had been obtained. But that did not affect the legal position, for if an assault had been committed, it did not matter whose duty it was to ask for consent condoning that assault, everybody concerned being equally liable. When it came to damages, the jury would have to consider, first, whether the patient was suffering from cancer; next; Was the operation necessary to save life? If these two questions were answered in the affirmative, the jury would have to consider whether the patient had suffered any damage at all. The jury by a majority of 6 to 3 gave a verdict for the defendant, for whom judgment was given, with costs. It should be noted that the surgeon's plea that he was not

responsible for obtaining the consent of the patient failed, and that he escaped damages simply because the jury found that the plaintiff had suffered none. The moral for operators is obvious.

#### Arsenic in Cocoa

Arsenic occurs as an impurity in so many chemicals, and chemicals enter so much into present-day methods of food preparation, that from time to time the country is startled by the discovery that this deadly poison has been found in some common article of diet. It may be remembered that some years ago an epidemic of arsenical poisoning occurred in the north of England owing to contamination of beer with arsenic. One of the large cocoa manufacturers in this country has been summoned under the Sale of Foods and Drugs Act for selling cocoa adulterated with arsenous oxid to the extent of one-tenth grain per pound. The analyst for the prosecution said that this was a dangerous proportion. A royal commission had suggested one one-hundredth grain as the limit that should be allowed, and he and other analysts worked according to that. For the defense, it was submitted that even if a man consumed in the day five cups made with this cocoa, he would take into his system only one one-hundredth grain. Asked if he suggested that this would be harmful, the analyst replied that if a man took it for three weeks it would not necessarily be harmful, but that was getting on the line where it might be. The cocoa firm employed eighteen qualified chemists to analyze every article coming into the factory, and forty articles were tested for arsenic. Last July some of the cocoa supplied was found to contain faint traces of arsenic. The chemists were put on double shifts, working night and day. Everything in the place was analyzed, and at last it was found that the impurity was in potassium carbonate, which had been used for years in small quantities to make the cocoa more soluble and more digestible. It was bought from one of the best firms in the trade, which had been unable to explain its presence.

The firm instantly sacrificed the whole of the cocoa affected, 350 tons. It had succeeded in getting supplies of the alkali absolutely free from arsenic. It had instituted a new test, and was able to say that from August 1 every ounce of cocoa from its works was free from impurity. The manufacturers considered whether it was possible to get back the cocoa they had sent out to the trade, but decided that it was not, because they had 65,000 customers, many of them wholesalers. Chocolates did not come into the question at all, because they were made from cocoa which did not contain potassium carbonate. Sir William Wilcox, medical adviser to the Home Office, stated that this was the first case he had heard of in which arsenic had got into food through potassium carbonate. A fine of \$100, with \$260 costs, was imposed.

#### The Birth Rate

At the Royal Statistical Society, Mr. T. T. S. de Jastrzebski recently read a paper on "Changes in the Birth Rate and in Legitimate Fertility in London Boroughs, 1911 and 1921." In the nine months following the census of 1921 there was a fall of 9.4 per cent. from the same period of 1911, although the proportion of married women under 45 years of age in the population should have given an increase of 1.7 per cent. The decline in infant mortality, however, reduced the fall in the effective birth rate—i. e., the rate obtained by deducting the deaths under 1 year of age from the births—to 4.2 per cent. Legitimate fertility showed a decline of 12.8 per cent., or when standardized for variation in the ages of the married women under 45, of 11.7 per cent. The gap between the boroughs with better economic conditions and those with a poorer population had diminished sensibly. Notwithstanding the fall in both the birth rate and in legitimate fertility, the natural increase by excess of births over deaths



in 1921 was 390,335 as against 354,328 in 1911, and this gain was at the first period of life. There was no reason to consider an infant mortality of between 50 and 60 for each thousand births as beyond the scope of our legitimate expectations. In the view of the speaker, the reproductive forces at work in the nation are greater than the destructive, and the problem of the immediate future is one of overpopulation rather than of underpopulation.

#### The Causes of Accidents

The Medical Research Council has issued two reports of the Industrial Fatigue Research Board on the causation of industrial accidents. Fatigue is held to be an important contributory cause, as are also psychic influences, such as alertness and attention. Another factor is inexperience, which generally means youth. But, besides inexperience, there are certain qualities of youth, such as bravado and failure to realize danger, which tend to disappear with age. Alcohol also plays a part. Inadequate or unsuitable lighting are important, and, similarly, the temperature of the worker's environment seems to have a considerable influence.

### PARIS

(From Our Regular Correspondent)

Dec. 22, 1922.

#### International Intellectual Cooperation and the League of Nations

In previous letters I have referred to the origin, membership and plans of the commission on international intellectual cooperation, which was appointed by the League of Nations (THE JOURNAL, June 10, 1922, p. 1828; July 29, 1922, p. 492, and Sept. 2, 1922, p. 836). Three committees appointed by the commission are holding a session in Paris at present; namely, the committee on bibliography, the committee on matters pertaining to universities, and the committee delegated to study into the question of intellectual ownership.

The committee on bibliography is engaged in the coordination of bibliographic enterprises undertaken in the various countries, with a view to avoiding duplication of effort and assuring to scientists and investigators the advantages of a complete bibliography easily accessible. The committee on university matters is dealing with various questions relative to the organization of the international congress of universities. The committee, however, recognizes the fact that political conditions will not permit the convening of such a congress at present. But it is possible to take up at once an extended inquiry into the best means of bringing about a cooperation between the universities. Opportunity is offered also for the discussion of kindred questions, such as the publication of an annual catalogue containing a list of all the courses given in the universities of the world, and the creation of a bureau of information pertaining to universities.

The committee on intellectual ownership is studying more particularly the question of the extension of authors' rights in the field of science, so as to secure to the individual scientist and the field of science represented by his country a more adequate participation in the benefits arising from the utilization of his discovery. At present the system of patents protects only the inventor of the industrial application of a scientific discovery. The mathematician, the physician, the chemist and the biologist, whose scientific discoveries made possible the invention, derive no benefit either for themselves or for their laboratories from the utilization of their works. At the instance of the chairman, M. Bergson, the committee delegated M. Ruffini, professor in the University of Turin, to draw up a plan which, subject to the approval of the commission on intellectual cooperation and the council of the League of Nations, might be used to establish the juridical

principles for international protection of scientific discoveries. Such a plan might serve later as the basis for drafts of laws which, with the necessary modifications, might be presented to the parliaments of the various countries. With this object in view, M. de Torrès y Quevedo of Madrid was designated to study the possibilities of applying, in a practical way, the juridical principles and the suggestions for legislation contained in the document to be drawn up by Ruffini.

#### Pasteur as an Artist

The son-in-law of Pasteur, M. René Valléry-Radot, has published a book that presents a side of Pasteur's character that is but little known. Before he became the great scientist whose centenary the entire world is about to celebrate, Pasteur was known for his drawings in black and white and his pastel work. Between the ages of 15 and 20 (from 1836 to 1842), Pasteur had drawn the portraits of all the notables of his home town, Arbois, department of Jura. These portraits reveal the fact that, young though he was, he already possessed remarkable ability as an observer and artist.

#### Aid for Scientific Research

M. Paul Appell, rector of the University of Paris, has just received from Madame Hélène-Edouard Nathan two sums of 100,000 francs each. The first is to be used for the laboratories and for scientific research, half in accordance with recommendations of the Comité national d'aide à la recherche scientifique, and the other half is to be employed to meet urgent scientific needs. The second sum of 100,000 francs will be utilized for honor loans to worthy students. These loans, to the number of twenty of 5,000 francs each, will be made in the name of Madame Hélène-Edouard Nathan, and will be granted in response to requests made to the scholarship committee of the Société des amis de l'université de Paris. Applicants for these loans may be either Frenchmen or foreigners, but they must be enrolled in one of the five faculties of the University of Paris.

#### The Place of Physical Training and Athletics in the Schools

The consulting committee on physical training and athletics in the schools has just approved a preliminary draft of a budget pertaining to the detailed and rational organization of physical education in the schools of various grades. This budget provides for the creation, at the Faculté de médecine, of a course of instruction in physiology as applied to physical education, with a view to preparing physicians for the duties that devolve upon them in connection with physical education. The number of special instructors in physical training in the secondary and technical schools and in colleges will be increased. In the elementary schools, the regular teachers will give the physical training needed, and will assign to it the same importance as to intellectual training. Provision is also made for appropriate special instruction to be given pupil-teachers.

#### Aid for Students

The Association pour l'extension des études pastoriennes, founded two years ago, has endeavored to ameliorate, at least in some degree, the trying situation of university students, for whom the high cost of living makes it very difficult to continue their studies. The funds collected by this society enable young investigators to devote their time to research work in the Pasteur institutes and the biologic laboratories of France and its colonies. The scholarships that are accorded, on the recommendation of a committee of eight members presided over by Dr. Roux, director of the Pasteur Institute, amount ordinarily to 24,000 francs, and cover two years of study. Fifteen such scholarships have already been granted. The association, in order to be in a



position to continue its work, has issued an appeal for funds, calling more particularly on those who, in the past, have themselves been indebted in any way to the Pasteur institutes.

#### Aid for War Injured

The Union des colonies étrangères, a society formed by the foreign colonies of France in aid of the victims of the war, recently held its general meeting under the chairmanship of Mr. Walter Berry (president of the American chamber of commerce), who is the president of the administrative council. M. Joseph Asscher, general secretary, read his report showing the work accomplished by the society. More than six million francs have been expended in France, and 8,235 disabled or injured men have been given in schools the supplementary training they needed. Mr. Berry announced that he was about to return to the United States, and that he hoped to come back with large gifts with which to carry on the work of the society.

#### Distinctions Accorded to Dr. Vaillant

Besides the gold medal accorded to Professor Bergonié of Bordeaux, the Carnegie Hero Fund has granted the same distinction to Dr. Vaillant, another victim of roentgen rays. Vaillant received also an allocation of 50,000 francs.

#### Election of Officers of the Academy of Medicine

As Dr. Chauffard, professor of clinical medicine at the Faculté de médecine, who has been the vice president of the Academy of Medicine, has become the president for the year 1923, in accordance with the constitution, the academy has elected Dr. J. A. Doléris vice president. Dr. Doléris is an honorary obstetrician to the hospitals of Paris, and has been a member of the Academy of Medicine since 1905. The academy also elected by acclamation Dr. Souques as annual secretary, and Professors Pouchet and Schwartz as members of the administrative council.

#### Death of Dr. Jules Chambrelent

Dr. Jules Chambrelent, formerly assistant professor at the Faculté de médecine of Bordeaux, has died at the age of 68. He was born in 1854 and studied medicine in Bordeaux. In 1889 he became instructor in clinical obstetrics at the Ecole de médecine of Toulouse. In 1892 he became assistant professor at the Faculté de médecine of Bordeaux. Chambrelent has studied especially the subjects of stillbirth and infant mortality, and in 1917 he gave a course in child welfare. He was also a collaborating editor of the *Traité de l'art des accouchements* published by Bar, Brindeau and Chambrelent. In 1917 the Academy of Medicine accorded him the Tarnier prize for the value of his works as a whole. During recent years he had been the director of the Maison Maternelle Nationale at St. Maurice, near Paris.

### BELGIUM

(From Our Regular Correspondent)

Dec. 27, 1922.

#### Prison Reform

In a previous letter, I referred to various hygienic reforms in the Belgian penitentiary system. As a result of statistics published by the anthropologic service, which was established in 1907, the minister of justice has been prevailed upon to consider the immediate creation at Merxplas of a sanatorium for the tuberculous, a hospital for patients with venereal disease, and a home for epileptics. It is certainly the only logical course to take advantage of the time spent by a prisoner in a penitentiary to give him good medical care and improve his health in every way possible. The bacteria carrier who is not sterilized in prison will later resume his place in society. If he is returned to society in the same

condition in which he arrived (or possibly in a worse state, for his contagiousness may have increased), he will be the cause of the spread of disease in the family and in the workshop. By giving to prisoners renewed health and strength, we are affording them the means of surmounting the difficulties that they will experience in earning their living, and we shall thus increase the chances of permanent reformation. When it is a question of tuberculosis or syphilis, the two diseases that are encountered at every turn in our prisons, the reasons cited have especial value.

#### Celebration in Honor of Eugène Lust

The Ecole centrale de puériculture held recently a celebration in honor of Dr. Eugène Lust, who founded in 1897 the first consultation center for infant welfare. It was due to his influence that such centers were established in all parts of the country. He was the founder of the Ligue nationale belge pour la protection de l'enfance du premier âge, the Ecole de puériculture and the Commission permanente du lait. He was also the general secretary of the Union internationale.

#### Diverticula of the Bladder

In discussing diverticula of the bladder before the Société belge d'urologie, Dr. François emphasized recently the great value of cystoroentgenography in the establishment of a diagnosis. Cystoroentgenography is accomplished by the injection into the bladder of from 100 to 150 c.c. of a 30 per cent. solution of sodium iodid, after which a roentgenogram is taken. The patient is then allowed to urinate, whereupon a second plate is made. As regards surgical intervention, this should not be decided on unless the trouble is very marked.

### BUDAPEST

(From Our Regular Correspondent)

Dec. 15, 1922.

#### Epidemic Diseases in Hungary

Some interesting facts concerning the statistics of epidemic diseases in Hungary have been brought to light by a recent book, based on the figures published by the commission of the Hungarian Bureau of Statistics.

#### PREVALENCE

The author points out that, ever since the year 1874, the death rate from epidemic diseases in Hungary has shown a steady decrease, except in the case of scarlet fever, which has remained almost stationary since 1876. Smallpox, typhus exanthematus and cholera, on the other hand, at present appear only sporadically, and are usually suppressed at once; moreover, these diseases are invariably imported into Budapest, the infection being traced in every case to some source outside the city.

Typhoid, on the whole, has been less frequent in Hungary since the improvement of the sewerage system and waterworks. During the last two years, however, there has been an increase in the number of cases of typhoid in Budapest, and since the source of infection can hardly be in the city itself, every effort is made to obtain the history of each fresh case so that measures can be taken to check the evil at the fountain head. Scarlet fever has also been more or less endemic in Budapest for several decades. In a table showing the scarlet fever statistics for the last three years in forty-six European cities, Budapest ranks successively as the forty-first, forty-second and forty-third, the only towns occupying a lower place on the list being Bucharest, Lemberg, Odessa, Petrograd and Warsaw.

#### CAUSES

The reason for these alarming figures is to be found in the terrible poverty prevailing in the lower quarters of



Budapest, and in the ignorance and indifference that too often accompany it. From 85 to 90 per cent. of the deaths from scarlet fever in that city occur among the poorer classes, and are in great part due to the insanitary conditions in which they live and the overcrowding of their houses. The common practice of receiving a number of lodgers night after night in one room is a potent factor in the spread of disease, as well as an obstacle to the isolation of the patient.

#### REMEDIES

Any material improvement in the condition of the poorer classes in Budapest, therefore, would do much to eliminate scarlet fever, or at least would help to solve a problem which threatens to become a very pressing one. In the meantime the only effectual means of checking the spread of infection is strict isolation; hence it is of the utmost importance that every case of scarlet fever be reported at once to the proper authorities. The recent statistical returns prove beyond all doubt that more than half the cases are never registered, and in the poorer quarters of the city the mortality is extremely high.

The only remedy for this abuse would be to open a special "epidemic bureau," directed by energetic and reliable physicians, having under them a staff of men whose duty it would be to find out and report every case of scarlet fever in the city. The physicians, besides visiting the various patients, would be required to supervise removal to the fever hospital and disinfection of houses, etc.; while not the least important part of their duties would be the discovery of the source of the epidemic. The work of an organization of this kind could be greatly facilitated by systematic medical supervision of schoolchildren, such as is now carried out in England and Germany.

With regard to the isolation of scarlet fever patients, there is no doubt that the question is often complicated by the fact that it is not always easy to diagnose the disease in its early stages, particularly when there is little or no rash. Much of this difficulty might be overcome if the medical course included six months' attendance at a fever hospital. It is very important that club physicians, above all, should be capable of recognizing the earliest signs of scarlet fever, since their examination of patients must of necessity be very rapid, and the symptoms of incipient disease might be easily overlooked by one who was not an expert in diagnosis. Competent club physicians are particularly necessary in Budapest, where, out of a population of 1,000,000, more than 300,000 persons are members of sick clubs. But a correct diagnosis, important as it is, is not everything, and, after the physician has notified the case, he often has considerable difficulty in isolating the patient.

A card of warning on the front door may keep away visitors; but the different members of the household will probably continue to go to their offices or workshops, and to travel in public conveyances, thus scattering infection broadcast. The poor, who regard the doctrine of infection and disinfection as a superstition of the rich, resent having their bedding taken to the dispensary for fumigation, and evade the law by hiding it in the house of a neighbor, who probably falls a victim of his own generosity, and in his turn helps to spread the disease in a similar manner.

#### FEVER HOSPITALS

There can be no doubt that, except when the patient and his nurse can be completely isolated from the rest of the family, and the physician can rely on the intelligent cooperation of the entire household, the proper place for a patient with scarlet fever is the fever hospital. This fact has at last been recognized by the state, and a number of fever hospitals for the accommodation of patients during an epi-

demie will shortly be erected; while every effort will be made to overcome popular prejudice against such institutions by most careful attention to the comfort and well-being of their inmates. One cause for the dislike of hospitals entertained by the general public is the fear of infection from other patients.

That this fear is not wholly groundless has been proved by a Budapest practitioner, Dr. Preisich, who stated, in an article, that during the year 1912 as many as 137 persons suffering from scarlet fever contracted other diseases, such as measles, diphtheria and varicella, and in some cases more than one; while eighty-one patients having diphtheria and varicella contracted scarlet fever. This danger, of course, can be avoided by building special hospitals for every form of contagious disease.

#### SOURCES OF INFECTION

At present, the chief source of infection is the provinces, where, owing to defective hygiene, sporadic cases of scarlet fever are constantly occurring, and may easily become the precursors of a formidable epidemic throughout the country. The utmost vigilance, therefore, should be maintained in country districts, and every precaution should be taken to prevent the infection being carried into towns. The same care should be observed with regard to diphtheria, which is as much a menace to public health as scarlet fever, though, thanks to the modern treatment of this disease by serums, the mortality is now considerably less.

#### BERLIN

(From Our Regular Correspondent)

Dec. 16, 1922.

#### Vital Statistics of the Large Cities of Germany for the Third Quarter of 1922

As compared with the second quarter, the number of living births in the large cities of Germany for the third quarter of 1922 showed a considerable diminution, the total having fallen from 75,726 to 67,512, which signifies, on an annual basis, a decrease from 18.5 to 16.4 for each thousand of population. This marked decline in the birth rate, it is thought by some, may be regarded as the reflection of the effect of the first sharp advance in the prices of commodities during the last quarter of 1921; for the duration of the decline, extending over several weeks, as well as its intensity, corresponded to the terrific advance of the American dollar (as determined by the number of marks required to purchase one dollar) during the corresponding months of conception; namely, October and November, 1921. On the other hand, the mortality for the third quarter, 1922, although, during this period, the sharpest advance in prices took place that the country has experienced thus far, decreased to such an extent that the death rate per thousand of population (10.1) went below the death rate for the third quarter of 1921 (10.4), which was the lowest heretofore recorded. We are, therefore, face to face with the paradoxical fact that the death rate sinks as the prices soar. This phenomenon admits of only one explanation; namely, that at present what is taking place is not so much an advance in prices, in the true sense of the term, as it is a progressive depreciation of money values, to which we may ascribe an influence on the trend of the birth rate, but which exerts no effect on mortality conditions, so long as the masses are able to adapt the economic conditions to the money depreciation. One favorable factor affecting the death rate was the advantageous character of the weather during the summer of 1922, to which the absence of the summer peak of infant mortality and of acute and infectious diseases of the digestive organs may be ascribed. Also with reference to other infectious diseases,



the oft made observation that cool and rainy summers keep down epidemics was again confirmed. However, the marked decline in the death rate for the third quarter of 1922 as compared with the rate for the preceding quarter is due mainly to the great decrease in the mortality from pneumonia and tuberculosis. The pneumonia death rate dropped from 1.46 to 0.72 per thousand of population, and the tuberculosis rate fell from 1.80 to 1.31. During the third quarter of 1921, the death rate from tuberculosis, 1.22, was only 0.09 less than in the third quarter of 1922.

#### Progress in Roentgenography

The ordinary photographic plate is sensitized mainly to blue and violet light. Therefore, in the corresponding photograph the dark blue sky will look white, while a yellowish red flame will appear almost black. Only with the discovery of the monochromatic plate did it become possible to make photographs that reproduce for the eye the various colors in their lights and shades. Such plates are spoken of as being sensitized to red, yellow or green rays. There are also different kinds of roentgen rays, which are distinguished by their respective wave lengths; but heretofore there has been no method known by which the photographic plates used in roentgenography may be sensitized to them, in a similar manner. Now, however, Dr. C. Schleussner would seem to have solved the problem by adding a secondarily radioactive substance (*Sekundärstrahler*) to the light-sensitive substance of the roentgenographic film or plate. Such secondary radioactive substances also emit rays when roentgen rays come in contact with them and make the plate extremely sensitive to their action, although not at all sensitive to ordinary light. The result is quite startling. Roentgenograms of bones taken with the sensitized roentgenographic plate bring out all the finer details in the structure of the bones, which otherwise can be observed only in the sawed ends of the bones themselves. By means of this invention, it is hoped that it will be possible to secure information of pathologic changes and of injuries that the ordinary plate entirely fails to record; it brings also the problem of cinematography by means of roentgen rays one step nearer.

#### Gymnastics for Infants

Detlev Neumann, a former army officer and athletic director at the *Militärturnanstalt*, after many experiments extending over a period of years, has worked out a system by which the muscles of infants may be strengthened by gymnastics and a favorable effect on the whole organism secured. Judging from the practical trials of the system, which were carried out with healthy and sick infants with the aid of Professors Bier and Langstein, the results are said to be very satisfactory. For the gymnastic exercises a table is used that is large enough to allow the child to tumble about on it at will, but not so large but that the assistant can control his movements with the hands. A well padded underlay is the only requisite for the Neumann-Neurode system of gymnastics for infants. After three or four repetitions of the same exercise, the child usually knows what is expected of him. The child must never be allowed to lie on the table without supervision, for the motions may become so exaggerated as to lead to unexpected results. In incipient cases of rickets, exceptionally favorable results have been obtained by the use of this system. It is indicated also for children that learn to walk late and do not make the proper effort, that find it difficult to sit up straight, that have a flabby musculature, and that cannot stand on their feet without assistance. In all such cases, according to a report issued by the Empress Augusta Victoria House, marked improvement was noted in two months, and later a complete cure was effected.

## Marriages

ARTHUR WESLEY ANDERSON, Cumberland, Iowa, to Marguerite Lucille Hansen of Grand Rapids, Mich., December 28.

WALTER HAROLD CULLEY, Harrison, Ohio, to Miss Audrey Genevieve Simms of Moundsville, W. Va., December 3.

FRANK W. SHELTON to Miss Bess F. Crosson, both of Independence, Iowa, at Kansas City, Mo., December 9.

CHARLES SUMNER LEVY, Baltimore, to Miss Ruth Bear of Lonaconing, Md., at Cumberland, December 27.

FREDERICK D. BARKER, Dayton, Ohio, to Miss Mary Wood Roberts of Columbus, November 30.

ARTHUR W. RECORDS, Franklin, Ind., to Miss Edna W. Alfred of Union City, December 21.

EDWIN NASH BROYLES, Atlanta, Ga., to Miss Eleanor Curtis Whiteley of Baltimore, January 6.

FULLER BRYAN BAILEY to Miss Mabelle Carolyn Zimmer, both of Chicago, January 6.

EMMA MAKI WICKSTROM to Mr. Enoch M. Cox, both of Portland, Ore., recently.

## Deaths

Guthrie McConnell ☉ Cleveland; University of Pennsylvania School of Medicine, Philadelphia, 1896; member of the American Association of Pathology and Bacteriology and the American Society of Clinical Pathologists; formerly assistant professor of pathology at St. Louis University, St. Louis; professor of pathology, bacteriology and hygiene at Temple University Department of Medicine, Philadelphia; at one time pathologist to the Barnard Free Skin and Cancer and St. Luke's hospitals, St. Louis; formerly assistant pathologist at the Snodgrass Laboratory, St. Louis, and bacteriologist for the Missouri State Board of Health; served in the M. C., U. S. Army, during the World War; aged 47; died, January 5.

Lemuel Grant Baldwin ☉ Brooklyn; Long Island College Hospital, Brooklyn, 1886; formerly president of the New York Obstetrical Society, the Brooklyn Gynecological Society and the Long Island College Alumni Association; member of the Brooklyn Pathological Society; gynecologist to Brooklyn and St. Peter's hospitals and the Hospital of St. Giles the Crippled, Brooklyn; St. Francis' Hospital, Jersey City; St. John's Hospital, Long Island City; St. Joseph's Hospital, Far Rockaway, and the Huntington Hospital, Huntington; aged 59; died, December 31, at the Skene Sanitarium, from cerebral hemorrhage.

George C. Ross ☉ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1891; member of the American Surgical Association, Philadelphia Academy of Surgery, Obstetrical Society of Philadelphia and the Pathological Society of Philadelphia; served in the M. C., U. S. Navy, during the World War, with the rank of commander; aged 56; on the staffs of the Methodist, Germantown and University of Pennsylvania hospitals and the Lankenau Hospital, where he died, December 27.

Alfred Yale Massey, Belleville, Ont., Canada; Trinity Medical College, Toronto, 1898; formerly a medical missionary in Labrador and for several years chief medical officer for the Belgian government in Africa, where he had worked with Dr. Koch; recipient of the honor of Chevalier de l'Ordre Royal du Lion from the king of the Belgians for his work on epidemic encephalitis; for twenty years medical missionary in the Belgian Congo, where he died recently, aged 51.

Edward Addison Craighill, Lynchburg, Va.; University of Pennsylvania School of Medicine, Philadelphia, 1861; member of the Medical Society of Virginia; also a druggist; veteran of the Civil War; formerly president of the Virginia Pharmaceutical Society and at one time president of the city council; aged 82; died, January 2, from senility.

William Peter Strain, Far Rockaway, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1906; member of the New York Academy of Medicine; visiting pediatrician to the Neponsit Beach and St. Joseph's hospitals; aged 38; died, January 5, at the New York City Hospital, from heart disease.



**Dorsey Dean Metcalf**, Fort Wayne, Ind.; Milwaukee Medical College, Milwaukee, 1911; member of the Indiana State Medical Society; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 40; died, December 30, at the Lutheran Hospital, following an appendectomy.

**Homer Brown Haile**, Madras, Ore.; University of Oregon Medical School, Portland, 1909; member of the Oregon State Medical Association; veteran of the Spanish-American War; served in the M. C., U. S. Army, during the World War; aged 47; died, December 16, from heart disease.

**William H. Morrison**, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1880; member of the Medical Society of the State of Pennsylvania; Philadelphia Neurological Society, and the Pathological Society of Philadelphia; aged 66; died, December 31.

**Curtis Rudolph Estabrook**, Brooklyn; Bellevue Hospital Medical College, New York, 1877; for ten years government surgeon at the mines in Mexico, and at one time attached to the hospital on Blackwell's Island; aged 75; died, January 1, from carcinoma of the throat and tongue.

**John A. McCafferty**, Brooklyn; Fordham University School of Medicine, New York, 1916; member of the Medical Society of the State of New York; formerly registrar of the health department; visiting surgeon to St. Catherine's Hospital; aged 34; died, January 2, from pleurisy.

**Charles McHenry Cooper**, Chatfield, Minn.; University of Minnesota College of Homeopathic Medicine and Surgery, Minneapolis, 1892; former mayor of Chatfield and at one time member of the board of education; aged 57; died, November 23, following a long illness.

**Albert May**, Crothersville, Ind.; Medical Department University of Louisville, Ky., 1875; member of the Indiana State Medical Association; aged 76; died, November 9, as the result of a self-inflicted wound, which severed his jugular vein.

**William Grimsley Taylor**, Greensboro, N. C.; University of Pennsylvania School of Medicine, Philadelphia, 1919; member of Medical Society of the State of North Carolina; aged 27; died, December 28, from pneumonia and pleurisy.

**Henry Peter Wekesser** ⊕ Lincoln, Neb.; University of Nebraska College of Medicine, Omaha, 1908; member of the Southern Surgical Association; aged 42; died, December 15, at St. Elizabeth's Hospital, following an appendectomy.

**Pyrl H. Gunsaulus**, Bronson, Mich.; Detroit College of Medicine, 1894; member of the Michigan State Medical Society; formerly secretary of the school board; aged 62; died, December 27, from pneumonia and heart disease.

**L. Theophilus Hill**, Abbeville, S. C.; University of Maryland School of Medicine, Baltimore, 1882; member of the South Carolina Medical Association; also a druggist; aged 70; died, December 26, from cerebral hemorrhage.

**Edward Blake Oliver**, Fort William, Ont., Canada; Trinity Medical College, Toronto, 1898; health officer of Fort William since 1912, and formerly president of the Ontario Health Officers' Association; aged 45; died recently.

**Milton Bliem Fretz**, Palmyra, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1871; member of the Medical Society of the State of Pennsylvania; also a druggist; died, December 29, from heart disease.

**William Howell Batte**, Memphis, Tenn.; Memphis Hospital Medical College, 1901; member of the Tennessee State Medical Association; aged 43; died, January 1, at the Gartly-Ramsey Hospital, following an operation.

**Oscar Frederick Eastman**, Calgary, Alta., Canada; Northwestern University Medical School, Chicago, 1910; aged 47; died, November 5, from injuries sustained when the automobile in which he was driving, overturned.

**Isham Randolph Page**, Baltimore; New York University Medical College, New York, 1859; member of the Medical and Chirurgical Faculty of Maryland; Civil War veteran; aged 89; died, January 1, from senility.

**Ferdinand Edward Peck**, Starns, Ky.; Southwestern Homeopathic Medical College and Hospital, Louisville, 1898; member of the Kentucky State Medical Association; aged 46; died, December 21, from pneumonia.

**William Walne Wallace**, Birmingham, Ala.; Tulane University of Louisiana School of Medicine, New Orleans, 1921; on the staff of the Hillman Hospital; aged 25; died, December 27, from influenzal pneumonia.

**Julia Maltby Dutton**, Newton, Mass.; Woman's Medical College of New York Infirmary for Women and Children, 1885; aged 78; died, December 15, from cerebral hemorrhage and ulcer of the stomach.

**William Green Hanson** ⊕ Everett, Mass.; Boston University School of Medicine, Boston, 1878; aged 65; died, December 18, at the Massachusetts Homeopathic Hospital, Boston, from pneumonia.

**Ezeckiel Walter Jenkins** ⊕ Denver; University of Tennessee College of Medicine, Memphis, 1907; aged 41; died, December 26, from injuries received when knocked down by a motor truck.

**Martin Luther Malloy** ⊕ Eutaw, Ala.; University of Alabama School of Medicine, Tuscaloosa, 1899; aged 47; died, December 27, in a Tuscaloosa hospital, as a result of stab wounds.

**James Harvey Preston**, Nashville, Tenn.; Vanderbilt University Medical Department, Nashville, 1879; member of the Tennessee State Medical Association; aged 67; died, December 26.

**Charles L. Erwin**, Newport Center, Vt.; University of Vermont College of Medicine, Burlington, 1867; formerly member of the state legislature; aged 78; died, December 26.

**Emile E. Simard**, Montreal, Que., Canada; Victoria University Medical Department, Toronto, Ont., 1883; aged 64; died recently at the Hospital for Incurables, Westmount.

**Collin B. Brown**, Edgewood, Texas; University of Tennessee College of Medicine, Memphis, 1800; aged 68; died, December 30, at the Baylor Hospital, Dallas.

**Hannah M. Brown Romaine**, Los Angeles; Hahnemann Medical College and Hospital of Chicago, 1887; aged 76; died, December 2, from valvular heart disease.

**Thomas J. Talbott, Jr.** ⊕ Baltimore; University of Maryland School of Medicine, Baltimore, 1895; aged 50; died, January 1, from cerebral hemorrhage.

**John G. Scott**, Ottawa, Ont., Canada; McGill University Faculty of Medicine, Montreal, 1879; aged 68; died suddenly, October 29, while on a hunting trip.

**James Spencer Mackey**, Rogersville, Ala.; University of Tennessee College of Medicine, Memphis, 1907; aged 46; died, December 18, from pneumonia.

**Charles Henry Newth** ⊕ Philomath, Ore.; Ensworth Medical College, St. Joseph, Mo., 1889; aged 65; died, November 29, from acute indigestion.

**Harry Asahel Barker**, Burlington, Vt.; New York University Medical College, New York, 1883; aged 69; died, December 28, from pneumonia.

**George C. Hayes**, Williamsport, Ohio; Starling Medical College, Columbus, 1882; aged 69; died, December 30, from cerebral hemorrhage.

**George Hardy Finch** ⊕ Springfield, Mass.; University of Vermont College of Medicine, Burlington, 1898; aged 54; died, December 18.

**William J. Holloway**, Chappells, S. C.; University of Georgia Medical Department, Augusta, 1868; aged 77; died, December 28.

**Arthur Beever Westfall** ⊕ Lafayette, Ind.; Kentucky School of Medicine, Louisville, 1890; aged 62; died suddenly, December 22.

**Julius Gruenewald**, Glasgow, Ill.; Missouri Medical College, St. Louis, 1891; aged 65; died, December 30, from pneumonia.

**John Seth Farrell**, Barnes City, Iowa; State University of Iowa College of Medicine, Iowa City, 1877; aged 71; died in December.

**Stephen West**, Angus, Ont., Canada; Victoria University Medical Department, Toronto, 1886; aged 60; died, October 30.

**Willard A. Haynes**, Sabetha, Kan.; New York University Medical College, New York, 1881; aged 70; died, December 29.

**Butler W. Cobb**, Greenwood, S. C.; University of Georgia Medical Department, Augusta, 1885; aged 70; died, January 2.

**Charles A. Perrin**, Bozeman, Mont.; Michigan College of Medicine, Detroit, 1881; aged 68; died, December 29.

**Andrew B. Ireland**, Philadelphia; Jefferson Medical College of Philadelphia, 1885; aged 66; died, December 31.

**Matthias Stevens Bowser**, Lima, Ohio (licensed, Ohio, 1896); aged 85; died, December 22, from senility.



## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

### NEISSER-SAN-KAHN NOT ACCEPTED FOR N. N. R.

#### Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.

W. A. PUCKNER, Secretary.

Neisser-San-Kahn is marketed by the York Laboratories, York, Pa., as "a new genito-urinary product" with the claim that, "in Neisser-San-Kahn the genito-urinary surgeon has at his command a new salt of marked value in urethral infections." The product is said to be a definite chemical body, zinc borosalicylate, and to have the composition indicated by the chemical formula " $(C_{14}H_{10}BO_7)2Zn$ ." The following statement with reference to the method of manufacture was furnished the Council:

"PREPARATION. Boric acid being converted into hydrogen Tetraborate  $H_2B_4O_7$ . With a certain amount of Acid Salicylic and Zincum Carbonatum, (Normal) it forms the body of the product through crystallization. The crystals are recrystallized from hot water to discard the irritating property of the Acidum Salicylicum."

Neisser-San-Kahn is claimed to be "especially adapted for treatment of all forms of Neisserian infection." The preparation is marketed in the form of tablets. A blotter, evidently intended for the druggist, advises:

"In the absence of other instructions from the prescribing physician, Neisser-San-Kahn should be dispensed as follows: 1 tablet (1 gm.) Neisser-San-Kahn in three (3) ounces hot distilled water."

Although Neisser-San-Kahn is said to be a new chemical compound, a preparation claimed to be zinc borosalicylate was introduced about ten years ago (in Germany) with claims similar to those now advanced for Neisser-San-Kahn. This German preparation was called Dr. A. Foelsing's "Mucosan." Mucosan was analyzed at the University of Giessen by K. Feist (*Apotheker Zeitung*, 1912, p. 306). Feist concluded that the product presented a loose chemical combination of zinc salicylate, salicylic acid and boric acid, and that a product having properties identical with those of Mucosan is obtained when a mixture of boric acid 2.11 gm., zinc salicylate (hydrated) 5.63 gm. and salicylic acid 2.86 gm. is dissolved in a little water and the solution evaporated to dryness.

As evidence for the therapeutic value of Neisser-San-Kahn the York Laboratories submitted letters from physicians who had used the preparation. These did not indicate that the preparation has any other action in urethritis than that of zinc sulphate. Zinc sulphate is indicated only in certain forms of urethritis and the submitted evidence presented no warrant for the general use of the preparation advocated by the firm which markets it. The market is crowded with preparations proposed for the treatment of urethritis and the combination presented in Neisser-San-Kahn appears to have no advantage over established drugs.

The Council declared Neisser-San-Kahn inadmissible to New and Nonofficial Remedies on the following grounds:

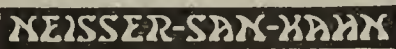
1. It is an unoriginal preparation marketed under a proprietary, nondescriptive name. The rules of the Council provide that a proprietary name for a medicinal article shall be recognized only when the use of such an exclusive name is in the interest of the public welfare. In consideration of the benefits which may come from the discovery of a therapeutic agent the Council concedes to the person or firm which, by right of discovery, controls such a product the right to name it and offers no opposition to an arbitrary name for such a product. The combination presented by Neisser-San-Kahn and claimed to be zinc borosalicylate, however, is not the discovery of the York Laboratories and hence the Council cannot recognize the proprietary and nondescriptive name of this firm.

2. The therapeutic claims are not substantiated by acceptable evidence and are, therefore, unwarranted.

3. The available evidence fails to show that the preparation, claimed to be zinc borosalicylate, has any advantage over established zinc salts. The use of substances which are unessential modifications of established drugs is unscientific and serves no useful purpose and hence, in the absence of evidence of superiority over established zinc salts the use of this so-called zinc borosalicylate is not in the interest of rational therapy.

### A Prompt Gonococcocidal Action

without irritating effect is the prime demand made of any agent held out as being of value in gonococcal urethritis.



[Boro-Zinc double-salt orthoxybenzoic acid]

throughout a wide and searching clinical experience has shown itself to be

### A Gonococcocide of High Value.

Its advantages lie in its powerful inhibitory action upon the growth of the gonococcus, its marked penetrating properties, minimum of irritation, and the stability of its non-staining solution.

In the treatment of acute gonorrhea a solution of suitable strength is injected and retained for five minutes. Ordinarily this is used four times daily.

Under the use of NEISSER-SAN-KAHN the gonococccidal action brings about an early cessation of the discharge. As a result of this prompt effect the danger of complications and chronicity is materially reduced.

Physicians will find NEISSER-SAN-KAHN to be well adapted in the treatment of acute gonorrhea, and will be gratified at its effectiveness in bringing about a cessation of the condition.

Supplied in 10-gram bottles, to physicians only, at \$2.50 per bottle.

Literature on request

**York Laboratories Company, Inc.**  
YORK, PENNA.

A specimen of recent (December, 1922) "Neisser-San-Kahn" advertising. In the original this occupied a full page.

## Correspondence

### SUPPLIES FOR LEPER STATIONS

To the Editor:—I have been impressed with the very encouraging work for the cure of leprosy which is being done in the two leper stations under my care—Kwangju and Fusan, Korea. I am in the United States this year for my regular year of absence. While in this country I am anxious to extend to as many people as possible an opportunity to help in this splendid service for humanity.

Naturally, my mind goes out to my colleagues in the medical profession as the ones who will best understand the scope and importance of the work from a physical

standpoint, and I feel that if they knew of some of our pressing needs, many of them would be glad to cooperate in supplying these.

I have made a list of some of the apparatus and supplies of which we stand in need: two microscopes; surgical instruments of all kinds; drugs; dressings and all kinds of hospital supplies, and medical books.

We can use any of these things second hand. Some hospitals in America burn many articles in the way of bandages and dressings that could be reesterilized and would be useful to us.

I shall be pleased to answer any questions or to furnish additional information in regard to this important work and its needs if addressed at my American home, Columbus, Ark., until September, 1923.

R. M. WILSON, M.D., Kwangju, Korea.

Medical Missionary.



### DETECTING LEAKS IN BASAL METABOLISM APPARATUS

*To the Editor:*—In a communication in *THE JOURNAL*, Nov. 25, 1922, p. 1858, Dr. Lynch of Dallas advocates the use of coal gas and a flame for the detection of leaks in the Benedict form of basal metabolism apparatus. We regard such a procedure as dangerous, involving, as it does, the possibility of an explosive mixture of gas and air being formed in the tubes and chamber of the apparatus. The use of coal gas is open to objection on other grounds, namely, that certain constituents of the gas are soluble in rubber, and rubber tubing so contaminated may continue to give off unpleasant odors for some time even after a thorough ventilation of the apparatus. Such odors may impair the accuracy of a basal metabolism determination by nauseating the patient under examination.

The method of painting soap-suds over the sites of suspected leaks while applying pressure to the top of the spirometer bell, has proved quite satisfactory in our hands, and is recommended for the detection of leaks in Benedict's or any similar apparatus.

H. F. PIERCE, New York.

Associate in Physiology, Columbia  
University College of Physi-  
cians and Surgeons.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### SOLUTION OF HYPOPHYSIS ADMINISTERED AFTER CESAREAN SECTION IN PREVIOUS LABOR

*To the Editor:*—Would there be any risk in giving pituitary extract, if indicated, during labor, the patient having had previously a cesarean section for a transient cause?

H. S. GEIGER, M.D., Kissimmee, Fla.

ANSWER.—The query contains two parts: 1. May certain pregnant women after cesarean section be managed expectantly at the termination of subsequent pregnancies? 2. May pituitary extract be used as a uterine stimulant in labor, with especial reference to its effects on a uterus previously subjected to cesarean section?

1. During the last decade the indications for cesarean section have been so broadened that many operations have been performed for adventitious circumstances, some of which are manifestly spurious. Of "transient" causes there stand out preeminently placenta praevia, eclampsia, malpositions, and ovarian tumors offering insuperable obstruction to labor. In subsequent pregnancies and labors, their recurrence is hardly probable; therefore, the women so affected would be in no jeopardy from the indications that had presented themselves in the previous labors. These are in sharp contrast to those women who had contraction of the pelvis, and required sections, for the primary indication is permanent. However, cesarean section for transient indications presents an aspect which demands most serious consideration, not only in placing the indication for the section, but also in dictating the policy in the delivery of the baby at the termination of all subsequent pregnancies. The relation of the cesarean scar to later labors is still an unsettled problem, for many assert that a cesarean once is a cesarean always, while others hold that such women may have a labor conducted under watchful expectancy. The preponderance of evidence is pointing toward the first stated aphorism. The cesarean scar is essentially an indication for the repetition of the operation because of the danger of rupture of the scar. If an exception does exist, the following conditions should probably be fulfilled: a multiparous woman with the history of an easy spontaneous birth or births, with a normal pelvis, normal presentation and position, in an approved surgical hospital where watchfulness

may be scrupulously observed, and immediate laparotomy be performed if necessity arises. In all others the cesarean section should be performed before labor sets in. The danger of uterine rupture, with death of the fetus, and high maternal mortality, is acute. In the *American Journal of Obstetrics and Gynecology* (4:579 [Dec.] 1922) figures were quoted to show that of 200 repeated sections, thirty-eight uteri either ruptured or had attenuated scars which would have ruptured under the stress of hard labor. Holland (*Brit. M. J.* 2:519 [Oct. 1] 1921) showed that the danger of rupture in subsequent spontaneous labor was fully 25 per cent. Therefore, the physician who contemplates conducting a woman through a spontaneous labor expectantly should weigh the evidence with the greatest circumspection.

2. Pituitary extract is an extremely potent drug. The potency of the products of different manufacturers may vary enormously, just as the product of one manufacturer may vary at different times. The potency of the products issued by different pharmaceutical houses, tested by the U. S. Public Health Service, varied as much as from 1 to 8. The highly active drug may be extremely dangerous when administered to a parturient woman in the presence of a malposition or other interference to labor. The accumulating evidence of ruptured uteri after administration of pituitary extract is worthy of mention. In normal labor, pituitary extract should be given only in fractional doses, 2 or 3 minims, repeated in twenty or thirty minutes, when the only delay to the progress of labor is due to beginning secondary inertia—when the os is fully dilated, the membranes are ruptured, rotation is completed, and the outlet is sufficiently relaxed to permit the easy birth of the child. Facilities for a prompt forceps operation should be available in the event that this small dosage produces untoward effects. Pituitary extract never should be given in the presence of a suspected, let alone a known, cause for dystocia. As pituitary extract may cause rupture of an intact uterus, it is absolutely contraindicated in the case of a uterus damaged by a cesarean scar until after the child and placenta have been delivered.

### TREATMENT OF LUPUS

*To the Editor:*—Kindly inform me through *Queries and Minor Notes* of the latest treatment of lupus. Please let me know the technic.

\_\_\_\_\_, Massachusetts.

ANSWER.—The treatment of lupus vulgaris in general is unsatisfactory, and many methods have been advised. For methods recently proposed the evidence is not particularly promising. The latest actual addition to our means of treatment is, perhaps, the use of ultraviolet light, now carried out by means of mercury vapor lamps made of quartz and known as quartz lights. The affected areas are exposed to this light under pressure. The exposures are carried out to the point of producing acute inflammatory reactions. The method is one depending for its success on the experience of the physician in treating lesions of this character. The lights and their methods of use are described in the various textbooks on electricity and light therapy.

### EXCESSIVE PERSPIRATION OF HANDS AND FEET

*To the Editor:*—A young man is troubled since childhood and especially after adolescence with excessive perspiration of hands and feet, when moderately warm or when slightly nervous, e. g., during quizzes and examinations. His mother had the same trouble. Is it hereditary? What are the possible causes? How can this condition be effectively alleviated or cured? Please omit my name.

\_\_\_\_\_, M.D., Michigan.

ANSWER.—Excessive perspiration of the hands and feet and excessive perspiration occurring elsewhere is a symptom of excessive irritability of the nervous system. This may be of neuropathic origin or it may be due to chemical or endocrine causes, e. g., hyperthyroidism. As a neuropathic or an endocrinopathic tendency seems to be transmissible in families, such symptoms may also be hereditary. The cure of the condition would necessitate discovery of the cause, in the first place, and its appropriate treatment. Thus, neurasthenia would require a mental and physical hygiene suitable to the individual. Hyperthyroidism—discoverable by some of the other symptoms of this condition, most especially



an increase in basal metabolism—might be benefited by thyroid and thymus roentgenotherapy, in addition to proper hygiene.

As symptomatic treatment, an astringent might be used, e. g., a 25 per cent. solution of aluminum chlorid, as recommended by A. W. Stillians (*THE JOURNAL*, Dec. 30, 1916, p. 2015). It is dabbed on gently and allowed to dry; the application is repeated every second or third day for three applications, and then once a week to prevent recurrences. A 0.5 per cent. solution of atropin sulphate, a few drops of which were rubbed in the hands, just before hand-shaking, has given comfort to a traveling salesman who was annoyed by finding his hands suddenly wet on such occasions. Should all these things prove unsatisfactory, a skilfully directed course of roentgenotherapy may put an end to the trouble.

#### DENTAL CARIES AS A SOURCE OF FOCAL INFECTION

*To the Editor:*—I would much appreciate information on the subject of dental caries not involving the pulp, as a source of focal infection. It is understood, of course, that dental caries at any stage is a potential source of future focal infection, and that dental repair is highly important. The specific question on which I desire information is, whether there is any present tangible evidence tending to prove that dental caries not involving the pulp is actually a source of focal infection for such diseases as neuritis, arthritis, myalgia, myocarditis and valvular heart disease.

W. W. ANDERSON, M.D., Cincinnati.

**ANSWER.**—There is no evidence that cavities in the teeth which do not involve the pulp ever act as a focus for the dissemination of bacteria through the blood and lymph streams. Neuritis, arthritis, myalgia, myocarditis and valvular diseases of the heart are not due to a focus in a simple cavity of decay in a tooth, nor are any other diseases.

Miller, in "Micro-Organisms of the Human Mouth," says that while the diameter of the dentinal tubules is sufficient to admit bacteria of the mouth, the great mass of bacteria in cavities of decay do not penetrate even up to the normal dentin, much less into it. Black and others have verified Miller's findings.

The organism that penetrates farthest in the dentinal tubules is the lactic acid bacillus. When this acid-forming fungus dissolves the lime, first in the enamel, and then in the dentin, sufficiently to expose the pulp, opportunity is offered for pathogenic organisms to enter the pulp, which they destroy; then opportunity is offered for the organisms to reach the apex of the tooth, from which point they are disseminated to all parts of the body through the blood stream.

#### DEFINITION OF MAJOR OPERATION

*To the Editor:*—Please publish what operations in surgery are major and what minor.

H. A. BISHOP, M.D., Millington, Mich.

**ANSWER.**—In *THE JOURNAL*, Oct. 21, 1916, was published the following definition of the term "major surgical operation," as defined and issued by the workmen's compensation board of Pennsylvania, in interpreting the term as applied to cases under the compensation law of that state:

A major operation is a surgical procedure which entails immediate serious consequences to the patient and which requires skill and training to perform, and includes: 1. The setting of fractures of long bones and reducing of subluxations, providing accuracy and efficiency of reduction be demonstrated by roentgen ray taken before and after surgical treatment. 2. All operative procedures, other than finger and toe amputations, cleansing, draining and closing wounds, evacuating pus by incisions, the manipulating and reduction of uncomplicated dislocations, the treatment of uncomplicated fractured ribs, the removal of superficial foreign bodies from the eyes, and the removal of subcutaneous foreign bodies.

**Census of Deaf and Dumb.**—The Department of Commerce announces that 44,885 deaf and dumb persons, or deaf-mutes, were enumerated in the census of 1920. In 1910 the number was 44,708. The deaf-mute population was only 425 per million in 1920, as compared to 486 per million in 1910. There was one deaf-mute for every 2,359 people in 1920, as against one for every 2,060 in 1910. The relative decrease in the prevalence of deaf-mutism during the last ten years is due, in part, according to this report, "to more skilled treatment of certain diseases, especially those of children, which frequently cause deafness."

## Medical Education, Registration and Hospital Service

### COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vigne, Juneau.  
KANSAS: Topeka, Feb. 13. Sec., Dr. Albert S. Ross, Sabetha.  
NATIONAL BOARD OF MEDICAL EXAMINERS: Written examination in Class A medical schools. Part I and II, February 12-14 and February 15-16. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for the February examination must be sent in by January 1.  
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.  
PENNSYLVANIA: Philadelphia, Jan. 30-Feb. 3. Sec., Mr. C. D. Koch, Professional Credentials Bureau, 422 Perry Bldg., Philadelphia.  
VERMONT: Burlington, Feb. 13. Sec., Dr. W. Scott Nay, Underhill.

### Montana October Examination

Dr. S. A. Cooney, secretary, Montana State Board of Medical Examiners, reports the written examination held at Helena, Oct. 3-5, 1922. The examination covered 10 subjects, and included 50 questions. An average of 75 per cent. was required to pass. Of the 8 candidates examined, 7 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Indiana University.....	(1920)		75.6
State University of Iowa College of Medicine.....	(1917)		79.5
University of Minnesota.....	(1921)		82.6
Creighton University.....	(1921)		82.7
Medical College of the State of South Carolina.....	(1900)		93.8
University of Vermont.....	(1913)		76.8
University of Pressburg, Hungary.....	(1921)*		80.7
FAILED			
Medical Dept. of the Univ. of the City of New York..	(1893)		53.9
* Graduation not verified.			

### Washington July Examination

Mr. William Melville, secretary, Washington Department of Licenses, reports the oral and written examination held at Spokane, July 6, 1922. The examination covered 14 subjects, and included 140 questions. An average of 75 per cent. was required to pass. Of the 7 candidates examined, 4 passed and 3 failed. Thirty-eight candidates were licensed by reciprocity, and one candidate was licensed by endorsement of credentials. Eight candidates received chiropractors' licenses by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University.....	(1922)		80.95
Harvard University.....	(1920)		80
Jefferson Medical College.....	(1921)		75
FAILED			
Northwestern University.....	(1922)		60, 60
University of Berlin.....	(1918)*		50
College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Los Angeles....	(1921)		California
Chicago College of Medicine and Surgery.....	(1915)		Illinois
College of Physicians and Surgeons, Chicago.....	(1903)		Illinois
Illinois Medical College.....	(1902)	Oregon, (1903)	Illinois
Loyola University.....	(1916), (1917)		Illinois
Northwestern University.....	(1921)		Montana
Rush Medical College.....	(1910)		Illinois
University of Illinois.....	(1917), (1919)		Illinois
State University of Iowa College of Medicine.....	(1907)		Montana
(1919) Iowa			
Kansas Medical College.....	(1910), (1913)		Kansas
University of Kansas.....	(1920)		Kansas
University of Louisville Medical Department.....	(1913)		Oregon
College of Phys. and Surgs., Baltimore....	(1909), (1910, 2)		Montana
Maryland Medical College.....	(1904)		Alaska
University of Maryland.....	(1909)		Maryland
Harvard University.....	(1896)		Iowa
Hamline University.....	(1904)		N. Dakota
University of Minnesota.....	(1920)	Illinois, (1921)	Minnesota
Barnes Medical College.....	(1907)		Illinois
Central Medical College of St. Joseph.....	(1900)		Idaho
Creighton University.....	(1917)	Montana, (1921)	Nebraska
University of Nebraska.....	(1919)	Alaska, (1921)	Nebraska
Ohio Medical College.....	(1906)		Ohio
University of Cincinnati.....	(1921)		Ohio
Jefferson Medical College.....	(1900)		Montana
University of Pennsylvania.....	(1918)		Penna.
University of Tennessee.....	(1918)		W. Virginia
Western University, London, Ont.....	(1904)		Nebraska
College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Pennsylvania.....	(1919)		N. B. M. Ex.
* Graduation not verified.			



## Book Notices

ENDOCRINE GLANDS AND THE SYMPATHETIC SYSTEM. By P. Lereboullet, P. Harvier, H. Carrion, and A. G. Guillaume. Translated by F. Raoul Mason, M.D., Instructor in Pediatrics, New York Post-Graduate Medical School and Hospital, with the Collaboration of Daniel R. Ayres, A.B., M.D., Assistant Professor of Gynecology, New York Post-Graduate Medical School and Hospital. Cloth. Price, \$6. Pp. 378, with 31 illustrations. Philadelphia: J. B. Lippincott Company, 1922.

This book contains chapters on the physiology, pathologic anatomy, diseases and therapy (including organotherapy) of the ductless glands and the sympathetic nervous system. There is a good deal of duplication of material and discussion, but the chief defect is lack of knowledge and critical sense on the part of the authors. The reader may form his own opinion of the reliability of the authors in their statement of facts, from the following quotations:

Milk and eggs can sometimes be considered as organotherapeutic products.

The adrenal secretion has a specific neutralizing effect on certain poisons.

Addison's disease can be considerably improved or even cured by organotherapy.

It has been known for a long time, for instance, the part played by the stimulation of the sympathetic in Basedow's disease, the majority of the symptoms of myxedema have their origin in alterations of the sympathetic.

Faradization of the thyroid decreases the secretion of the gland.

Arterial hypertension is due to hyperfunction of the adrenals.

Pregnancy can be considered a state of autointoxication.

The placenta is a galactagogue.

Dried extract of the cow's mammary gland is an efficacious galactagogue.

The extract of the lung has been used with some degree of success in purulent pleurisy, and some very good results have been obtained in pulmonary tuberculosis.

Extracts of the kidney have given the best results in the acute symptoms of uræmia, and in eclampsia of pregnancy. In acute nephritis, complete cures have resulted.

The book is not a contribution to either the art or the science of medicine.

TREATMENT OF INJURIES OF THE PERIPHERAL SPINAL NERVES. By Sir Harold J. Stiles, K.B.E., F.R.C.S., Regius Professor of Clinical Surgery, University of Edinburgh, and M. F. Forrester-Brown, M.S., M.D. Cloth. Price, \$4.30. Pp. 180, with 58 illustrations. New York: Oxford University Press, 1922.

In this monograph, as the authors state in the introduction, "an attempt is made to place at the disposal of the general surgeon, who may be called upon to deal with an occasional case of peripheral nerve injury, the experience which has been gathered from the exceptionally abundant material provided by the Great War; . . . to map out for the surgeon who has no special experience of the subject those paths which will lead to a successful result for himself and his patient, and to help him avoid those pitfalls which have entrapped most workers at first, before they learned to look out for them." This object has been successfully accomplished. The work is divided into three parts. The first part takes up anatomic considerations, discussing in detail the nerves most commonly injured, and the effects of complete division; diagnosis, including general principles and special difficulties; types of lesion found at operation; indications for operation; choice of type of operation; prognosis; order of recovery, and treatment after operation. These subjects are handled briefly, but in a practical, clinical way, and the facts are thoroughly up to date. The second part deals with the operative treatment of war injuries of the peripheral nerves. After discussing general considerations, it considers injuries to the nerves of the upper extremity; injuries to the nerves of the lower extremity, and procedures when end-to-end union cannot be effected. The illustrations showing the surgical anatomy of these operations are of unusual excellence. One can at once detect that this chapter was written by Sir Harold Stiles, although this is not stated. The operations are discussed in an exceptionally able way, typical of the practical knowledge and familiarity with anatomic detail that characterizes this great English surgeon. It is unfortunate, however, that nowhere in the monograph is it stated that this part of the work is an exact copy of both the text and the illustrations of the chapter by the same title contributed by the author in Volume II of "Orthopaedic

Surgery of Injuries," edited by Sir Robert Jones, which appeared in 1921, by the same publishers. The third part deals with tendon transplantation in cases of peripheral nerve injuries. In it are discussed indications essential for a successful operation, and it ends with details of some special operations, taking up, in order, operations for musculospiral paralysis, for complete flexor paralysis in the upper limb, for partial flexor and extensor paralysis in the upper limb, for quadriceps paralysis and injury, for paralysis of the tibialis anticus, or a single extensor, and for complete external popliteal paralysis. The illustrations in this chapter also are of unusual value, showing clearly the surgical anatomy and the operative details. The entire work is concise, practical and authoritative.

QUESTIONS NEUROLOGIQUES D'ACTUALITÉ. Vingt Conférences, Faites à la Faculté de Médecine de Paris, 1921. Par MM. S. A. K. Wilson, Ch. Chatelin, H. Claude, G. Roussy, Guillaumin, Lhermitte, Souques, Babonneix, André Léri, P. Sainton, A. Sicard, Crouzon, Poulard, Ch. Foix, Laignel-Lavastine, Vurpas, Bourguignon, Béhague, Bouttier, Pierre Marie. Introduction par M. Le Professeur Pierre Marie. Paper. Price, 28 francs. Pp. 551, with illustrations. Paris: Masson et Cie, 1922.

This series of addresses on live neurologic subjects, each by a man whose name is not only internationally known but also identified with recent research in the topic in question, constitutes one of the most remarkable collections of authoritative monographs yet published. Each contains a review of the whole question treated, prepared for a general medical audience and therefore of interest to every physician. The addresses are on progressive lenticular degeneration, by Wilson; cerebral tumors, by Chatelin; serous meningitis, by Claude; sensory disturbances of cerebral origin, by Roussy; spinal cord traumatism, by Guillaumin; epidemic (lethargic) encephalitis, by Lhermitte; paralysis agitans, by Souques; infantile encephalopathies, by Babonneix; syphilitic muscular atrophies, by Léri; exophthalmic goiter, by Sainton; algias and their treatment, by Sicard; atypical familial nervous disease, by Crouzon; pupillary modifications, by Poulard; medullary automatism, by Foix; thyreogenous psychoses, by Laignel-Lavastine; minor mental syndromes, by Vurpas; chronaxis, by Bourguignon; traumatic epilepsy, by Béhague; epilepsy, by Bouttier, and Does man possess preformed or innate language centers? by Marie.

THE HEART AS A POWER-CHAMBER. A Contribution to Cardiodynamics. By Harrington Sainsbury, M.D., F.R.C.P., Consulting Physician to the Royal Free Hospital and the City of London Hospital for Diseases of the Chest. Cloth. Price, \$3.75. Pp. 248, with 23 illustrations. New York: Oxford University Press, 1922.

This is in no sense a treatise. It is rather a collection of essays on some of the problems connected with the heart in health and in disease. There are considered such widely diverse topics as the mode of contraction of the ventricular muscles, the bruits of mitral disease, back-pressure effects, the utilization of the blood as a carrier of remedies, venous pulsations, the automatic mechanism of the heart, heart disease, heart failure and treatment. The subjects are presented from the standpoint now of anatomy, now pathology, now physiology, now physics; or with statements based on experimental or clinical observation or offered as pure theory. The style is generally clear with frequent allusion and classical quotation. The book is interesting, and at times throws illuminating side-lights on certain phases of cardiology. As a whole, however, it is disappointing and makes one wonder why it was written.

DA PATHOGENIA DO SOMMO, PARTICULARMENTE NA ENCEPHALITE LETHARGICA. Por el Dr. A. C. Pacheco e Silva. Paper. Pp. 15, with 11 illustrations. São Paulo, 1922.

After some research work at the Salpêtrière with material from three cases of epidemic encephalitis, the author comes to the conclusion that epidemic encephalitis offers a good opportunity for studying the pathogenesis of sleep. As the infundibular region shows changes and the pituitary seems normal, in encephalitis, Pacheco thinks it more justified to place the sleep center in the infundibular region, as suggested by Claude and Lhermitte, rather than the pituitary, as suggested by Salmon. Marie, under whose auspices the work was conducted, expresses no opinion as to its value, in the introduction.



## Medicolegal

### Right to Registration Under Harrison Narcotic Law

(*Starnes v. Rose* (U. S.), 282 Fed. R. 336)

The United States District Court, Northern District of Georgia, in granting a writ of mandamus to compel the defendant, a collector of internal revenue, to register under Section 1 of the Harrison Narcotic Law a physician licensed to practice under the Georgia laws, says that a writ of mandamus does not compel an act as to which the officer has discretion; and the question was whether the collector has discretion in reference to registering a practicing physician, under Section 1. Registration was refused or suspended in this case on the ground that two indictments were pending against the applicant, charging offenses against the narcotic act. The collector justified his refusal by Section 11 of Regulation 35 of the Treasury Department, as amended by Treasury Decision 3139 of March 2, 1921, providing, among other things, for the reference of the application to the supervising federal prohibition agent of the department in which the applicant proposes to engage in the business or occupation within the scope of this regulation, for his investigation and approval or recommendation for rejection; and that unless the applicant's qualifications are found to be satisfactory, the applicant will be rejected by the collector. The collector relied also on Instructions for Enforcing the Provisions of Treasury Decision 3139, of July 26, 1921, which direct that "persons who have been arrested and held for action by the grand jury, or who have been indicted, will be held by the collector as under investigation, to await the outcome of the trial. In the event of conviction, registration may be refused."

The Harrison Narcotic Law is not a licensing act whose aim is to control the dispensing of narcotics by confining the dispensation to proper persons; for that is an exercise of the police power as to opiates which is not possessed by Congress. The act rests on the power to tax, and its provisions for registration and its restrictions on the dispensation of narcotics are for the purpose of safeguarding the tax on the dispenser and on the drug. Its enforcement is left to officers of the revenue. For these purposes, it properly requires a registration of persons engaged in the businesses enumerated in Section 1, and makes it a crime to carry on such a business without registration. But to prohibit a practicing physician from prescribing narcotics unless he registers, and then to refuse to register him, would, to that extent, be to prohibit and regulate his practice of medicine, a thing within the province of the state, and not of the United States, and in contradiction of the revenue purposes of the act.

The act contains no enumeration of qualifications for a registrant, except as being engaged in one of the businesses mentioned; and it has no provision for a refusal of registration to him. Section II of Regulation 35, indeed, assumes that Congress meant that the registrant should be lawfully engaged under the laws of the state in the business for which he would register, and requires that inquiry be made into that fact. The qualifications referred to therein are those fixed by the state law for the business in question. Neither the collector nor his superior officer has power to add any other qualification or obstruction to registration. Regulations attempting this would not be "for the carrying of the provisions of the act into effect," as authorized therein, but would subvert the registration required by it. The instruction of July 26, 1921, was not made by "the Commissioner of Internal Revenue with the approval of the Secretary of the Treasury," and so was not authorized by the act; but, if it were, in attempting to make a pending charge of crime a ground for refusing registration, it would be unsustainable. Even after conviction, to do so would add a deprivation of vocation to the punishment fixed by law. Prior to conviction, there is only an accusation, of which the registrant is presumed to be innocent. The determination of those who may

properly practice medicine or otherwise dispense drugs belongs to the agencies of the state. The collector must register on proper application all who are by the state law permitted to dispense them. He has no discretion in the matter.

## Society Proceedings

### SOUTHERN SURGICAL ASSOCIATION

Thirty-Fifth Annual Meeting, held at Memphis, Tenn., Dec. 12-14, 1922

The President, DR. C. JEFF MILLER, New Orleans,  
in the Chair

#### Chronic Obstructive Jaundice: Report of Nine Cases Treated by Cholecystogastrostomy

DR. WILLIAM A. DOWNES, New York: All patients suffering from chronic obstructive jaundice should be operated on, as surgery offers the only hope of relief. Internal drainage of the bile ducts is preferable to external drainage. The slightly greater risk involved in anastomosing the gallbladder over simple drainage is more than offset by the increased comfort of the patient, plus the added advantage of retaining the biliary secretion. Besides, in the event of a cure by external drainage, a secondary operation is necessary to close the fistula. I have found it easier to unite the gallbladder to the stomach than to the duodenum; and, since the passage of bile through the stomach is harmless, I consider cholecystogastrostomy the operation of choice.

#### Fractured Spine: Consideration of the Practical Care and Treatment

DR. WALTER C. G. KIRCHNER, St. Louis: In fractures of the spine, too much stress has been laid on the diagnosis and treatment of the lesion itself, and not enough attention has been paid to matters relating to the welfare of the patient. I had a case of pronounced fracture and dislocation of the fourth and fifth lumbar vertebrae in which there was complete paralysis of the lower limbs, with loss of bladder and rectal function. In spite of high grade decubitus, emaciation and weakness that were present, great improvement in the patient's condition resulted from careful handling and persistent attention to detail, so that he was able to be up and about and, in a restricted sense, help himself in his daily needs, thus dispensing with special care and nursing. Treatment must be directed to the control of shock, the correction of deformity, relief of pressure on the cord, and the prevention of sepsis, decubitus and a state of inanition. The patient's mental state must receive attention. Catheterization of the bladder should be avoided. Intelligent and painstaking nursing and mechanical measures are important factors in aiding improvement or recovery.

#### Traumatic Brain Lesions

DR. E. DUNBAR NEWELL, Chattanooga, Tenn.: A stereoscopic roentgenogram should be taken of every head injury when the blow has been sufficient to cause a fracture of the skull or to render the patient unconscious. Fracture of the skull per se does not indicate that the patient has been injured seriously. With the symptoms of lesion to the brain or its membranes present, the absence of a fracture does not alter in the least the treatment or the prognosis. The failure of the roentgen ray to detect a fracture of the base does not mean that one does not exist. Basal fractures must not be considered hopeless; certainly 75 per cent. of these patients may be saved if they are watched intently and intelligently treated.

#### Influence of Hemorrhage on the Mortality in Gunshot Wounds and Other Injuries of the Abdomen

DR. J. M. MASON, Birmingham, Ala.: The mortality of 88.8 per cent. in the large hemorrhage series, as compared with 31.5 per cent. in the small hemorrhage series, teaches that our treatment of hemorrhage must be improved. Transfusion must be employed more extensively. Autoreinfusion should be practiced in selected cases. If cases are seen early, and



observation indicates that hemorrhage is not progressive, operation may even be deferred a short time, while waiting for reaction, and while efforts are being made to obtain donors for transfusion.

#### **Papilloma and Adenoma of the Gallbladder**

DR. IRVIN ABELL, Louisville, Ky.: Benign tumors of the gallbladder, notably papilloma and adenoma, are not so rare as formerly thought. They occurred once in every thirty-six cases of my series. The invariable presence of chronic inflammatory changes in gallbladders containing such tumors would argue the importance of chronic irritation as an etiological factor in their development. The overshadowing clinical picture is that of cholecystitis, there being no correlation of symptoms with the presence of such tumors. The fact that such tumors occur in the course of chronic cholecystitis is an additional argument in favor of cholecystectomy.

#### **Important Considerations in the Treatment of Fractures of the Shaft of the Femur**

DR. ALBERT O. SINGLETON, Galveston, Texas: The early reduction of fractures of the femur under spinal anesthesia with the aid of the fluoroscope or of roentgenograms, and by placing the splint in position before reduction, will succeed in a number of instances in securing and maintaining good position. The Thomas splint is the splint of choice, with provision for flexion of the knee. Extension is necessary in all cases, whether open or closed reduction is made, and whether or not plates or other methods of fixation of the bone are used. Skeletal extension or traction is superior to skin traction when there is overriding of the fragments, particularly in fractures of the lower end of the femur. It is important not to neglect the muscles, tendons and joints and allow them to suffer from disuse and atrophy.

#### **Chronic Ulcerative Colitis**

DR. HARVEY B. STONE, Baltimore: One of the striking clinical characteristics of chronic ulcerative colitis is its chronicity and recurrent nature. When it resists medical treatment or becomes severe, operative intervention is indicated. Ileostomy and separate appendicostomy for colon irrigations, with exclusion of the colon from function, offers the best results.

#### **Surgery of the Acutely Inflamed Gallbladder**

DR. ROBERT CALDWELL, Nashville, Tenn.: Every case of acute cholecystitis should be treated surgically. Operation should be done as early as possible after the onset of the symptoms. The treatment should be a cholecystectomy when at all possible. In the severe cases, operation should be done the quickest way and with the least manipulation. The leaving of a clamp on the cystic duct and vessel will meet this requirement.

#### **Brain Abscess**

DR. CHARLES BAGLEY, JR., Baltimore: In a series of twenty cases of brain abscess, seventeen patients were operated on, with a mortality of 45 per cent. In eight of the cases in which operation was performed, the patients died; and the three who were not operated on died. A necropsy was performed in eight of the eleven fatal cases.

#### **The Patency of the Fallopian Tubes Ascertained by Transuterine Injection of Fluids**

DR. I. S. STONE, Washington, D. C.: The method was first tried during the operation on a young woman with acute bilateral salpingitis and appendicitis with extensive pelvic peritonitis. We were impelled to pursue a conservative course because the patient was contemplating marriage in the near future. It was considered folly to leave a tube which was dripping with pus, yet we allowed the left tube and corresponding ovary to remain in situ, although the specific nature of the infection was beyond question (the responsible party confessed it). After opening the abdomen and removing the right tube and ovary with the appendix, all of which were hopelessly destroyed, we proceeded with the injection. The cervix uteri was caught with tenaculum forceps; a large glass syringe filled with 1:1,000 hot mercuric chlorid solution was introduced into it and passed through the internal os. Firm pressure with the hand caused a small

stream of the solution to appear at the pavilion, which was caught on a sponge and not allowed to flow into the abdomen. Besides the transuterine irrigation of the left tube, the same solution was used to irrigate its distal end by distention and flushing until we reached every possible fold in its mucosa. After a stormy first night the patient recovered, married, and bore her first child nine years afterward, and a second child two years after that. The patient and her two daughters are now living and in excellent health.

#### **Surgical Conditions of the Right Side of the Abdomen**

DR. W. F. WESTMORELAND, Atlanta, Ga.: The majority of these patients are not immediately cured by operation. The mechanical faults are corrected, but the rapidity of the convalescence depends on intelligent medical care. All of these patients have acidosis, usually of a very high grade, and generally characterized by an acute fall and spring exacerbation. Sodium bicarbonate in sufficient dosage to control the acidosis should be taken. The diet should not be restricted, but well balanced, with plenty of green vegetables and fruit, particularly ripe oranges or orange juice. The patient should have plenty of sunlight and fresh air and light exercise in the open.

#### **Fractures of the Elbow Joint and of the Lower End of the Humerus**

DR. EDGAR LORRINGTON GILCREEST, San Francisco: For the treatment of fractures in the vicinity of the elbow joint, with the exception of fracture of the olecranon process, the fully flexed position offers the best results. Often a splint is unnecessary, the forearm being strapped to the upper arm and fixed to the chest with a bandage. The advantages of the flexed elbow positions are: (1) It gives the most complete anatomic reposition of fragments and the best fixation; (2) it favors the retention of the more important flexion function of the joint, and (3) it cooperates with gravity in the subsequent restoration of function.

#### **Mesenteric Thrombosis**

DR. JAMES F. MITCHELL, Washington, D. C.: Mesenteric thrombosis is of particular interest because of its gravity, the difficulty of diagnosis, and the poor results of surgical treatment. Pathologically, the occlusion may be either venous or arterial, or both vessels may be involved. Venous occlusion is less dangerous than arterial and is less frequent, occurring in about 40 per cent. of cases. It is due in most instances to a descending thrombosis, or may be in itself a primary affair due to some infectious process in the intestine, most often appendicitis. Arterial occlusion occurring in about 60 per cent. of cases is usually attributed to arteriosclerosis, endocarditis or some infectious process elsewhere. This explanation will answer for those cases in which the catastrophe occurs in the course of or following some infection or surgical condition. There are many instances, however, for which no explanation can be given for the source of the embolus that has caused the obstruction. As a matter of fact, most of the cases which come into the hands of the surgeon are of this type, and this fact possibly offers a partial excuse for the extreme infrequency of a preoperative diagnosis. The superior mesenteric artery is occluded more frequently than the inferior, the usual explanation being that its diameter is nearly three times as great as that of the inferior; that it arises from the aorta at a higher point than the inferior, thus having an earlier opportunity of intercepting an embolus, and that its course is nearly parallel to that of the aorta, while the inferior runs off at an acute angle. The result of the occlusion is usually a hemorrhagic infarct, a pathologic condition that has never been satisfactorily explained, except that while the superior mesenteric artery is not anatomically a terminal or end artery, it nevertheless is so physiologically.

As to treatment, operation at the earliest possible moment with immediate resection of the affected area, with a safe margin of healthy bowel, offers the best chance of recovery. The results are disappointing from a statistical point of view. The mortality in cases in which operation is performed is variously estimated at from 75 to 90 per cent.

(To be continued)



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### Archives of Internal Medicine, Chicago

December, 1922, 30, No. 6

- \*Pathology of Bronchial Asthma. H. L. Huber and K. K. Koessler, Chicago.—p. 689.
- \*Intestinal Digestion of Connective Tissue. J. Buckstein, New York.—p. 761.
- \*Psychologic Tests Applied to Diabetic Patients. W. R. Miles and H. F. Root, Boston.—p. 767.
- \*Experimental Observations on Localization of Pain Sense in Parietal and Diaphragmatic Peritoneum. J. A. Capps and G. H. Coleman, Chicago.—p. 778.
- \*Osteitis Deformans in Monkeys. E. P. C. White, Philadelphia.—p. 790.
- \*Cholera Acidosis and Its Therapy. M. Tsurumi and T. Toyoda, Dairen, Manchuria.—p. 797.
- Vitally Stainable Reticulation and Chromatic Granules in Erythrocytes Preserved in Vitro. O. H. P. Pepper, Philadelphia.—p. 801.
- \*Effect of Atropin on Gastric Function, as Measured by Fractional Analysis. B. C. Lockwood and H. G. Chamberlin, Detroit.—p. 806.
- \*Anemia of Chronic Nephritis. G. E. Brown and G. M. Roth, Rochester, Minn.—p. 817.

**Pathology of Bronchial Asthma.**—A pathologic histologic examination of the finer structure of the bronchi was made by Huber and Koessler. The findings suggest a certain parallelism between the clinical picture and the structural changes. The outstanding finding is the evidence that the actual thickness of the walls of bronchi and bronchioli of more than 0.2 mm. outside diameter is increased, as compared with similar structures in nonasthmatic persons. This difference is due to increased thickness of all layers, from the epithelium to the outer fibrocartilaginous layer. Hyperemia and cellular infiltration of the wall and increased activity of the glands lead to swelling and thickening and this can produce, mechanically as well as chemically, irritation of the peripheral nerve endings in the tube, which may indirectly cause bronchospasm. The abundant secretion of the epithelium and the hyperactive glands obstruct, in some instances completely, the already narrowed lumen of the middle sized and small bronchi and the bronchioli. In this way both systems, the exudative and the bronchomuscular, act simultaneously in the production of the stenosis, in some cases one more than the other but always both to some extent. Even in the purely allergic asthma of an infant 16 months old, which at that age already showed definite thickening of the bronchial wall, as compared with a well infant of the same age, the exudation into the bronchi and bronchioli with complete obstruction of some is proof of this combined involvement. These observations make it plain that in man, at least, the allergic reaction of the tissues is not confined alone to the smooth muscle fiber system, but involves also the whole organ system which serves educative processes, endothelium, epithelium, capillaries and glands. Cases are cited and the literature is reviewed. The paper is well illustrated.

**Intestinal Digestion of Connective Tissue.**—A method is presented by Buckstein for the study of the digestion of connective tissue, when introduced directly within the lumen of the small intestine of the human being. Connective tissue digestion may occur within the small intestine, and is not dependent entirely on gastrogenic function. The absence or presence of connective tissue in the stool, throws no light on the nature of the gastrogenic function, since the small intestine is definitely involved in its digestion.

**Psychologic Tests for Diabetics.**—Diabetic patients frequently complain of poor memory and power of attention, but objective proof of this has been lacking. By certain psychologic tests applied in such cases as well as to suitable controls it was found by Miles and Root that diabetic patients with hyperglycemia and glycosuria at the beginning of treatment show a decrement of about 15 per cent. or more in memory and attention tasks. The loss is in amount rather than in quality. With treatment the diabetic improves rapidly in his psychologic status, approaching but not quite reaching normal. In accuracy and quickness of movements

five treated diabetics, whose disease was of long duration, were 20 per cent. below normal.

**Localization of Pain Sense in Peritoneum.**—According to Capps and Coleman, the parietal peritoneum and its underlying serosa, so far as explored—namely, all the anterior median areas and the lateral areas as far as the anterior superior spines—are sensitive to pain from strong pressure of a smooth point or light pressure or lateral movement of a rough point of wire. The pain elicited by stimulation of the parietal peritoneum is localized with considerable accuracy by the patient, the error being less than one inch. The authors' observations confirm the conclusions of Ramstrom and Lennander that the parietal peritoneum is devoid of pressure sense. The peritoneum covering the diaphragm is devoid of pressure sense as applied by light contact or stroking of a beaded wire point. But to strong pressure with a beaded point or light contact with a rough point it is acutely responsive to the sense of pain. The localization of pain from stimulation of the diaphragmatic peritoneum is never in the diaphragm itself. It is always referred to some distant part. Stimulation of the outer margin causes diffuse pain over the lower costal region and subcostal abdominal wall. Stimulation of the central portion produces pain over a sharply limited point somewhere along the trapezius ridge. These impulses are doubtless carried by afferent fibers of the phrenic nerve to the cervical cord and thence referred to the neck by the sensitized cutaneous nerves of the fourth cervical segment. This pain has not been observed along the course of the phrenic nerve itself.

**Osteitis Deformans Stage in Deficiency Disease.**—White's study of osteitis deformans in monkeys would seem to suggest that Paget's disease may be just one stage in a deficiency disease. It may be a reparative response: (1) through a disordered neurotrophic mechanism, (2) through the perversion of the calcium governing glands which have been disordered by an improperly balanced diet, or (3) through the addition of an excess of calcium to the diet of an animal whose body fluids were unable, through previous faulty diet or other disorders, to hold it in solution.

**Therapy of Cholera Acidosis.**—The alkali content of the blood in mild cases of cholera is practically the same as in health. But in the severer, and especially in the very serious cases, a marked decrease of alkali is observed, leading to acidosis. By the injection of alkali, the blood alkali in cholera cases is generally increased temporarily or permanently; that is to say, the number of drops by the stalagmometer (according to Traube's method) increases. The occasional decrease of the number of drops is believed to be due to the increased acid produced in the body and to the great increase of tolerance to alkali in consequence of acidosis in an acute form. The mortality after the injection of sodium bicarbonate-saline in forty-nine cases, observed by Tsurumi and Toyoda, was 28.4 per cent., while the mortality in 480 cases in which no alkali was given, but instead saline, or serum, or both, was 42.7 per cent., a difference in favor of alkaline therapy of 14.3 per cent.

**Effect of Atropin on Gastric Function.**—Lockwood and Chamberlin found that the effect of atropin on the human stomach is to depress both the secretion and motor action, but is much less than that observed in lower animals. Maximal clinical dosage of atropin depresses both the free and total gastric acidity about 30 per cent. The same dosage lessens motor movements in the human stomach enough to delay the evacuation time after an Ewald meal about ten minutes. Bile is more frequently observed after atropin, probably due to greater relaxation of the pylorus.

**Anemia of Chronic Nephritis.**—The anemia of uncomplicated chronic nephritis was studied by Brown and Roth from several standpoints. Evidence is presented to show that the anemia of uncomplicated chronic nephritis develops in the absence of blood loss, and this anemia is not due to excessive hemolysis. Evidence is also presented which indicates that the bone marrow suffers damage concomitantly with renal, retinal and cardiac tissues. Chronic nephritis is a constitutional disease; accumulating evidence points to primary vascular injury of widespread distribution, renal,



cardiac and retinal tissues and the bone marrow tissues reveal secondary effects of vascular disease. The unknown agent causing renal insufficiency is probably the etiologic factor in the disturbance of hematopoiesis; in other words, a common cause is present. The anemia of chronic nephritis, if present to the degree indicated, has a prognostic value similar to that of creatinin retention.

### Canadian Medical Association Journal, Toronto

December, 1922, 12, No. 12

- \*New Attempts to Procure Immunity to Malignant Disease in Man. S. Russ, London.—p. 841.
- Recent Advances in Roentgen-Ray Treatment. E. R. Morton.—p. 844.
- Thyroid Disease. N. J. MacLean, Winnipeg, Man.—p. 847.
- Goiter. R. E. McKechnie, Vancouver, B. C.—p. 854.
- Goiter Problem—From the Patients Standpoint. F. N. G. Starr, Toronto, Ont.—p. 858.
- Exophthalmic Goiter. J. K. McGregor, Hamilton, Ont.—p. 860.
- Comparisons of Clinical and Radiologic Findings in Lung Diagnosis. F. S. Bissell, Minneapolis, Minn.—p. 863.
- Diagnosis of Empyema. W. S. Lemon, Rochester, Minn.—p. 867.
- Roentgen-Ray Findings in Empyema and Abscess of Lung. L. R. Hess, Hamilton, Ont.—p. 871.
- Deficiency Diseases. F. H. Wetmore, Hampton, N. B.—p. 873.
- \*Surgery of Duodenal Membranes; Results of Treatment. R. P. Cromarty, Brandon, Man.—p. 876.
- Treatment of Prostatism. D. W. MacKenzie and M. I. Seng, Montreal, Que.—p. 879.
- \*Respiratory Complications After 7,000 Administrations of General Anesthetics. D. C. Aikenhead, Winnipeg, Man.—p. 884.
- Focal Infection in Tonsils of Adults Suffering from Subacute and Chronic Systemic Disease. R. S. Pentecost, Toronto, Ont.—p. 886.
- Throat Conditions in Children. E. Boyd, Toronto, Ont.—p. 891.
- Advantages of Gas Inflation in Obstetric and Gynecologic Diagnosis; Importance in Study of Causes of Sterility. R. Peterson, Ann Arbor, Mich.—p. 893.
- Case of Chronic Rhinitis Treated by Radium. W. H. B. Aikins, Toronto, Ont.—p. 897.

**Procuring Immunity to Malignant Disease.**—Russ reports on attempts made in thirty cases to immunize patients suffering from cancer against their own tumor cells. In these cases the disease was at such a stage that complete surgical removal was not considered possible, but it was not so far advanced as to preclude a prospect of life for some months. Of these patients, five were suffering from carcinoma of the breast, diagnosed by microscopic examination. A limited operation was performed, the primary growth only being removed, and the axillary glands left. Then Russ made his injections of tumor tissue. When last seen, these patients were all in good health without evidence of recurrence. In some of the cases the disease had been very advanced. In reviewing these results, Russ says, it much be borne in mind that in almost all the cases the stage of the disease rendered any other form of treatment inadvisable. Briefly, the procedure employed was as follows: The tumor removed at operation is minced and exposed to the roentgen ray—a dose of 2 rads. (The electroscope is standardized with a known quality of radium, and the time required for an effective exposure to the roentgen rays to obtain the equivalent of a "rad," must be determined as the exposure goes on.) The minced tumor is sucked into a long glass syringe fitted with a wide aperture and canula, and equal quantities of this radiated material are injected into two pockets previously made in the abdominal wall. The quantity of material injected has varied from 4 to 15 c.c.; in most cases it is more than 8 c.c.

**Surgery of Duodenal Membranes.**—During operation performed for the relief of stasis due to bands on the colon, terminal ileum, etc., a condition of membranes on the duodenum has been observed by Cromarty in a large number of cases. The different types of duodenal membranes referred to ranged all the way from sheets closely overlying the duodenum and fixed at the omental and mesocolic attachments, to dense cordlike bars from the liver or colon, spreading out over the duodenum. The latter have frequently caused distinct constriction of the duodenum, while the first always tend to cause longitudinal puckering of the duodenal wall, and consequent interference with its proper muscular function and disturbance of its outline. The results of surgical treatment are gratifying. Cromarty asserts that the importance of removing the duodenal membranes as a part of the work in operation on colon bands cannot be over-

estimated. Search for the cause of failure of simple appendectomy or cholecystectomy in chronic cases, especially with so-called reflex pain high up, has stimulated thorough examination and resulted in blame being laid on these membranes in many cases. In order of frequency, the commonest symptoms are: (1) gnawing or cramping pain in the epigastrium, 75 per cent.; (2) tenderness in the epigastrium, 56 per cent.; (3) eructations of gas, 50 per cent.; (4) nausea or vomiting, 42 per cent. In many respects these findings are similar to those in duodenal ulcer. But there is one great point of difference, namely, that the pain in ulcer is very definitely related to ingestion of food, whereas in cases of duodenal membranes, the pain tends to be very persistent, pulling and gnawing in type, and is not influenced for the better by taking food.

**Respiratory Complications Following Anesthesia.**—There were nineteen cases of respiratory complications following the 7,000 administrations analyzed by Aikenhead, with four deaths, giving a morbidity of 0.27 per cent., and a mortality of 0.05 per cent. Cold months show a higher pulmonary rate than warmer months. In January, February, March and December there were nine cases, while in the eight remaining months, they only totalled ten. Respiratory complications occurred after the following operations: Appendectomies, eight; tonsillectomies, four; one each after the following: operation for harelip, work in antrum, removal of thyroid, and extraction of teeth. Of the nineteen cases, nine were definite cases of lobar pneumonia; four cases of bronchopneumonia; one case of pulmonary infarct; one case of abortive type of pneumonia; four cases of mixed respiratory infection.

### Illinois Medical Journal, Oak Park

December, 1922, 42, No. 6

- Peptic Ulcer. J. B. Deaver, Philadelphia.—p. 421.
- Management of Maternity. W. D. Chapman, Silvis.—p. 428.
- Relation of Nose and Throat to Ear Diseases. G. E. Shambaugh, Chicago.—p. 431.
- Christian Science from Medical Standpoint. E. Jacobson, Chicago.—p. 434.
- Physician an Important Factor in Public Health Problems in Illinois. C. W. Lillie, East St. Louis.—p. 438.
- Paravertebral Anesthesia in Abdominal Surgery. N. H. Lowry, Chicago.—p. 440.
- Macroscopic Urine Precipitation Test for Active Tuberculosis. F. A. Causey, Peoria.—p. 443.
- \*Protozoan Débris as Primary Cause of Malignancy. H. B. Flynn, Chicago.—p. 445.
- Indications for Surgical Intervention in Toxic Goiter. C. Langer, Chicago.—p. 448.
- Present Status of Goiter Problem. C. T. Hood, Chicago.—p. 449.
- Roentgenologic and Clinical Findings in Normal Chest. New York.—p. 451.
- Life and Health. C. L. Redfield, Chicago.—p. 457.
- Plea for Conservatism in Surgical Treatment of Chronic Infections of Maxillary Sinus. C. B. Welton, Peoria.—p. 460.
- \*Modern Program for Treatment of Syphilis. E. A. Oliver, Chicago.—p. 464.
- \*Open Air School as Factor in Preventive Medicine. J. Milligan, Jacksonville.—p. 469.
- Make-up of Neurotic. M. Solomon, Chicago.—p. 473.
- Revival of Artificial Pneumothorax. E. F. Traut, Oak Park.—p. 475.

**Protozoan Débris as Cause of Malignancy.**—Flynn speaks of a spirillum-like protozoon which she has secured from cases of carcinoma and sarcoma—several months after operation had been performed when the patient was seemingly enjoying improved health. Seventy-five per cent. of these patients had died at the last checking up. This organism fulfils the three laws of Koch. Flynn has never succeeded in isolating this organism from fibromas except when microscopic examination disclosed a tendency to malignant degeneration and the organisms were then present in the blood stream.

**Treatment of Syphilis.**—Oliver uses arsphenamin and soluble mercuric chlorid, 1 per cent. in physiologic solution of sodium chlorid, in a dosage of 35 minims twice weekly, or the insoluble mercuric salicylate, 10 per cent. emulsion in liquid petrolatum, in dosage of 10 minims every five days. Arsphenamin has been administered by the gravity method, thus avoiding the painful infiltrations so often obtained by using a syringe. Oliver urges that every case be treated individually, and submitted to frequent medical examination and urine analysis.



**Open Air Schools as Preventive Measure.**—Milligan states that in 1921 there were more than 3,000 open air schools in the United States. The Chicago open air work has been of such a type that it has been a pattern which others have followed and its results have been uniformly favorable. Medical inspection and the services of a school nurse are as essential as teachers in open air schools. The open window rooms need much less equipment; the windows are hung so that they open into the room from the top of the sash to provide the maximum amount of air and the minimum amount of draft. The usual heat is turned into the room and it is only necessary for the children to wear their ordinary outdoor wraps. As a rule, there is no rest period arranged for and no food is provided. This type of room is admirably adapted to keep well children well. Children are chosen now for open air schools for many more ailments than formerly, though probably there will always be more of those suffering from respiratory diseases than any other one illness. It has been estimated that the number of children who would be benefited by the open air school regimen is from 3 to 5 per cent. of the total school population of a community. The greatest accomplishment of this type of school is that it teaches its pupils a regimen that not only helps them in their present state of physical unfitness but will help to prevent future disability.

### Johns Hopkins Hospital Bulletin, Baltimore

December, 1922, 33, No. 382

- Diagnostic and Therapeutic Use of Uveal Pigment in Injuries of Uveal Tract and Sympathetic Ophthalmia. A. C. Woods, Baltimore, and A. Knapp, New York.—p. 419.
- \*Production of Toxic Substances by Pneumococci. A. M. Chesney and A. B. Hodges, Baltimore.—p. 425.
- \*Growth of Influenza-like Bacilli on Mediums Containing Only an Autoclave Labile Substance as an Accessory Food Factor. T. M. Rivers, Baltimore.—p. 429.
- \*New Method of Testing Liver Function with Phenoltetrachlorophthalein. II. S. M. Rosenthal, Baltimore.—p. 432.
- \*Study of *Trichomonas Hominis*. M. J. Hogue, Baltimore.—p. 437.
- Entero-Urethral Fusion in Fetus, Simulating Fetal Ascites. J. C. Baldwin, Baltimore.—p. 440.
- Case of Tubal Pregnancy Probably Caused by a Parovarian Cyst. L. Brady, Baltimore.—p. 442.
- Isolation of Nucleic Acid from Tissues. W. Jones and C. Folkoff, Baltimore.—p. 443.
- Case of Congenital Osteosclerosis. R. K. Ghormley, Baltimore.—p. 444.

**Production of Toxic Substances By Pneumococci.**—The relationship of the toxic substances obtained from pneumococci by solution of the bacterial cell or by manipulation of pneumonic exudates to the phenomena of intoxication in pneumonia in man is discussed by Chesney and Hodges. They found that filtrates of actively growing cultures of pneumococci in beef infusion broth, normal human serum and defibrinated normal human blood are not toxic for mice when injected intraperitoneally.

**Bacillus Para-Influenzae.**—Two influenza-like bacilli are described by Rivers which require the addition of only an autoclave-labile substance as an accessory food factor. *Bacillus para-influenzae* or *Hemophilus para-influenzae* has been suggested as the name for this group of organisms.

**Phenoltetrachlorophthalein Test of Liver Function.**—Phenoltetrachlorophthalein has been intravenously injected and its behavior in the blood stream has been studied in normal animals, in dogs following chloroform poisoning, phosphorus poisoning, and in dogs after ligation of the common and cystic bile ducts. The concentration reached in the plasma of normal dogs, after 5 mg. per kilogram injections, is strikingly constant. Approximately 10 per cent. is present in two minutes, 8 per cent. in three minutes, and from a large trace to absence in fifteen minutes. The rate of disappearance was found higher in two cats, and more rapid in one rabbit. Variation of the dose has a direct influence on the curve obtained. There is a marked increase in these concentrations, with a greatly prolonged rate of disappearance, after injury to the liver parenchyma; the extent to which this occurs depends on the degree of damage to the liver cells, as evidenced by the condition of the animals, and by necropsy findings. Curves approaching normal are obtained if repair has taken place. Curves have been obtained in jaundice due to mechanical obstruction that differ widely from those found in the jaundice associated with extensive

degeneration of the hepatic cells. A simplified method is presented by Rosenthal for quantitative determination of the amount of dye in the plasma. A practical test for its qualitative detection is also described.

**Study of *Trichomonas Hominis*.**—Sodium chlorid serum water has proved an excellent medium for the cultivation of *Trichomonas hominis*. When the tubes are covered with paraffin oil the organisms live from thirty-five to sixty-six days without being transferred. Attempts were made by Hogue to infect cats, kittens and rabbits with *Trichomonas hominis* but all attempts failed.

### Journal of Laboratory and Clinical Medicine, Chicago

December, 1922, 8, No. 3

- \*Interpretation of Blood Sugar Estimations That Are Near Normal. H. J. John, Cleveland.—p. 145.
- Blood Flow in Man. M. B. Taylor, Ontario, Canada.—p. 153.
- Rapid Preparation of Polychrome Methylene Blue Stains for Frozen Sections of Fresh and Fixed Tissues. B. T. Terry, Nashville, Tenn.—p. 157.
- Action of Morphin, Codein and Apomorphin as Shown by Perfusion of Medulla of Terrapin (*Pseudomys Troosti*). W. J. R. Heinekamp, Chicago.—p. 165.
- Chemical Changes of Blood Under Influence of Drugs. II. Morphin. H. V. Atkinson and H. N. Ets, Chicago.—p. 170.
- \*Pathogenicity of Organisms Commonly Regarded as Saprophytes. E. Kellert, Albany.—p. 176.
- \*Actinomycosis of Gastro-intestinal Tract: Study of Fourteen Cases. J. C. Brogden, Rochester, Minn.—p. 180.
- \*Intestinal Antisepsis. Effect of Antiseptics on Type of Experimental Intestinal Toxemia. L. R. Dragstedt, C. A. Dragstedt and O. M. Nisbet, Chicago.—p. 190.
- Some Points in Metabolism Usually Neglected by Physician. J. F. McClendon and K. March, Minneapolis.—p. 194.
- \*Hematometric Differential Counting. A. J. Hinkelman, Oklahoma City.—p. 196.
- \*Quantitative Flocculation Test for Syphilis. Comparison of 500 Cases with Wassermann Test, Using Simplified Sachs-Georgi Technic. H. M. Feinblatt, Brooklyn.—p. 200.

**Interpretation of Nearly Normal Blood Sugar Estimations.**—When a case of glycosuria is checked by a blood sugar examination and a value of from 125 to 155 mg. per hundred c.c. is found, John says the natural tendency is to disregard this comparatively low figure and to conclude that the patient is nondiabetic because his blood sugar is so near the normal level. In the six cases presented by him the blood sugar was near the normal in all; hence it is clear that a blood sugar level which is near the normal cannot be regarded as normal unless the conditions under which it was obtained are known (whether the individual is on a diet or has been eating sparingly for a time, etc.), and unless one can demonstrate by a glucose tolerance test that the slight rise is of nondiabetic origin. Borderline cases are the most difficult to diagnose and yet the most interesting and the most important. When it is seen that the borderline case has a diabetic trend, a simple restriction of carbohydrates will carry the subject through life comfortably. Usually the total calories need not be changed. On the other hand, if such a patient is allowed to drift along without dietary supervision, he will reach the stage of diabetes when a marked restriction of proteins and total calories, as well as of carbohydrates, will be necessary. In the first instance the man is kept at his work, producing and providing for his family; but if a waiting course is adopted, the man is apt to become a permanent invalid and an economic burden.

**Pathogenicity of Saprophytes.**—Kellert asserts that under favorable conditions many micro-organisms classified as saprophytes may induce in man profound lesions and even death. Bacteria classified as nonpathogenic when found in association with acute infectious processes are not necessarily secondary invaders or contaminants.

**Actinomycosis of Gastro-Intestinal Tract.**—Any mass which occurs in the lower part of the abdomen in the region of the ileocecal juncture, particularly one associated with a persistently discharging sinus, Brogden says, should be regarded with suspicion. Repeated examination of the discharge, pathologic examination of tissue from the mass or from the walls of the sinus, marked loss of weight and strength, pronounced anemia, flexion of the thigh without disease of the vertebral column or hip joint, and marked constipation rarely fail to establish the correct diagnosis of actinomycosis of the intestinal tract. Fourteen cases of the



disease have occurred in the Mayo Clinic in the last four years. The acute form is more common; it usually begins as a typical attack of acute appendicitis. The chronic form is insidious in onset, with very slight indefinite pain in the lower abdomen. There may be practically no pain, the mass being the first sign of the disease. Diarrhea is not a constant symptom of the disease. Constipation was the rule in the fourteen cases. The ileocecal coil is most often affected; the stomach and upper small intestine are practically immune. Carious teeth, diseased tonsils, bad hygienic surroundings, overcrowding, or anything that lessens body resistance, are predisposing factors. It is doubtful whether the disease is transmitted from cattle to man. In three of the fourteen cases there was a definite history of exposure to lumpy jaw in cattle. Early operation and excision of the diseased area before the infection spreads to the surrounding tissues, frequent roentgen ray and radium treatments over the abdomen, and large doses of potassium iodid by mouth and sodium iodid intravenously offer the best hope of cure. In the later stages, after extension of the disease to the adjacent organs and sinus formation, radical surgical measures are of no avail. Some patients apparently are cured under treatment with radium, roentgen ray and the iodids; others improve wonderfully only to recur in from two to four years. Death usually occurs from cachexia and extension of the disease to the liver and thorax. The average mortality is from 50 to 70 per cent.

**Intestinal Antisepsis.**—The experimental work reported by the Dragstedts and Nisbet shows that direct application of antiseptic solutions to short segments of the intestine in animals does not effect sterilization or inhibit the production of intestinal poisons.

**Hematometric Differential Counting.**—Hinkelman has modified part A of Zollikofer's fluid as follows: yellow eosin, soluble in water, 0.5 gm.; liquor formaldehydi, concentrated, 0.5 c.c.; phenol, 95 per cent., 0.5 c.c.; distilled water, 100 c.c. This fluid causes a complete hemolysis of the red cells, swells the white cells to an extent considerably beyond their natural size and stains differentially.

**Comparison of Wassermann and Sachs-Georgi Tests.**—Five hundred parallel Sachs-Georgi and Wassermann examinations made by Feinblatt showed an agreement of 93.8 per cent. Of the thirty-one conflicting cases, sixteen were positive to the Sachs-Georgi test and fifteen to the Wassermann test. Of the sixteen patients who reacted positively to the Sachs-Georgi test but negatively to the Wassermann test, fifteen presented definite clinical evidence of syphilis. Of the fifteen patients who reacted positively to the Wassermann test but negatively to the Sachs-Georgi test, eleven presented definite clinical evidence of syphilis.

### Minnesota Medicine, St. Paul

December, 1922, 5, No. 12

- Need of Psychopathic Hospital at University of Minnesota. A. S. Hamilton, Minneapolis.—p. 683.
- \*Surgery of Acute Conditions of Gallbladder. E. S. Judd and W. P. Herbst, Rochester, Minn.—p. 687.
- \*Vomiting of Pregnancy and Its Treatment. A. G. Schulze, St. Paul.—p. 692.
- Pancreatic Cyst in Left Hypochondrium: Extirpated. H. A. H. Bouman, Minneapolis.—p. 697.
- \*Surgery in Infantile Paralysis. M. S. Henderson, Rochester, Minn.—p. 706.
- \*Value of Routine Determination of Bleeding and Coagulation Times on Newly-Born Infants. M. Warwick, St. Paul.—p. 713.
- Commoner Types of Ocular Tuberculosis. W. E. Camp, Minneapolis.—p. 719.
- Delayed Pedicle Flap in Plastic Surgery of Face and Neck. G. B. New, Rochester, Minn.—p. 721.
- \*Case of Dissecting Aneurysm of Aorta, with Distinctive Roentgen-Ray Findings. F. J. Hirschboeck and P. G. Boman, Duluth.—p. 724.

**Surgery of Acute Gallbladder Lesions.**—Judd and Herbst point out that the distinction between acute and chronic empyema of the gallbladder is purely clinical, as the surgical and pathologic pictures do not differ, and the acute and chronic conditions have the same macroscopic picture. The points necessary to a clinical diagnosis of empyema are a history of gallstones, an acute pain, and tenderness and rigidity over the gallbladder, usually with fever. In most cases there was a general history of gallbladder disease with

a number of hard colics. In only sixteen of the seventy-seven cases reviewed was there a history of jaundice; and in twenty-four of the same number, of fever. The associated conditions found at operation were appendicitis, thirty-five cases; pancreatitis, twenty-seven; common duct stones, six; duodenal ulcer, one; and stones, seventy-seven. Drainage was used more often than not. Pancreatitis occurred in twenty-seven of seventy-seven cases. The mortality is rather low following operative procedures. Of nineteen acute cases one patient died of bronchopneumonia, and of fifty-eight chronic cases one patient died of pulmonary embolism. The operative procedure in these cases depended on the acuteness of the process, the patient's general condition, and the degree of technical difficulty encountered in removing the gallbladder. The treatment of choice is cholecystectomy, but when contraindicated, cholecystostomy is performed, or in some instances, part of the gallbladder is removed.

**Treatment of Vomiting of Pregnancy.**—Patients whose vomiting is not sufficiently severe to warrant hospital isolation, Schulze says, may be treated at home by means of a high carbohydrate diet partaken of frequently during the day rather than the usual three meals. Lactose solution may be taken by mouth. Alkaline solutions may be administered with the lactose or alternating with it, but it must be remembered that alkalis, while they overcome the condition of acidosis, do not combat the condition which produces it. The urine should be examined frequently to detect a glycosuria.

**Surgery in Infantile Paralysis.**—Henderson states that surgery is indicated only in the residual paralysis following poliomyelitis and only about 25 per cent. of such patients can be helped by surgical procedures. As a rule, manipulations precede tenotomies, and manipulations with tenotomies, osteotomies, the last named being resorted to only for correction of skeletal deformities. Arthrodeses are occasionally indicated but should be performed only after a careful consideration of the power left so that the patient may use the fixed point to advantage. Lastly, but by no means least, the social status and the habits of the patient must be considered. Plastic operations on tendons are useful, but are applicable in only a small percentage of cases. A weak muscle must not be expected to do the work of a stronger muscle, particularly when it is placed in a new position and is usually at a mechanical disadvantage. Astragalectomy is the operation of choice for calcaneovalgus and in certain other conditions, but should always be accompanied by a posterior displacement of the foot.

**Value of Determination of Bleeding and Coagulation Time on New-Born Infants.**—Warwick would determine the bleeding and coagulation times, as a routine measure, for every new-born infant on the third, fifth and ninth days. After instituting these tests as a routine measure, of 250 infants, thirteen, or 5.2 per cent., showed a prolongation of the bleeding or coagulation time, or both. Of the 250, only two, or 0.8 per cent., developed symptoms, and one, or 0.4 per cent., died. Of the thirteen showing a prolongation of the bleeding or coagulation time, in whom early treatment was instituted, two, or 15 per cent., developed symptoms and only one, or 7.7 per cent., died. Three, or 23 per cent., showed congenital syphilis.

**Roentgen-Ray Diagnosis of Dissecting Aneurysm of Aorta.**—In this case, Hirschboeck and Boman found a shadow to the left of the heart, which was radiolucent and not of a uniform density, extending from a point corresponding to the top of the arch of the aorta to the left, outward and downward, nearly to the periphery, forming an obtuse angle, and then turning directly downward toward the diaphragm, where its further course could not be traced on account of its fusion with the denser subdiaphragmatic structures. The unusual radiolucence, with the aortic shadow obviously extending down along the inner portion of this shadow, and the visualization of the hilus markings through it, were considered unusual, and various diagnoses were considered, but the final decision was dissecting aneurysm which had undergone recanalization, at times free of blood, which would permit of this curious radiolucent appearance. This diagnosis was confirmed at the necropsy.



**Porto Rico Medical Association Bulletin, San Juan**

October, 1922, 16, No. 139

- Microchemistry of Blood. R. del Valle Sárraga.—p. 179.  
Child Survey. A. Fernós Isern.—p. 199.  
\*Dermatomycoses. A. L. Carrión.—p. 204.  
Recent Discoveries Affecting Control of Hookworm Disease. R. B. Hill.—p. 210.  
Case of Mesenteric Thrombosis. M. Diaz García.—p. 215.  
\*Progress of a Medical Discovery. A. M. A.—p. 218.

**Dermatomycoses.**—A special feature of the skin affections due to parasites of vegetable origin observed by Carrión in Porto Rico is the extreme extent and number of the areas affected. Intense pruritus is another feature. He describes three cases. The prompt cure under proper treatment confirmed the diagnosis in one case in which the affection had persisted for a year under various treatments applied on a mistaken diagnosis. In one man, aged 43, the eruption had persisted for fifteen months, the diagnosis wavering between syphilis, uric acidemia, herpes and other skin affections. In the third case, a woman, aged 48, the dermatomycosis was limited to the face. It had persisted for seven years, but promptly subsided under proper treatment when the microscope revealed the mycelium.

**Progress of a Remedy.**—The enthusiasm with which the profession hails certain forms of progress is generally detrimental to the profession in the long run. It is curious to see how a certain program of five stages is invariably followed by each new remedy: the nascent stage, the stage of attention, the stage when the remedy is regarded as infallible, the stage when it is discredited, and finally, the fifth and last stage, the stage of sedimentation, when wise and ripe judgment of experts has finally settled the exact place to which the remedy or the discovery is entitled. . . . Arsphenamin is now in the sedimentation stage, but organotherapy and endocrinology are far from having reached this stage. Vitamins are now passing through the stage of discredit. The conception of focal infection is in transition between the panacea and the discredit stages.

**FOREIGN**

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

**British Medical Journal, London**

Dec. 16, 1922, 2, No. 3233

- Etiology of Optic Nerve Atrophy. C. O. Hawthorne.—p. 1153.  
Id. II. J. H. Pringle.—p. 1156.  
Id. III. H. M. Traquair.—p. 1157.  
\*Bovine Actinomycosis; Pathogenesis and Treatment by Vaccines. W. M. Scott.—p. 1163.  
\*Healing of Gastric Ulcer. M. J. Stewart.—p. 1164.  
Intravital Staining: Application to Pathologic Investigation. D. F. Cappell.—p. 1166.  
\*Primary Chronic Interstitial Nephritis and Arteriosclerotic Kidney. J. S. Dunn.—p. 1166.  
Relation Between Oxyuris Vermicularis, Appendicitis and Local Eosinophilia of Appendix Wall. E. H. Eastwood.—p. 1170.  
Cholesterol Content of Blood in Anemia and Its Relation to Splenic Function. W. MacAdam and C. Shiskin.—p. 1170.  
Degenerative Diseases of Liver. F. B. Carter.—p. 1171.  
Hysterical Simulation of Fracture. H. C. Woodhouse and F. C. Jones.—p. 1171.

**Vaccine Therapy in Actinomycosis.**—Scott asserts that vaccine therapy is a valuable adjuvant in the therapeutics of actinomycosis, virulent antigens giving by far the best and most uniform responses.

**Method of Healing of Gastric Ulcer.**—Stewart has been carefully examining in the postmortem room, the stomach and duodenum for evidence of scarring, while noting at the same time the incidence of ulceration in these viscera. Statistics are given to show that, in the postmortem room, scarring is met with almost as frequently as gastric ulceration, while duodenal scars occur with about half the frequency of duodenal ulcers. This difference may be accounted for partly by the greater liability of duodenal ulcers to perforate. Single and multiple gastric scars are met with in the ratio of 4 to 1, which is exactly the same as the ratio of chronic to acute ulcers. It is suggested from this that acute and chronic ulcers have an equally good chance of healing. Hour-glass contraction of the stomach is met with in about 6.5 per cent. of all cases of completely healed gastric ulcer—that is to say, in about 8 per cent. of cases of healed chronic ulcer.

The incidence of pyloric stenosis is little more than half this. There is no evidence that carcinoma arises in connection with gastric scars, whereas in a series of ninety-eight stomach specimens received from the operating room and submitted to microscopic examination the incidence of carcinoma in cases of simple chronic ulcer was 11.5 per cent. Gastric scars are not always conspicuous, and must be looked for carefully after gently wiping away adherent mucus or food materials. Conclusive histologic evidence of scarring is afforded by the presence of fibrosis of the muscular coat. Only ulcers which have definitely involved the muscular coat leave a permanent scar, and one which can unmistakably be recognized both by naked eye inspection and by microscopic examination. The most striking scars are, of course, those of ulcers which have completely perforated the muscular coat. When an ulcer heals, the continuity of the mucosa is completely restored, but it is usually thinner than normal, and less well supplied with glands. There is no evidence as to whether or not a gastric or duodenal scar readily reulcerates, although it is, perhaps, a legitimate assumption that the thinner mucosa, together with the less vascular fibrous tissue underneath, will be more vulnerable than the normal mucous membrane. It is possible, on the other hand, that certain ulcer producing factors may have disappeared as a result of this cicatrization, and there is evidence to show that the well known recurrent character of the lesion may be dependent rather on the formation of a new ulcer or ulcers than on a breaking down of the old.

**Arteriosclerotic Kidney and Chronic Interstitial Nephritis.**

—The evidence submitted by Dunn is regarded as showing that while arteriolar sclerosis and narrowing is a frequent cause of shrinkage of the renal cortex, it does not by itself produce a condition which is likely to be mistaken for chronic nephritis, either macroscopically or microscopically. Further, it is doubtful if the loss of renal substance occasioned in this way is ever sufficient to cause uremia; death almost invariably results from cerebral hemorrhage. On the other hand, the condition which has been referred to as "primary chronic interstitial nephritis," or renal cirrhosis, which is regarded by some authors as the maximal development of arteriosclerotic atrophy of the kidney, is quite a distinct condition; it is often characterized clinically by a tendency to failure of renal function in its later stages, and pathologically it is distinguishable by the greater degree of derangement of the renal architecture. There is a greater, often a severe, fibrosis of the cortex; the amount of renal substance lost is greater, necessitating hypertrophy of that which remains; there is usually, if not always, evidence of old glomerulitis in the tufts which remain recognizable, and it is suggested that the total destruction and disappearance of many tufts is also due to an earlier inflammatory process.

**China Medical Journal, Shanghai**

November, 1922, 36, No. 6

- \*Experimental Tetany. E. W. H. Cruickshank.—p. 445.  
Submucous Resection of Nasal Septum. H. P. Nottage.—p. 469.  
Spread, Probable Mode of Infection and Prophylaxis of Leprosy. L. Rogers.—p. 474.  
Vitamins: Review. W. H. Adolph.—p. 487.

**Experimental Tetany.**—The calcium content of 100 c.c. of normal blood amounts to the following average figures: total, 9.12 mg.; plasma, 8.11 mg., and cells, 1.01 mg. In tetany, Cruickshank shows, that these drop to the average figures: whole blood, 5.7 mg.; plasma, 5.26 mg., and cells, 0.46 mg. These figures show a loss of calcium amounting to 37.2 per cent. for whole blood; to 54.4 per cent. for cells, and to 35.2 per cent. for the plasma. Diffusible calcium in normal serum averages from 60 to 70 per cent. while in severe parathyroid tetany it amounts to 94 per cent. of the total calcium. While there is an immediate state of alkalosis following parathyroidectomy, this condition is not necessarily marked, and with the development of the signs of severe tetany it passes rapidly into a condition of acidosis as shown by a steadily falling  $p_H$  of the blood. The immediate relief of the condition consequent on the withdrawal of from 70 to 100 c.c. of blood is indicative of a toxic causative factor. The calcium deficiency and the great loss of colloidal calcium are merely indicative of a rapid protein disintegration.



**Journal of State Medicine, London**December, 1922, **30**, No. 12

Arsenobenzol in Treatment of Syphilis. C. H. Mills.—p. 507.

**Lancet, London**Dec. 16, 1922, **2**, No. 5181

\*Menorrhagia in Young Girls. S. Gray.—p. 1261.

Therapeutic Action of Bayer "205" in Nine Cases of Human Trypanosomiasis. G. C. Low and P. Manson-Bahr.—p. 1265.

\*Quinidin in Auricular Disease. J. Parkinson and J. W. McK. Nicholl.—p. 1267.

Medicolegal Importance of Blood Groups. S. C. Dyke.—p. 1271.

\*Two Cases of Symptomless Perforation of Esophagus. Revealed by Sequels in Lungs. T. A. Brown.—p. 1272.

Use of Thoracoscope in Cases of Artificial Pneumothorax. S. V. Pearson.—p. 1273.

\*Case of Rapid and Fatal Absorption of Phenol Through the Skin. W. R. M. Turtle and T. Dolan.—p. 1273.

**Menorrhagia in Young Girls.**—Inasmuch as an immense majority of cases of excessive menstruation are unassociated with palpable or obvious structural change, Gray would emphasize that menorrhagia is the one condition which does not demand immediate pelvic examination, even in young girls. Unless the symptoms of hemorrhage were absolutely urgent, examination should be postponed until after trial of medical treatment. In most cases the examination will not be needed and the girl will escape the discomfort of an anesthetic. In Gray's opinion the greatest defects in the upbringing of adolescent girls are in providing for them insufficient sleep and almost no real leisure. In the high school and secondary type of school—more especially in the latter—the girls are too hard driven on the working days, the games being almost as much a matter of "drive" as the lessons. Excessive homework is often either permitted or connived at. Parents should be taught that the whole organization of the life of their daughters ought to run more quietly. Not by three days in bed every month, but by an hour or two longer in bed every night; and not by a too strenuous term succeeded by a too strenuous vacation, but by a steady and well regulated interchange of work and play they will best promote the health of their girls—of work that is well within the compass of the girls.

**Quinidin in Auricular Disease.**—Parkinson and Nicholl observed the action of quinidin in thirty-five cases, comprising six cases of paroxysmal tachycardia, five of paroxysmal auricular fibrillation, five of auricular flutter, and nineteen of auricular fibrillation. Quinidin sulphate was used and was given as a powder in gelatin capsules, each containing 5 grains. Preliminary doses of 5 and 10 grains were given on the first and second day of treatment, respectively, lest there should be any idiosyncrasy toward the drug. It was then increased to 15, 20, 30 and 40 grains daily until the change in rhythm (if any) occurred. The daily amount was given in divided doses. None was given by night. The smallest amount of the drug which effected the change into normal rhythm was 15 grains, 5 grains given on the first day and 10 grains on the second day. As much as 11 drams was given in twenty-five days to one patient, yet no change in rhythm resulted, though the dose reached 50 grains daily on four successive days. In three intractable cases 50 grains was given daily for a short period, but in none was the treatment successful. When normal rhythm was restored, the dose was gradually reduced until 5 grains was taken twice or thrice daily. In some of the paroxysmal cases, in which prolonged administration was requisite, the average dose was 5 grains, three times daily. The conclusions reached are: In paroxysmal auricular fibrillation quinidin is indicated, for in some cases it either inhibits the attacks or reduces their incidence; and no other drug, not even digitalis, will do this. In paroxysmal tachycardia quinidin proves to have little or no effect. In auricular flutter it is likely to prove valuable, for it sometimes restores normal rhythm directly, and if not, may succeed after digitalis alone has converted flutter to fibrillation but not to normal rhythm. In a small proportion of cases with established auricular fibrillation, quinidin restores normal rhythm, which continues with clinical benefit. In most cases it is unsuccessful in that normal rhythm is not restored, or if restored is not maintained, or restoration is unattended by clinical improvement.

**Symptomless Perforation of Esophagus.**—In the case cited by Brown the assumption is that a fish bone or similar object caused perforation of the esophagus and pleura, and opened up the way for the entry into the lung of septic organisms. Hemoptysis directed attention to the lung condition. Roentgen-ray examination revealed no foreign body; it showed an irregular opacity of the lower two thirds of the right lung, and suggested the presence of a cavity near its base. The patient gradually got weaker and the right side of the chest scarcely moved with respiration. Death ensued. At the necropsy, the right side of the chest was found full of dark brown, foul smelling fluid, containing fragments of disintegrated lung. Only the lower part of the lung was left, and this was almost completely gangrenous, the few areas not so affected being solid and gelatinous in appearance. It was impossible to say what had become of the pleura because the lung was so completely destroyed. There were no adhesions whatever, and no enlarged glands could be found. A small sinus, just large enough to admit a probe, led from the right side of the esophagus, at its lower end, into the gangrenous mass in the right pleural cavity. No foreign body could be found anywhere. The liver and myocardium showed cloudy swelling. A second case illustrates the possibility of morbid changes in the lungs leading to a fatal issue some years after perforation of the esophagus, probably caused by a foreign body, and furnishing no symptoms at the time.

**Fatal Absorption of Phenol Through Skin.**—Dolan cites the case of a man who unknowingly broke a bottle of phenol in his pocket and within an hour died from poisoning resulting from the absorption of the phenol by the skin.

**Medical Journal of Australia, Sydney**Nov. 4, 1922, **2**, No. 19

Restoration of Round Ligaments in Retroversion of Uterus. A. J. Nyulasy.—p. 517.

Streptococcus: Biggest Menace to Mankind. S. Pern.—p. 518.

\*Patent Foramen Ovale. C. Joyce.—p. 529.

Normal Gastric Cycle. F. L. Apperly.—p. 523.

\*Myxedematous Dyspituitarism. J. P. Hastings.—p. 526.

**Myxedematous Dyspituitarism.**—Hastings makes use of this term in describing a case which followed a thyroidectomy done in 1915. This induced a synergetic action on the part of the pituitary body which was definitely enlarged. For a year or two following the thyroidectomy, the synergetic action of the pituitary body prevented the development of the myxedematous symptoms. Then the hyperpituitarism was followed by hypofunction and thus produced a clinical phenomenon which is best described as myxedematous dyspituitarism.

**Patent Foramen Ovale.**—Two cases of patent foramen ovale are reported by Joyce. The patients occupied the same ward simultaneously.

**Bulletin de l'Académie de Médecine, Paris**Nov. 21, 1922, **88**, No. 38

\*Tuberculosis and Pregnancy. Pinard.—p. 259.

\*Carbohydrates and Diet in Diabetes. Desgrez et al.—p. 276.

\*Neuroparalytic Keratitis. F. Lagrange.—p. 288.

\*Artificial Pneumothorax in Pulmonary Gangrene. P. Emile-Weil.—p. 297.

**Tuberculosis and Pregnancy.**—Pinard is extremely opposed to Bar's recent paper on therapeutic abortion in tuberculous mothers. He did not see any bad influence of gestation in tuberculous cows. He saw many pregnant women die of tuberculosis, as he has seen other patients dying from it also. He saw healthy children born from mothers dying of tuberculosis, and contents himself by treating the tuberculous woman and separating the child from her after delivery. He asks physicians to follow him to conserve the traditions and the good name of French medicine.

**Carbohydrates and Diet in Diabetes.**—Desgrez, Bierry and Rathery maintain their conviction that levulose may be much better tolerated than glucose. It has an antiketogenic effect. They find that there is no essential difference between diabetic acidosis and the acidosis of healthy people deprived of carbohydrates. The authors admit that the same diet may cause a different ketogenesis, and attribute this partly to the endogenous supply of glycogen, partly to individual differences in



the capacity of balancing between the ketogenic and anti-ketogenic substances. The diet has to be balanced accordingly. Vitamins should not be forgotten.

**Neuroparalytic Keratitis.**—Lagrange describes three cases and concludes from his clinical observations that a coincident affection of the trigeminus and of the ophthalmic ganglion is necessary to cause neuroparalytic keratitis.

**Artificial Pneumothorax in Pulmonary Gangrene.**—Emile-Weil reviews successful and unsuccessful cases of this operation. No pneumothorax should be tried in cases with purulent complications in the pleura or pericardium. Bilateral lesions are an absolute contraindication. The most favorable localization of the resulting cavity is in the parenchyma near the hilus. Once the cavity is formed, the earlier the treatment, the better the results, although Forlanini's successful case had been ill for six years. Specific antigangrene serum, if used in large quantities, proves very useful.

Nov. 28, 1922, **88**, No. 39

Relations Between Tuberculosis and Pregnancy. A. Hergott.—p. 309.

Law on Poisonous Drug Traffic. P. Cazeneuve.—p. 312.

\*Pyoculture. P. Delbet and A. Beauvy.—p. 319.

**Pyoculture.**—Delbet and Beauvy report experiments on animals undertaken to refute an objection by Metchnikoff. The results confirmed the value of the test. Where the micro-organisms did not multiply in pus from the abscess, the animals survived in spite of the virulence of the micro-organisms.

### Bulletin Médical, Paris

Nov. 25, 1922, **36**, No. 48

\*Syphilis of the Ear. J. Ramadier.—p. 965.

\*Paresthesia in Otorhinolaryngology. P. Aubriot.—p. 969.

Clinical Aspect and Treatment of Venous Complications of Otitis. H. P. Chatellier.—p. 971.

**Syphilis of the Ear.**—Ramadier reviews the possible localizations of syphilis in the ear. The affection of the middle ear is very important in hereditary syphilis. Acquired syphilis prefers the nervous parts. The specific neuritis of the auditory nerve may appear sometimes during a general secondary eruption, or at the end of it, although it may come in the tertiary stage. It starts with attacks of tinnitus, rarely dizziness. After a few days, the hearing is impaired, usually in one ear more than in the other. It is typical, that this neuritis is usually dissociated, affecting either the cochlear, or the vestibular portion of the nerve. In the treatment, the so-called neurorecidives have to be avoided by using mercury at the start and progressively increasing amounts of arsphenamin derivatives.

**Paresthesia in Otorhinolaryngology.**—Aubriot analyzes these phenomena and considers their foundation, which can be either an illusion derived from a minimal anatomic lesion, or an hallucination. In both cases there is no proportion between the stimulus and the psychic reaction. Such a meagre grain can develop so strongly only on an abnormal soil. The patients are usually very eloquent. The most common complaints are the feeling of a foreign body, dryness, phlegm, burning, and constriction. A careful examination is necessary to eliminate organic lesions like the chronic deep tonsillitis, tuberculous and syphilitic lesions near the tubes.

### Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 24, 1922, **46**, No. 33

Comment on "Calcium Chlorid." H. Barbier.—p. 1540.

\*Intoxication with Benzene and Benzin. Duvoir.—p. 1541.

\*Benzene Anemia. Faure-Beaulieu and Lévy-Bruhl.—p. 1543.

Symmetric Purpura in a Tabetic with Hodgson's Disease. A. Cain and P. Hillemand.—p. 1544.

Severe Simple Cryptogenetic Anemia Cured by Blood Injections. P. Emile-Weil and P. Isch-Wall.—p. 1547.

Intermittent Biliary Fistula. Carnot and Blamoutier.—p. 1553.

Vaccines in Acute Pulmonary Affections. J. Minet.—p. 1557.

\*Paroxysmal Hemoglobinuria. Ardin-Delteil et al.—p. 1562.

\*Scopolaminomania. E. D. Paulian and Tomovici.—p. 1567.

Instability Due to Lenticular Nucleus. E. D. Paulian.—p. 1568.

**Intoxication with Benzene and Benzin.**—Duvoir emphasizes the necessity to distinguish between the cyclic compound benzene and the aliphatic benzin, which is ten times less toxic. Besides, it is necessary to make an exact analysis of the poisoning substance, because there are different amounts of impurities in benzenes, which may be very toxic.

**The Toxic Agent in Benzene Anemia.**—Faure-Beaulieu and Lévy-Bruhl report a case of anemia due to professional contact (inhalation) of benzene of the highest purity.

**Paroxysmal Hemoglobinuria.**—Delteil, Derrieu and Azoulay tried without success to influence this condition by repeated intravenous injections of 25 to 40 c.c. of the patient's own serum. Antisyphilitic treatment did not change the positive Wassermann reaction, but the patient after this could be exposed to cold without getting the hemoglobinuria.

**Scopolamin Addiction.**—Paulian and Tomovici report two cases of scopolaminomania, which may be important because the use of this drug against the sequelae of encephalitis is often deemed necessary. There were no other pathologic symptoms except the craving for the drug.

### Presse Médicale, Paris

Nov. 22, 1922, **30**, No. 93

Bronchitis and Catarrhs. F. Bezançon and S. I. de Jong.—p. 1005.

\*New Kind of Paraplegia. C. Vincent and E. Bernard.—p. 1006.

\*Treatment of Pneumococcus Keratitis. G. Pacalin.—p. 1008.

**New Kind of Paraplegia.**—Vincent and Bernard describe a case of apparent paraplegia due to a contraction of the anterior tibialis, with spasms similar to Parkinson's disease.

**Treatment of Ulcerative Pneumococcus Keratitis.**—Pacalin recommends an ointment containing 2 per cent. of ethylhydrocuprein and 1 per cent. of methylene blue. Ethylmorphin should not be forgotten, and atropin must be used, even in cases of marginal ulcers. Its only contraindication is increased intra-ocular pressure. Pacalin does not need to employ the thermocautery since he uses ethylhydrocuprein. A 5 per cent. tincture of iodine is sufficient to touch delicately the ulcer. It is good to wait a moment for the evaporation of the alcohol from the cotton before touching the ulcer. Hot compresses should be applied. Injections of milk are useful, if they raise the temperature.

### Annali d'Igiene, Rome

October, 1922, **32**, No. 10

\*Epidemic of Typhoid Fever. P. Maione.—p. 793.

\*Partial Disinfection of Earth. G. Moreali.—p. 804.

\*Experimental Infections Through the Teeth. P. Farina.—p. 810.

Recent Literature on Milk.—p. 816.

**Epidemic of Typhoid Fever.**—Maione describes an epidemic of forty-six cases of typhoid fever in a community of 940 inhabitants. The outbreak was due to contaminated wells, and appropriate measures were effective.

**Partial Disinfection of Earth.**—Moreali finds that a 5 per cent. solution of phenol has a partial germicidal power, but it does not allow the isolation of the tetanus bacillus if other sporulating microorganisms are present.

**Infections Through the Pulp of Teeth.**—Farina produced septicemia by introducing the bacilli of chicken cholera into the teeth of rabbits.

### Policlinico, Rome

Nov. 1, 1922, **29**, Medical Section No. 11

\*Clinical and Pathologic Study of Botulism. S. Pisani.—p. 567.

\*Pseudoleukemia and Osteosclerosis. S. Pastore.—p. 595.

\*Thermoprecipitation in Plague. M. Pergola.—p. 610.

**Clinical and Pathologic Consideration on Botulism.**—Pisani gives the pathologic findings in the bulbar and pontine nuclei and anterior cornua of the spinal cord. He emphasizes the importance of lesions of the parasympathetic system: the greatest lesions of cells are at the level where the autonomous fibers arise. Most of the clinical symptoms, like the abolition of lacrimal, salivary, gastric, bronchial and skin secretions, and absence of the oculocardiac reflex, can hardly be explained otherwise than as a lessened influence of the parasympathetic. Pilocarpin acts very favorably. Only one of the three cases described in detail was fatal.

**Pseudoleukemia and Osteosclerosis.**—Pastore reviews thirteen cases of other authors and one of his own and confirms the fact that diffuse osteosclerosis is connected with different affections of the blood producing organs.

**Thermoprecipitation in Plague.**—Pergola shows the superiority of thermoprecipitation in the postmortem diagnosis of



pulmonic plague over the other methods, including experiments on animals.

Nov. 15, 1922, 29, Surgical Section No. 11

- Familial Appendicitis. O. Cignozzi.—p. 585.  
Ankylosis of Jaws of Syphilitic Origin. A. Malerba.—p. 591.  
Gas Cysts in Intestines. G. Matronola.—p. 610.  
Syphilitic Tumor of the Kidney. F. Niosi.—p. 621.  
\*Blocking the Splanchnic Nerves. B. Quarella.—p. 638.

**Blocking the Splanchnic Nerves.**—Quarella relates that the effect was perfect in all but one of his twelve cases in which he operated in the abdomen under regional splanchnic analgesia. In the one case in which supplementary ether was required, the extensive cancer was on the lesser curvature of the stomach, and adhesions probably interfered with the diffusion of the anesthetic. He confirms the impression that the surgeon feels as if he were operating on a cadaver. There is no contraction, no shrinking away from the knife; the patient breathes tranquilly and the expression is calm. After the operation the color and pulse keep good, the breathing tranquil, expectoration easy. From the literature, only 10 per cent. at most require a little supplementary anesthetic. The contraindications are those for local anesthesia in general, and inflammatory foci in the region of the celiac plexus. The only danger seems to be that the left renal vein might be injured when the needle is pointed too low down, as this vein passes in front of the body of the second lumbar vertebra. He uses a special needle, with a guide.

Nov. 27, 1922, 29, No. 48

- Anatomy and Physiology of the Temporomandibular Joint. P. Dorello.—p. 1557.  
\*Diagnostic Pneumothorax. C. Vallardi.—p. 1561.  
\*Transmission of Sheep-Pox to Man. A. Bevilacqua.—p. 1563.  
Chenopodium in Italy. E. Cavazzani.—p. 1565.

**Diagnostic Pneumothorax.**—Vallardi used artificial pneumothorax for a roentgen-ray diagnosis of echinococcus cysts.

**Transmission of Sheep-Pox to Man.**—Bevilacqua reports two cases of general infection due to contact with sheep affected with ovinia.

### Riforma Medica, Naples

Nov. 13, 1922, 38, No. 46

- Transactions of Congress of Internal Medicine.—p. 1081: Main topics: Anaphylactic Asthma; Icterus; Duodenal Ulcer.

### Rivista di Clinica Pediatrica, Florence

September, 1922, 20, No. 9

- \*Differential Diagnosis of Rubella. P. Brusa.—p. 513.  
\*Benzoin Reaction in Young Children. G. Squarti.—p. 535.

**Differential Diagnosis of Rubella.**—Brusa was impressed with the peculiar leukocyte findings during a small epidemic of rubella. The eruption in some cases suggested measles, in others, scarlet fever, but the course was typical of rubella. In all examined—even during the incubation phase—the blood showed leukocytes with an excentric nucleus, having the chromatin arranged like the spokes of a wheel. There may be one or more nucleoli, and the protoplasm is intensely basophil and vacuolated. They are probably derived from the plasma cells. Cells of this description were never found in measles, scarlet fever or infectious erythema. There seems to be some special irritation of the lymphatic system in rubella, and the effect is more pronounced in cases of the lymphatic constitution and in debility from various toxic and infectious influences. The differential blood counts on different days of the disease are tabulated for comparison. These peculiar cells formed 10.33 per cent. of the leukocytes on the second day in one girl of 4 years who had previously had several infectious diseases. The percentage was 9.33 the fourth day in one infant, and 5.33 in several on the third day. The peak seemed to accompany the enlargement of the glands, which is almost constant in this disease, and reaches its maximum at the third to the sixth day of the eruption.

**The Benzoin Reaction in Children.**—Squarti gives minute directions for the benzoin test of the spinal fluid, and tabulates the reaction in forty-three children with various brain or meningeal affections, especially inherited syphilis. There was no reaction in the normal or in those with simple hydrocephalus, but with inherited syphilitic meningeal disease the

response was very often positive with the weaker dilutions. In all other forms of meningitis the response was negative, or occurred only with the stronger dilutions.

### Anales de la Facultad de Medicina, Montevideo

August, 1922, 7, No. 6

- \*Calculus in Appendix. A. Navarro.—p. 307.  
\*Achlorhydria. C. Nario.—p. 316.  
\*Reflex Abdominal Syndromes. C. Stajano.—p. 323.  
Case of Paget's Disease of Bones. J. Nin y Silva.—p. 335.  
\*Slow Pulse from Extrasystoly. H. J. Rosello.—p. 345.  
Syphilis without Primary Chancre. J. May.—p. 353.

**Calculus in Appendix.**—The man's appendix measured 11 cm. and the calculus weighed 1.4 gm. and was composed of pure cholesterol. The cholesterol content of the blood was within normal range.

**Achlorhydria.**—In the first of Navarro's three cases the diagnosis had wavered between gallstones and a gastric or duodenal ulcer, but under systematic treatment to supply the lacking gastric and pancreatic juices, the symptoms almost entirely subsided. In the second case the symptoms had led to an operation for supposed duodenal spasm from an ulcer, but the findings were negative, and improvement followed medical treatment with digestive juices. The third patient was a man of 40 with a history of stomach disturbances for fifteen years. He had taken treatment for gastric ulcer without more than temporary relief, and cholelithiasis plus pancreatitis seemed the only explanation until discovery of the achlorhydria. This aggravates disturbances from cholelithiasis or pancreatitis, and correction of the stomach chemistry relieves some if not all of the symptoms. Navarro urges study of the chemistry of the stomach before proceeding to any operation in this region, and especially before and after resection of the pylorus, as a basis for analysis of stomach functions.

**Reflex Clinical Picture with Intra-Abdominal Hemorrhage.**—Rupture of an ovarian pregnancy and rupture of a blood cyst in the ovary caused sudden, stormy symptoms in the three cases described. The peritoneum was flooded with blood in the first case, but there was not much extravasation in the second, and in the third there had been no hemorrhage, but the same syndrome had been induced in all, and suggested rupture of an extra-uterine pregnancy. The only feature common to all had been the sudden distension of the ovary, that is, sudden distension of its sympathetic network of nerves. And this, Stajano asserts, is responsible by reflex action for the sudden and alarming clinical picture. It is not caused by the intra-abdominal hemorrhage, as usually taught, but by the sudden, violent distension of sympathetic nerve fibers. Every major operation entails a predisposition to such reflex action. It may affect the digestive apparatus, the heart, or the brain. The symptoms from this reflex action may increase in intensity together with the hemorrhage which generally accompanies it. It is important to distinguish between the symptoms for which each is responsible. He has seen a large enema of coffee arrest the reflex clinical picture.

**Bigeminal Pulse with False Bradycardia.**—The pulsus bigeminus in Rosello's case was due to extrasystoles.

### Prensa Médica Argentina, Buenos Aires

Sept. 30, 1922, 9, No. 12

- Pathology of Pituitary Region. C. P. Waldorp.—p. 309. Cont'd.  
\*Polycystic Kidney. J. Palacio.—p. 318.  
\*Eosinophilia with Hypertrophied Prostate. Legueu and Astraldi.—p. 324.  
\*Arsenicals in Treatment of Neurasthenia. R. Ortega Belgrano.—p. 326.

**Polycystic Kidney.**—Palacio's patient was a man of 36 with numerous evidences of dystrophia from inherited syphilis.

**Eosinophilia with Abnormal Prostates.**—Legueu and Astraldi report eosinophilia of 1, 2, 3, 4 and even 8 per cent. in ten men with complete retention of urine, treated by an operation on the prostate. The range was similarly high—up to 11 per cent.—in thirteen others with adenomatous prostates, not confirmed by operation. The eosinophilia does not seem to have any connection with the composition of the urine or the size of the prostate adenoma. The mere presence of the adenoma is enough. On the other hand, the number of eosinophils was abnormally low in cases of cancer of the prostate. This may aid in the differential diagnosis.



**Arsphenamin in Treatment of Neurasthenia.**—Ortega Belgrano believes in striking quick and striking hard in treatment of neurasthenia. Nothing is so well adapted for this, he says, as arsphenamin. He has been using it for this purpose for eight years and here reviews his experiences in this line with 18 women and 24 men. He gives by the mouth the day before and the day of the injection 5 drops of epinephrin solution, two or three times during the day. He then gives a minute dose of the arsphenamin, about 0.05 gm. and gradually increases the amount to a maximum of 0.45. The injection is made intramuscularly or subcutaneously: "The intravenous route is too dramatic for the neurasthenic." The total amount injected varied from 3 to 6 gm. Two months afterward he commences a new series of injections. The results were a complete cure in 30; great improvement in 8, and little benefit in 4, although in this last group he extended treatment to include a third series. The patients threw off their fatigue and their anxious worried mood, and became cheerful and visibly rejuvenated in aspect and functioning.

Oct. 30, 1922, 9, No. 15

- Hydramnion with Twin Pregnancy. J. B. Gonzalez and A. Villa.—p. 409.  
\*Localization of Tender Points. D. Del Valle.—p. 421.  
Volvulus of the Ileum from Diverticulitis. D. S. Cúneo.—p. 424.  
Vernes' Flocculation Reaction in Syphilis. J. B. Arizabalo.—p. 426.  
Bill to Insure Safe Drinking Water in Factories. E. Catalán.—p. 428.

**Improved Technic for Localization of Tenderness.**—Del Valle emphasizes the extreme precision as to localization of tender points in the abdomen by gently laying the hand flat on the abdomen, and tapping lightly the knuckle of the flexed forefinger, the elastic hammer striking the knuckle at the tip of the angle of the flexed joint. The skin of the abdomen is not pressed in, but the light tap of the hammer jars the tissues in the depths along the axial prolongation of the terminal and middle phalanges of the finger. When the abdominal wall is pressed in with the finger, as in the usual palpation in the search for tender points, the pressed in wall distributes the effect fan-like over the entire subjacent tissues. With this light percussion localization of the tender point, he was able to differentiate gallbladder disease in a case of chronic dyspepsia, the symptoms pointing only to the stomach, and in acute appendicitis with puzzling symptoms, adnexitis, etc. A few typical cases are described in which this *algésio-localización-percutoria*, as he calls it, alone gave the needed clue. The article is illustrated.

### Revista de la Asoc. Méd. Argentina, Buenos Aires

September, 1922, 35, No. 215

- \*Gangrene of Lung. A. Bergman.—p. 445.  
Radiology of Paget's Disease. C. Donovan.—p. 458.  
\*Spirochetal Bronchitis. G. Aráoz Alfaro et al.—p. 461.  
\*Sporadic Acute Myoclonus. A. Bergman.—p. 476.  
\*Aneurysm of Femoral Vessels. A. N. Sacco.—p. 485.  
Pseudomyxoma of Appendicular Origin. O. F. Mazzini.—p. 492.  
Diffuse Lipomatosis in Man of 55. L. Ayerza and I. Hernández.—p. 500.  
\*Cleavage Between Colon and Omentum. A. Gutiérrez.—p. 505.  
\*Resection of Duodenal Ulcer. N. Tagliavacche.—p. 515.  
\*Extreme Gastropnoxis. A. Gutiérrez.—p. 517.  
The Question of Appointments to Hospital Services.—p. 523, and p. 535.  
Epithelioma of Accessory Lacrimal Gland. A. Natale.—p. 545.  
Hole in the Macula. E. de la Vega.—p. 548.  
Chronic Poliomyelitis. J. A. Esteves.—p. 553.  
Pathologic Anatomy in Case of Mongoloid Idiocy. R. Sánchez Elia.—p. 561.  
Tumor in Occipital Lobe. J. M. Obarrio.—p. 564.  
Rare Case of "Stereotype Movements." F. Morixe.—p. 578.

**Gangrene of the Lung.**—Bergman discusses the peculiar bacteriologic findings in a case of gangrene following influenza in a man with syphilitic lesions in the lung.

**Spirochetal Bronchitis.**—In one of four cases described, the spirochetal process had involved the lung, and the severe clinical picture had been that of pulmonary tuberculosis for seven months, with night sweats, loss of 8 kg. in weight, and blood-streaked sputum. The onset had been stormy, with fever, chills and incessant cough. In some of the cases, old alveolar pyorrhea had preceded the bronchitis. Subcutaneous inoculation of sputum in guinea-pigs induced a typical abscess swarming with the Castellani spirochetes and fusiform bacilli. Mixed treatment with mercury and neo-arsphenamin was promptly effectual.

**Sporadic Myoclonus.**—The man of 32 developed suddenly an acute multiple infectious myoclonus. The onset, he said, was like an electric shock. By the next day he was unable to

control his legs. The course of the disease was a little less than three weeks, recovery being apparently complete. No relief was obtained from bromids and chloral or suggestion.

**Traumatic Femoral Aneurysm.**—When Sacco operated on the arteriovenous aneurysm it was "dead." The case was peculiar further in that the extensive aneurysm had not caused any symptoms, attracting the young man's attention to his leg, for eight months after the trauma. The sac resected was 17 cm. long and 14 cm. wide at its largest point. The whole of that leg had been much larger than its mate, but it subsided to normal circumference in a month or two after the operation.

**Cleavage Between Colon and Omentum.**—Gutiérrez explains the mechanism and the advantages of detaching the secondary union which interferes with posterior gastro-enterostomy.

**Resection of Duodenal Ulcer.**—Tagliavacche resected the duodenal ulcer during an operation for removal of the gallbladder, and did not attempt gastro-enterostomy. The cure has been complete during the five years to date.

**Gastrectomy for Gastropnoxis.**—The disturbances from the extreme gastropnoxis had been so severe that the man of 28 contemplated suicide. Six months after the almost total gastrectomy, he had gained 12 kg. in weight and had had no return of his previous disturbances.

### Revista Española de Medicina y Cirugía, Barcelona

August, 1922, 5, No. 50

- \*Malta Fever. A. Salvat Navarro.—p. 433.  
\*Support for Operations on the Kidney. M. Serés.—p. 440.  
\*Cerebrospinal Rhinorrhea. G. Roqueta.—p. 442.  
Roentgenotherapy for Laryngeal Cancer. A. Battlés.—p. 449.  
Formaldehyd in Serodiagnosis of Syphilis. P. González and M. Armangué.—p. 451.  
Recent Works on Neurology. J. Vilató.—p. 453.

**Malta Fever.**—Salvat remarks that the differential diagnosis of Malta fever is very difficult from clinical examination alone. He advises to examine the blood for agglutination and fixation of complement as well as for the micrococcus. It may be necessary to inoculate several plates or slanting tubes; he prefers an agar culture medium with a little sugar, and says that it is best to draw the blood when the fever is at its height. Malta fever meningo-encephalitis is usually recognized only by some casual hint. Duran de Cottes insists on the differential value of the local reaction to intradermal injection of a few drops of an emulsion or autolysate of the killed micro-organisms. Intense hyperemia follows in three or four hours, and may resemble an erysipelatous patch. The ophthalmoreaction is less certain. In dubious cases, inquiry as to prevailing morbidity among goats may give the clue.

**Serés' Support for Kidney Operations.**—Serés insures the absolute immobility of the patient by having him lie on his side on a broad and high wooden bolster in which a deep, broad transverse groove is hollowed out. The trunk lies in this groove which holds it firm in the region of the kidneys, while the exposed side bulges upward. The arms and legs are free. More than 400 operations on kidneys with this *soporte-fijador* have amply confirmed, he says, its superiority to the usual arrangements for operations in the lumbar region. Illustrations accompany his description.

**Cerebrospinal Rhinorrhea.**—In one of Roqueta's three cases the woman's intense headaches stopped when the profuse discharge from one side of the nose began. The vomiting and dizziness were also much improved, but all returned with the same intensity when the rhinorrhea was temporarily arrested. They subsided anew when the flow was restored. The woman was syphilitic, and her physician insisted that the rhinorrhea was of nasal origin, from excessive treatment for the syphilis. In the second case there had been hydrocephalus since meningitis in childhood. Whenever the profuse rhinorrhea was arrested, severe cerebral symptoms developed. Both these patients died in a few months or years.

### Deutsches Archiv für klinische Medizin, Leipzig

Nov. 2, 1922, 140, No. 5-6

- \*Flora of Human Intestines. L. Bogendörfer.—p. 257.  
\*Sequelae of Epidemic Encephalitis. F. Palitzsch.—p. 271.  
\*Blood Serum and Quantitative Analysis. G. Leendertz.—p. 279.



- \*Research on Extrasystoles. B. Kisch.—p. 286.  
 \*Uric Acid in Blood in Nephritis. G. Czoniczer.—p. 289.  
 \*Urobilin. A. Adler.—p. 302.  
 Polyglandular Syndromes. S. Hirsch.—p. 323.  
 \*Pellagra. A. Lustig.—p. 342.  
 \*Pressure on Veins in Baths. E. Schott.—p. 358.  
 \*Action of Iodids on Blood Viscosity. G. Deusch and B. Frowein.—p. 377.

**The Micro-Organisms of the Human Intestine.**—Bogendörfer examined the contents of the ileum with Ganter's apparatus. At a distance of from 1 to 2.5 meters from the pylorus, two kinds of diplococci were found in healthy persons. The colon bacillus was never discovered above a point 2.5 meters below the pylorus. Short gram-negative and long gram-positive bacilli and other micro-organisms were cultivated from some subjects, but the number was small. In pathologic cases, especially with anacidity of the stomach, micro-organisms which usually are found only in the colon were discovered in the small intestine. They may be present, however, even with hyperacidity.

**Sequelae After Epidemic Encephalitis.**—Palitzsch reviews the outcome in forty cases of encephalitis: 22.5 per cent. died; 15 per cent. were incapable of any work; 17.5 per cent. had impaired earning ability; 25 per cent. were able to work in spite of some sequelae, and only 20 per cent. recovered.

**Blood Serum and Quantitative Analysis.**—Leendertz compared the amount of protein in the serum resulting from clotting of whole blood with that of the serum resulting from clotting of plasma. He found that the serum from whole blood contains less protein. This is due to the migration of salt solution from the corpuscles. The serum is therefore not suitable for very exact quantitative determinations. The usual method of estimating the fibrinogen from the difference between the proteins of plasma and the proteins of serum is misleading if the serum was obtained from the whole blood.

**Research on Extrasystoles.**—Kisch discusses the mechanism of interpolation of auricular contractions in connection with automatism of the ventricles.

**Uric Acid in Blood in Diagnosis and Prognosis of Nephritis.**—Czoniczer in thirty-six cases with uric acid content exceeding 3.5 mg. in 100 c.c. of blood, always found more than 50 mg. of nonprotein nitrogen. He believes he is justified in concluding from these thirty-six severe cases that a lower uric acid content excludes nephrogenous nitrogen retention. Amounts exceeding 9 mg. give an extremely bad prognosis. The uric acid in the blood was increased in cases of pseudo-uremia with retention of small amounts of nitrogen. He admits that the method has no value in gout, but gives no directions for excluding this diathesis, which is not an uncommon basis for nephritis.

**Urobilin.**—Adler examined healthy and sick persons with his quantitative modification of Schlesinger's test. In healthy persons, 20 to 25 mg. of urobilin are excreted in twenty-four hours. Ingestion of proteins increases urobilinuria, as does hunger. A heavy protein meal after hunger yields large amounts. In pathologic cases the amount excreted in the morning is higher, and protein food increases it very strongly. In cirrhosis of the liver and cases of severe hepatitis, 1 gm. of urobilin may be excreted in twenty-four hours. Pneumonia, scarlet fever, typhoid, severe tuberculosis may yield 0.6 gm. In hemolytic icterus 0.3 to 0.4 gm. is excreted and it may be increased by injecting epinephrin. In pernicious anemia between 30 and 50 mg. may be excreted. Urobilinuria is the most sensitive indicator of retention of bile in the blood.

**Pellagra.**—Lustig reports the results of investigations made by the official Italian commission since 1910. All the theories presented were controlled. They conclude that corn is the responsible factor. Possibly this is effective by reason of the low content of protein and vitamins in the corn diet of the peasants.

**Pressure on Veins in Baths.**—Schott demonstrates that the mere hydrostatic pressure of the water can increase the venous pressure sufficiently to stimulate the heart. This may be an additional factor in the therapeutic action of baths.

**Action of Iodids on Blood Viscosity.**—Deusch and Frowein find that inorganic preparations of iodine do not lower the

protein content of the serum, as do preparations from the thyroid gland. The viscosity of the blood did not parallel the changes in the protein content.

## Deutsche medizinische Wochenschrift, Berlin

Nov. 24, 1922, 48, No. 47

- \*Poliomyelitis in Marburg. E. Müller.—p. 1569.  
 Untoward Effects of Disinfection of Hands with Denatured Alcohol. E. Payr.—p. 1572.  
 \*Periarterial Sympathectomy. F. Brüning.—p. 1572.  
 \*Future of Roentgen Rays. O. Strauss.—p. 1575.  
 \*Permanent Slow Irrigation in Puerperal Fever. A. Wagner.—p. 1577.  
 Intraperitoneal Infusions. Weverinck.—p. 1577.  
 \*Dilution of Milk in Infant Feeding. J. Levy.—p. 1578.  
 Venesection in Infants. F. Rohr.—p. 1579.  
 Freeing Cowpox Lymph from Microbes. A. Groth and K. Arnold.—p. 1580.  
 Yeast and Yeast Extract and Its Taste. T. Sabalitschka.—p. 1582.  
 The Uncomplicated Abortion. M. Henkel.—p. 1583.  
 Examination of the Nose. Finder.—p. 1585.  
 Birth and Death Rate of Children in East Africa. R. Lurz.—p. 1588.  
 Cont'n.  
 Distress of Physicians and Compulsory Sickness Insurance. Stier-Somlo.—p. 1588.

**Poliomyelitis in Marburg.**—Müller discusses chiefly the epidemiologic moments. The disease is transmitted mostly by healthy carriers, who cannot be isolated. The final disinfection of the house is, therefore, rather a sort of psychotherapy than a preventive act.

**Periarterial Sympathectomy.**—Brüning found that the spasm of arteries reaches sometimes up to the axillary artery from the periphery. Jaboulay-Leriche's operation consists in removing the adventitia of the artery for the length of about 8 cm. This has to be done as high as possible, to avoid anastomoses. It is indicated in all the vasomotor-trophic neuroses which are accompanied by angiospastic conditions, like acroparesthesias, Raynaud's disease, acro-asphyxia, and eventually scleroderma. It is contraindicated in embolic and diabetic gangrene.

**Changes and Future of Roentgen-Ray Treatment.**—Strauss postulates an investigation of the question, whether we should use as high doses in the postoperative treatment, as for the treatment of the primary tumor.

**Permanent Irrigation in Puerperal Fever.**—Wagner recommends in puerperal fever permanent irrigation of the diseased part (perineum, vagina or uterus), and attributes the good results simply to the drainage.

**Dilution of Milk for Infants.**—Levy demonstrates on 195 cases that even in the first three months, a more concentrated (two thirds) milk is better tolerated, than milk which has been diluted to one half.

## Klinische Wochenschrift, Berlin

Nov. 25, 1922, 1, No. 48

- \*Pathology of Eclampsia. T. Fahr.—p. 2361.  
 \*Clinical Aspect of Eclampsia. T. Heynemann.—p. 2363.  
 \*Ferments in Blood. P. Rona, H. Petow and H. Schreiber.—p. 2366.  
 \*Pneumococci in the Healthy and Sick. A. Seitz.—p. 2367.  
 \*Hypoglycemia After Rectal Infusions of Sugar. Rubino and Varela.—p. 2370.  
 \*Elimination of Spleen. E. Seifert.—p. 2374.  
 Methods to Stop Bleeding. L. König.—p. 2376.  
 Potato Flour for Infants. E. Müller.—p. 2378.  
 \*Influence of Drugs on Urethral Glands. A. Perutz.—p. 2381.  
 \*Blood Changes in Cancer. H. A. Dietrich.—p. 2382.  
 Needle Electrodes in Electrocardiography. H. Sachs.—p. 2383. Reply. W. Straub.—p. 2383.  
 \*Alimentary Hyperglycemia and Glycosuria. C. Traugott.—p. 2384.  
 \*Quinin and Hemoclasia. M. Grossmann.—p. 2385.  
 Artificial Segmentation of Mammalian Ovum and Its Significance for Extra-Uterine Gravidity. J. Novak and K. Eisinger.—p. 2385.  
 Traumatic Sarcoma. K. Philippsberg.—p. 2385.  
 Intermittent Claudication of Aorta and Its Branches. Mendel.—p. 2386.  
 Otogenous and Rhinogenous Purulent Meningitis. Fleischmann.—p. 2386.  
 The German Museum of Hygiene. M. Vogel.—p. 2389.

**Pathology of Eclampsia.**—Fahr recapitulates the pathologic findings in eclampsia and emphasizes especially the changes in the glomeruli described by himself, independently of Löhlein, two years ago. Fahr admits that the changes in kidneys and liver are probably in part due to the spasm of arteries, but believes that there is also a toxic factor and a factor leading to formation of thrombi.

**Clinical Aspect of Eclampsia.**—Heynemann reviews the theories and emphasizes the spastic changes which can be directly observed in the capillaries of the skin. The non-



protein nitrogen in the blood is usually but little increased. Fifty per cent. of the cases with signs of destruction of red cells (hematin, bilirubin) die. An increased diuresis has a good prognostic significance, but one can be never sure in eclampsia. A forced delivery can hurt the patient. If the attacks occur during delivery, it is necessary to finish it quickly. Forceps may be required. In the first delivery a cervical cesarean section may be necessary. Lumbar puncture sometimes influences the cerebral symptoms favorably, but entails death in other cases. A venipuncture (500 c.c.) is beneficial, and it should be repeated if necessary. Intravenous injections may harm the patient. Eclampsia is extremely rare in cases where a nephritis of pregnancy was correctly treated.

**Diagnosis of Disease of Organs from Their Ferments in the Blood Serum.**—Rona, Petow and Schreiber utilized Rona and Pavlovic's experience that the lipase which is extracted from the liver, is not changed by quinin, which destroys the lipase of normal serum. They were able to demonstrate by this means that, in cases of mechanical icterus, a quinin-resistant lipase appears in the serum in addition to the normal ferment. A similar ferment originating perhaps in the kidneys may circulate in the blood in cases of kidney disease. Since Rona and Pavlovic found that the lipase from the pancreas is resistant to atoxyl, one can hope to use this method for disease of the pancreas.

**Pneumococci in the Surroundings of Healthy and Sick Persons.**—Seitz examined the pneumococci and streptococci from the sputum in pneumonia cases and from persons who were in contact with them. Considering the serologic types of pneumococcus, he found distinct relations. He admits that it would be useless to make ordinances against these carriers, but he believes very much in the good results of education of the public on the dangers of transmission.

**Hypoglycemia After Rectal Infusions of Sugar.**—Rubino and Varela made very slow rectal infusions of small quantities of sugar. The threshold for sugar excretion was lowered. If the infusion was very slow, the sugar level in the blood fell in most cases. If similar symptoms occur after giving glucose by mouth, it is considered by them to be a sign of insufficiency of the liver. Rectal and intravenous injections of sugar, as a rule, cause a decrease in leukocytes and changes in blood concentration which do not parallel the changes in the sugar level of the blood.

**Compensatory Phenomena After Loss of Spleen.**—Seifert found that the proliferating reticulo-endothelial system of the liver of splenectomized mice is capable of accumulating injected corpuscular elements, although, quantitatively, the function is not so extensive as in Kupffer's cells. The same cell may contain at the same time different substances, and it is impossible to block these cells against subsequent injections.

**Innervation and Influence of Drugs on Urethral Glands.**—Perutz injected different substances into the urethra, and examined their action on Cowper's and Littre's glands. These glands behave like most others: Pilocarpin and epinephrin stimulate secretion; atropin inhibits the action of pilocarpin, but not of epinephrin. Perutz found it advantageous to inject pilocarpin in the urethra; 20 c.c. of a solution of 0.05 gm. in 200 c.c. of water, kept for from ten to fifteen minutes in the urethra, was usually sufficient. It is rarely necessary to use the double concentration. He finds that it is a good method to prove the presence of gonococci in chronic cases.

**Blood Changes in Cancer.**—Dietrich found that serum from cancer patients inhibits the hemolysis by sodium taurocholate less than does normal serum.

**Alimentary Hyperglycemia and Glycosuria.**—Traugott found that diabetes can be excluded if 100 gm. of sugar, taken one hour after ingestion of 20 gm., does not produce hyperglycemia. If it does, this is not a certain proof of the existence of diabetes, because neurotic persons may behave in similar manner.

**Quinin and Hemoclasia.**—Grossmann finds that intravenous injection of 0.2 gm. of hydrochlorid of quinin causes leukopenia in all cases with liver affections. The differential leukocyte count does not change, and he attributes the phenomenon to a retention of leukocytes in the visceral capillaries.

## Medizinische Klinik, Berlin

Nov. 26, 1922, 18, No. 48

- \*Vegetative System and Individuality. F. Kraus.—p. 1515.
- \*Constitutional Paradoxical Pulse. H. Curschmann.—p. 1521.
- Cases of Dystonia and Spasm of Muscles of Neck. E. Maliwa.—p. 1522.
- \*Typhoid Abscess of the Spleen. K. Paschkis.—p. 1523.
- \*Nasal Breathing and Treatment of the Lungs. G. Wotzilka.—p. 1525.
- \*Syphilis of Suprarenals. W. H. Crohn.—p. 1526.
- Local Mercurial Treatment of Varices. J. Rosner and E. Wohlstein.—p. 1527.
- \*Regulation of Placental Circulation. W. Schmitt.—p. 1528.
- Cysticercus of the Brain as a War Injury. W. Jacobi.—p. 1529.
- Diseases of Penis. E. Portner.—p. 1531.
- Survey of Syphilis. F. Pinkus.—p. 1533.

**Vegetative System and Individuality.**—Kraus understands by the vegetative system the surfaces and structures of protoplasma which belong to the colloid electrolytes and the crystalloid electrolytes, buffers, hormones—the "lubricants of the system"—catalyzers, and the regulatory influence of the vegetative nervous system on them. This system is the uniting link between organs and personality. The paper is full of original views, and a discussion of it by Kraus' pupils is given on page 1539 of the same number of the *Medizinische Klinik*.

**Constitutional Paradoxical Pulse.**—Curschmann agrees with Schmidt that it is a mistake to attribute the paradoxical pulse to an adhesive pericarditis. He believes that it may be due to a compression of the subclavian artery by the presence of a scalenus minimus muscle in persons with a low blood pressure.

**Typhoid Abscess of the Spleen.**—Paschkis reports a case of subphrenic abscess originating in the spleen in a patient who had suffered from polyarthritides. Typhoid bacilli were found in the abscess. He discusses the possibilities of typhoid arthritis and the pyogenic action of typhoid bacilli.

**Nose Breathing and Treatment of the Lungs.**—Wotzilka believes that obstruction of the nose predisposes to tuberculosis, because the breathing becomes shallower and the lymphatic current therefore slower. One part of prophylactic treatment of tuberculosis should consist in making the upper respiratory passages free.

**Syphilis of Suprarenals.**—Crohn's patient presented all the signs of Addison's disease in a 12 year old boy with positive Wassermann reaction. He was cured by specific treatment.

**Regulation of the Circulation in the Placenta.**—Since no nerves have been found as yet in the vessels of the placenta, it seems evident that their action is regulated directly. Schmitt finds that they dilate when oxygen is lacking and contract if its supply is good.

## Münchener medizinische Wochenschrift, Munich

Nov. 10, 1922, 69, No. 45

- Estimation of Disability Due to Sequels of Epidemic Encephalitis. W. Villinger.—p. 1561.
- \*The Hair of Cancer Patients. H. Schridde.—p. 1565.
- \*Prevention of Serum Sickness. R. Kraus.—p. 1566.
- Köhler's Disease. Sonntag.—p. 1567.
- \*Treatment of Polycythemia Rubra. K. Gutzeit.—p. 1569.
- \*Roentgenotherapy in Tuberculosis of the Larynx. L. Rickmann.—p. 1572.
- \*Treatment of Epiphora. Hensen and Lorey.—p. 1573.
- \*Metal Guide in Duodenal Tube. S. Bondi and F. Eisler.—p. 1573.
- \*Infiltrates Due to Arsphenamin. G. Klein.—p. 1574.
- Acute Arsphenamin Injuries from the Standpoint of the General Practitioner. G. Fant and Kreibich.—p. 1574.
- Further Evidence that Syphilis in the First Stage Can be Completely Cured by a Single Serial Treatment with Neo-Arsphenamin. W. Morath.—p. 1575.
- Secondary Suppurations. G. Ledderhose.—p. 1576.

**Gray Hair and Cancer Patients.**—Schridde does not confirm the old belief that gray hair is rare in persons predisposed to cancer, but found other interesting changes, which he considers so typical, that he was able to make the diagnosis before starting a postmortem. He finds that among the dark, gray or blond hair of the parts exposed to light (scalp, beard, brows, and especially the temporal region) there are always in such cases purely black hairs, void of luster and more rigid than normal hair. On white paper, they look like lines drawn with India ink. They do not occur in red-haired people. Schridde finds that an abnormal pigmentation of the skin was present in all cases of cancer. These changes do not seem to be present in sarcomas.



**Prevention of Serum Sickness by Means of Heterologous Antigens.**—Antitoxic serum prepared from cattle does not cause the immediate serum sickness, like horse serum, even on reinjection, except in cases where horse serum had been used before. Yet horse serum may be used for the second injection after using beef serum for the first. The disadvantage lies in the lower antitoxic titer of beef serums. Kraus proposes the exclusive use of beef serums for prevention of diphtheria and tetanus, especially in the application of toxin-antitoxin mixtures. Wherever one uses horse serum in curative treatment, one should inject normal beef serum first, to prevent serum sickness.

**Treatment of Polycythemia Rubra.**—Gutzeit saw transitory remissions after the use of phenylhydrazin and benzene. Venesections are good. Quinin and arsenic are of no use. Irradiation of bones by large doses of roentgen rays gives the best results. The treatment has to be controlled by the changes in the leukocytes and the general state of the patient.

**Roentgenotherapy in Tuberculosis of Larynx.**—Rickmann reports excellent results in twelve cases of beginning laryngeal tuberculosis. In other cases he combines it with other methods. Four cases were unfavorably influenced. The dose has to be small (irritating, not destroying).

**Roentgen Irradiation of Lacrimal Glands.**—Hensen and Lorey report favorably on the results of this with improved technic in epiphora.

**Sounding of the Duodenum.**—Bondi and Eisler use the duodenal tube with a mandrin, which makes it half rigid. One can introduce it under roentgen control in a few seconds into the duodenum.

**Injections of Glucose in Infiltrates.**—Klein injects in cases of beginning infiltrates after arsphenamin once or twice 20 c.c. of a 50 per cent. solution of glucose intravenously. If possible, he selects the vein which was used for the arsphenamin. It helps in many, though not all cases.

### Wiener klinische Wochenschrift, Vienna

Nov. 16, 1922, 35, No. 46

- Left-Handed Children. R. Neurath.—p. 895.  
 \*Wildbolz' Reaction in Tuberculous Meningitis. K. Kundratitz and F. Schenk.—p. 900.  
 \*Sedimentation of Blood in Arthritis. A. Simó.—p. 901.  
 \*Treatment of Abortion. Wagner.—p. 902.  
 \*Treatment of Gonorrheal Epididymitis. E. Radnai.—p. 902.  
 Comment on Starling's Article in No. 42. W. Pewny.—p. 903.  
 Practical Hygiene of Breeding. S. Weiss.—p. 903.

**Wildbolz's Reaction in Tuberculous Meningitis.**—Kundratitz and Schenk tested the cerebrospinal fluid in fifteen cases of tuberculous meningitis with Wildbolz's urine concentration method. The results were practically negative, although they employed great care in concentrating the fluid, and injected it not only in the patient, but also in other individuals.

**Sedimentation of Blood in Arthritis.**—Simó examined the speed of sedimentation of erythrocytes in fifty different cases of arthritis. The speed is increased in tuberculous and rheumatic arthritis, and seems to depend, to a certain extent, on the size and activity of the inflammation. Deforming arthritis does not increase much the speed of sedimentation.

**Treatment of Abortion.**—Wagner favors active treatment, but it has to be done delicately.

**Treatment of Gonorrheal Epididymitis.**—Radnai reports two cases which were very favorably influenced by a few intravenous injections of 10 c.c. of a 10 per cent. solution of calcium chlorid.

Nov. 23, 1922, 35, No. 47

- \*Acute Hemorrhage from Stomach and Duodenum. H. Finsterer.—p. 913.  
 \*Motor Function of Stomach with Duodenal Ulcer. T. Bárony.—p. 916.  
 Puerperal Occlusion of the Mesenteric Vessels. Bucura.—p. 918.  
 Roentgen Diagnosis of Benign Tumors of Stomach. Z. Kalisch.—p. 921.  
 French Views on Icterus. F. Stöhr.—p. 922.

**Surgical Treatment of Acute Hemorrhages from Stomach and Duodenum.**—Finsterer found in Vienna among 1,262 necropsies presenting ulcer of stomach or duodenum, 301 perforations and 190 deaths due to hemorrhage from erosion of an artery. He does not believe that the mortality in operative cases is in reality much higher than in cases treated internally. If one would count only the severest

hemorrhages treated internally, and compare them with Finsterer's unusually favorable results (19.6 per cent. mortality in fifty-one operative cases, of which only a part was operated on early), one could consider, according to the author, his results as 5 per cent. superior.

**Motility of Stomach Induced from Duodenum.**—Bárony finds that it is superfluous to suppose some influence of the pneumogastric nerve in the pathogenesis of increased tonus, peristalsis and local spasms of the stomach in cases of duodenal ulcer. These symptoms can be explained sufficiently by Bayliss and Starling's law: Increased contractions occur only in the segment of the irritation and orally from it. Aborally, there is a loss of tonus. This second part of Bayliss and Starling's law is confirmed in these cases by the atony of the duodenum or its bulb, distal from the ulcer.

Nov. 30, 1922, 35, No. 48

- \*Roentgen Ray Treatment of Peritoneal and Genital Tuberculosis in Women. W. Weibel.—p. 933.  
 Changing of the Depressive Action of Saccharin on the Heart into an Irritating Action. M. Heitler.—p. 935.  
 \*Chronic Gonorrhea in Women. Matzenauer and H. Weitgasser.—p. 937.  
 \*Indications for Intensive Roentgen Ray Treatment. L. Freund.—p. 939.

**Roentgen-Ray Treatment of Peritoneal and Genital Tuberculosis in Women.**—Weibel recommends roentgen ray only in the adhesive form of tuberculous peritonitis. He saw better results in genital tuberculosis.

**Cupping Glass in Treatment of Chronic Gonorrhea.**—Matzenauer and Weitgasser report very favorably on the results of the repeated application of a vacuum glass to the uterine cervix for fifteen or thirty minutes.

**Indications for Intensive Roentgen-Ray Treatment.**—Freund shows that the warnings given by Holzkecht are practically identical with Freund's views of twenty-five years ago.

### Zeitschrift für Krebsforschung, Berlin

Nov. 25, 1922, 19, No. 4

- \*The Cure of Cancer. O. Strauss.—p. 185.  
 Spontaneous Tumors in Wild Rats. M. Beatti.—p. 207.  
 Tumors of Human Nervous System. M. Beatti.—p. 209.  
 \*Relations Between Cancer and Nerve Substance. C. S. Engel.—p. 215.  
 External Pendulous Fibromyoma of the Stomach. Kratzseisen.—p. 227.  
 Plastic Mastitis with Cancer of Stomach. H. Stahr.—p. 231.  
 \*Statistics of Malignant Tumors. H. Petzold.—p. 245.  
 \*Catalase in Blood in Cancer. Zerner.—p. 263.

**The Cure of Cancer.**—Strauss discusses the problem of curing cancer. We are as yet not able to do much in the way of prevention. Not only a predisposition but also exogenous factors are necessary for the development of cancer. Cancer is not merely a local disease, and, therefore, good results will be obtained only when it is possible to influence the whole organism after local removal of the growth. The roentgen rays act only on the most disperse phase of the tumors. Strauss hopes that a combination of roentgen rays with chemotherapy (iodin, arsenic, silver) after the operation may improve the results.

**Relation Between Development of Cancer and Nerve Tissue.**—Engel reviews some interesting findings on the importance of nerves for regeneration of the organs of lower animals. Several authors have pointed out that a connection may exist between the nervous system and the development of cancer. Engel emphasizes the fact that the chemical irritants inducing cancer have an affinity for lipoids, and therefore for nerve substance.

**Statistics of Malignant Tumors.**—Petzold gives a good statistical review of 159 malignant tumors and their metastases found among 1,648 necropsies made in the years 1914-1918 in a hospital (Kiel).

**Catalase in Blood in Cancer.**—Zerner finds that the lowering of the amount of catalase in the blood in carcinoma is valuable, especially in differential diagnosis from pernicious anemia.

### Zentralblatt für Chirurgie, Leipzig

Nov. 18, 1922, 49, No. 46

- Differential Diagnosis of Gastric Ulcer and Cancer. Payr.—p. 1706.  
 Remarks on "Traumatic Hydronephrosis." A. Troell.—p. 1712.  
 Pathologic Outward Rotation of Hip-Joint. Loeffler.—p. 1715.  
 Warning Colors for Poisonous Alkaloids. W. Köhler.—p. 1717.  
 As to the Priority of Semmelweis or Lister. W. v. Brunn.—p. 1719.



Nov. 25, 1922, 49, No. 47

- \*Spondylopathia Leukaemica. E. Melchior.—p. 1737.  
 Mechanics of Introduction of Gastroscope into Esophagus. Sternberg.—p. 1741.  
 A Peculiar Case of Contrecoup. S. Lindqvist.—p. 1744.  
 Ludloff's Operation for Hallux Valgus and Pes Cavus with Hammer Toe. J. Fraenkel.—p. 1745.  
 Reply to "Hypospadias Operation." A. Fischer.—p. 1748.

**Acute Leukemia Simulating Tuberculous Caries of Spine.**—Melchior reports in detail a case to show that, in the differential diagnosis of tuberculous spondylitis, acute lymphatic leukemia must be considered. A boy, aged 11, was referred to the hospital with a tentative diagnosis of tuberculosis of the spine. The lumbar spine was contracted and in the lower portion there was a marked localized sensitiveness to pressure and to tapping, together with severe pains. A roentgenogram showed spina bifida at the fifth lumbar vertebra. In spite of the absence of deformity and of pronounced changes in the vertebrae, and because evidence of a different etiology was absent, the diagnosis of tuberculosis of the spine was made and, soon after, osteoplastic spondyloplasty by the Albee method was carried out. The course was at first undisturbed; but fever set in from infection of the incision in the back, and a large amount of seropurulent, exceedingly hemorrhagic fluid was evacuated, from which a hemolytic staphylococcus was cultivated. The implant was eventually expelled. The wound showed no tendency to heal. The patient gradually declined and developed epistaxis, bleeding of the gums, petechiae and pains in the spleen region. This was thought to be due to sepsis, until finally a blood examination showed acute lymphatic leukemia (5,600 white blood cells, 40 per cent. of which were lymphocytes, 3 per cent. neutrophils, 4 per cent. eosinophils, 50 per cent. lymphoblasts, and 3 per cent. myelocytes). The hemorrhagic diathesis (hematemesis) developed further; extreme thrombopenia (up to 2,000) and anemia set in, and the leukocyte count rose to more than 27,000. Death finally ensued after a total five months' course. No trace of tuberculosis was found at necropsy, and the vertebrae were externally intact. The lymphatic infiltration of the marrow had entailed softening of the spongiosa. In a similar case of acute leukemia simulating Pott's disease, published in 1914, the boy aged 5 had had a plaster jacket applied on account of the pains and localized stiffness of the spine. It relieved the pains but the acute leukemia continued its fatal course. The two cases teach the necessity for examining the blood even in surgical affections.

### Zentralblatt für Gynäkologie, Leipzig

Nov. 25, 1922, 46, No. 47

- Icterus Neonatorum. G. Linzenmeier.—p. 1873.  
 \*The Hemoclastic Crisis in Pregnancy. G. Kaboth.—p. 1883.  
 \*Treatment of Infectious Processes in Abdomen. Pribram.—p. 1889.  
 Development of New-Born in Postwar Period. G. Pribram-Rau.—p. 1894.  
 Rupture of Symphysis Intra Partum. R. Hornung.—p. 1898.  
 "Effect of Camphor on the Nursing Breast." Temesváry.—p. 1901.

**Testing of Liver Functioning in Pregnancy by the Hemoclastic Crisis.**—Kaboth tested liver functioning by the Widal method in thirty-two healthy pregnant and in eighteen healthy nonpregnant women. The positive Widal reaction (sudden leukopenia) occurred in 56.2 per cent. of the pregnant and in 16.7 per cent. of the nonpregnant women. In the majority of the cases the figure found after the first twenty minutes showed, in comparison with later values, the greatest difference from the original leukocyte figure. This value was therefore considered chiefly. The original value was generally reached again after two hours. In more than half of the cases, after a few days, a second and, in some cases, a third and fourth examination was made. In 26 per cent. of the cases the results of the later tests were materially different from those of the first. This fact lessens considerably the clinical value of the method.

**Treatment of Infectious Processes in the Abdominal Cavity.**—Pribram, after thirteen years' experience in surgery and World War service as chief of a surgical unit, holds that the advantages of primary closure of the peritoneal cavity without drainage are exceedingly great. Quite aside from the shortening of the patient's confinement in the hospital and the resulting reduction of postoperative thromboses, the

danger of extensive adhesions, which after drainage (especially with strips of gauze) are unavoidable, is very much lessened, though some adhesions may still occur. If we consider how many patients suffer during the balance of their lives from great discomfort, and submit to repeated operations, usually without securing permanent relief, we must realize the importance of restoring immediately the physiologic relationships of the peritoneal cavity.

### Japan Medical World, Tokyo

November, 1922, 2, No. 11

- \*Artificial Production of Tumors in Viscera. Y. Kazama.—p. 309.  
 \*Phagocytosis of Pus Cells. R. Umemura.—p. 312.  
 Relation of Immunity with Bacteriolysinfast Tubercular Bacilli. S. Toyoda and E. Yo.—p. 316.  
 Experimental Infections on Human Body with Ascarides. S. Koino.—p. 317.

**Artificial Production of Tumors.**—As the result of study of intestinal carcinoma in schistosomiasis japonica, Kazama came to a firm belief that that stimulus can be one of the causes of cancer formation. Based on this belief he has been trying since 1919 to produce tumor formation on the mucous surface of viscera by action of various stimuli. He has succeeded in producing adenomatous cancer in the gall-bladder of guinea-pigs. When the surface of the mucous membrane of the stomach, urinary bladder or gallbladder of the rabbit or guinea-pig is mechanically or chemically irritated, or both combined, for a certain period of time, there form polypous, papillous or adenomatous growths or even adenoma or adenocarcinoma at the places where the stimulation was applied the most. Metastases form from the malignant new growth.

**Phagocytosis of Pus Cells.**—Umemura asserts that the pus cell is living and has phagocytic action. It has movement, and reduces methyl blue. The phagocytic action of pus cells decreases with the time. At 37 C. it disappears or is reduced to a half in six hours. The phagocytic action is reduced to one half at 45 C. or at freezing point; at 15 C. it is only one half or one fifth. The phagocytic rate of pus cells is between 0.1 and 15 per cent. The phagocytic action of pus cells is accentuated in normal serum. Activated pus fluid accentuates the phagocytic action of pus cells, while inactivated pus fluid loses the action. When normal serum is added as complement, the action is recovered. The dilution of pus fluid reduces the phagocytic action.

### Hospitalstidende, Copenhagen

Nov. 15, 1922, 65, No. 46

- \*Scleroma in the Rhinopharynx. O. Boserup and A. Nyfeldt.—p. 769.

**Rhinopharyngeal Scleroma.**—Pains in the left ear and deafness were the first symptoms in the young woman. Then a catarrhal nasal affection developed and the nose became obstructed, and *Bacterium rhinoscleromatosis* was cultivated from the nasal secretions. Instead of the traditional excision or cauterization of the lesion, autogenous vaccines and roentgen-ray treatment are being used now. Brunner and Kriebel have reported good results from vaccine therapy, but Metscherski saw no benefit from it in a case of eight years' standing. Rydigier has obtained good results with roentgen exposures but the course has to be from two to six months long. He has patients free from recurrence for five years to date.

Nov. 22, 1922, 65, No. 47

- \*Carcinoma in Small Intestine. P. Freudenthal.—p. 785.

**Carcinoma in Small Intestine.**—In the case reported by Freudenthal the woman of 40 developed suddenly pains in the abdomen and vomiting. The pains began half an hour after eating, with a sensation of oppression in the cardia, increasing to severe pains. They began in the epigastrium, a little to the right of the median line, and spread to the umbilicus and then over the whole abdomen, persisting for up to four hours unless relieved by morphin. Vomiting also gave some relief. There never was any visible blood in vomit or stools. Between the attacks there was no pain or dyspepsia. At the fourth month an operation on the diagnosis of stenosis disclosed the cancer.



**Norsk Magazin for Lægevidenskaben, Christiania**November, 1922, **83**, No. 11

- \*Tuberculosis of Bronchial Glands in Children. A. Brinchmann.—p. 857.
- \*Congenital Fracture of the Leg. P. Bull.—p. 872.
- Principles for Factory Inspection Work. O. Lorange.—p. 878.
- \*Chronic Stenosis in Lower Duodenum. S. Widerøe.—p. 894.

**Diagnosis of Tuberculous Bronchial Glands in Children.**—Brinchmann states that in the 180 children he examined, the seven principal physical tests for tuberculosis were not all found positive in any one instance. In some of the children an acute or subacute tuberculous process is probable, but none of these seven tests elicited a positive reaction. He adds that the passing years are increasing skepticism rather than confidence in the instructiveness of roentgen-ray findings in children. Only four points are certain to date; namely, that normal glands and freshly enlarged glands cast no shadow, but cheesy glands and opaque and calcified glands cast a distinct shadow. The shadow of tracheobronchial glands usually falls inside the shadow of vertebrae, and thus escapes detection, and the left hilus glands are masked by the heart shadow. The right hilus glands may be masked by vessels and bronchi absorbing the rays, and dappling the roentgenogram even in normal conditions. The d'Espine sign was positive in 65 per cent. of the 103 children supposed to have tuberculous bronchial glands, and interscapular vesicular breathing was found in 42 per cent. The de la Camp's percussion of the spine was positive in 18 per cent., but the Smith sign—a humming sound heard at the manubrium of the sternum when the head is bent backward—was present in only 13 per cent., and interscapular dullness in only 15 per cent. In 23 of the children both the d'Espine and interscapular vesicular breathing were manifest, and in 11 in this group the roentgen findings were confirmatory. In 8 cases the d'Espine, de la Camp, sternum dullness and bronchial vesicular breathing were associated. Petruschky's spinalgia was found in only 2 of 300 children examined; in one case with and in one without enlarged bronchial glands. In the 41 children with positive roentgen findings indicating bronchial gland disease, 10 had no other signs of it; 28 had a positive d'Espine; 20 had interscapular vesicular breathing, and 17 had both. On the other hand, in 50 negative roentgen cases, in 28 there were one or more signs pointing unmistakably to hilus tuberculosis. His positive findings in all this material are meager, but they show that, taken together, the roentgen and physical signs may transform suspicion into certainty although none alone is conclusive.

**Congenital Fracture of the Leg.**—In one of Bull's two cases a congenital fibrous osteitis was evidently responsible for the fracture, as also in Frangenheim's case. Characteristic for these congenital fractures is the difficulty in getting the fracture to heal; some local changes must evidently be responsible for this as other fractures in these children seem to heal normally. In one of his cases he finally succeeded in securing consolidation at the age of 14, after several ineffectual operations in early childhood. The bone had probably outgrown the fibrous osteitis in the course of the years. This experience warns not to be hasty in amputating an ununited fracture in a child but give Nature plenty of chance to heal the bone disease first.

**Chronic Stenosis of Lower Duodenum.**—Widerøe relates that all his five patients in this group were women from 21 to 33 years old. Four had had symptoms for from four to ten years, the other for only a few months. All had been treated on the assumption of a gastric ulcer. The symptoms had been so sudden and severe in one case that perforation had been assumed. In all there had been paroxysms of pain and vomiting, but in some there were no symptoms in the intervals; in the others there was more or less continuous pain. The patients felt best before meals, and disturbances in time followed every meal. There were no characteristic nocturnal attacks, and the character of the food did not seem to have any influence. The patients felt relieved by vomiting, and there was no hematemesis. A course of treatment for ulcer had very little if any effect. A constant tendency to nausea with eructations seems characteristic. The pain was referred to the epigastrium to the right or left of the median line. The pain was of a boring nature, not like colic. The duodenum was not dilated enough to be palpated in these

cases. He thinks this stenosis in the lower duodenum occurs more often than supposed, and fails to be correctly diagnosed. Duodenojejunostomy cured all the disturbances in two of his cases. In another case the operation is quite recent, and in the two other cases the intervention was restricted to detaching adhesions and fastening the colon in place. The symptoms were only temporarily relieved, and the condition is now as bad as ever. The milder cases may yield to medical measures, laxatives, reclining after eating, raising the foot of the bed a little at night, abdominal massage, fats, etc. The passage into the duodenum may become more permeable under this treatment and the symptoms subside. If not, the duodenum should be sutured to the jejunum.

**Ugeskrift for Læger, Copenhagen**Nov. 2, 1922, **84**, No. 44

- \*Traumatic Neuroses. A. Wimmer.—p. 1475.
- The Fat Soluble A Substance and Rachitis. C. E. Bloch.—p. 1486.

**Traumatic Neuroses.**—Wimmer explains that the traumatic neurosis is the physical and mental manifestation of an emotional shock. The emotional shock may have been so severe as to induce temporary amnesia, and thus the causal shock may not be remembered. He explains that this *enfant terrible* of accident insurance requires the same impartial analysis of its symptoms and causes as the material consequences of a trauma, and proper treatment as a pathologic condition.

Nov. 9, 1922, **84**, No. 45

- \*Intravenous Injections of Glucose. S. Jørgensen and T. Plum.—p. 1525.
- Bismuth Treatment of Syphilis. H. Müller.—p. 1547.

**Intravenous Injections of Glucose.**—The tests here reported have apparently established that intravenous injection of 20 gm. of glucose is entirely harmless. The glucose was injected, after a fast, dissolved in 50 c.c. of water. The sugar content of the blood was recorded at the end of three minutes, and again every two or three minutes for fifteen minutes, and then at longer intervals up to three hours. In seventeen nondiabetic individuals, a typical chart reveals a rise of the sugar content from 0.080 to 0.310 at the end of three minutes, a steep drop from this to 0.160 at the end of ten minutes, and to 0.066 at the end of sixty minutes. The sugar content had returned to the original level of 0.08 by the end of the second hour. In the fifteen diabetics, the chart is quite different. The original peak is equally steep, but not above 0.280, and the decline is more gradual. Even by the end of the third hour the sugar level still averages 0.130. The advantage of this method is that only 20 gm. of glucose are required, and the whole test is complete in two hours. If the original sugar level has not been reached by this time, the carbohydrate metabolism is scarcely normal. The findings show among other things that benign glycosuria is most certainly not diabetic. Also that the condition of the kidneys does not seem to have much bearing on the regulation of the sugar in the blood.

Nov. 16, 1922, **84**, No. 46

- Tuberculous Mesenteric Glands in Children. H. R. Krogsgaard.—p. 1579.

Nov. 23, 1922, **84**, No. 47

- \*Wassermann Reaction Late in Syphilis. T. E. H. Thaysen.—p. 1617.
- \*Pernicious Anemia After Roentgen Treatment. I. Hansen.—p. 1643.

Nov. 30, 1922, **84**, No. 48

- Recent Literature on Phenobarbital. J. Riising.—p. 1671.
- To Relieve Pain of Anal Fissure. E. Sylvest.—p. 1678.

**Wassermann Reaction in Late Syphilis.**—Thaysen analyzes the Wassermann findings in 111 cases of tabes, fifty-four men and fifty-seven women, in relation to prognosis. A positive reaction does not seem to have any bearing on the prognosis in the pronounced cases. A negative reaction in the abortive cases seems to indicate a nonprogressive course later. In the total 111 cases, a positive response to the Wassermann test was obtained only in about a third of the cases.

**Pernicious Anemia in Exophthalmic Goiter.**—The pernicious anemia developed acutely, directly after a course of roentgen treatment. The causal connection seemed unquestionable although preexisting achylia may have afforded a predisposition. The patient was a woman, aged 30, who had been under treatment for hyperthyroidism at intervals during several years.



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## THE SIGNIFICANCE OF LYMPHATIC INVOLVEMENT IN INFECTIONS

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A clinician of great experience once made the statement that if he had his choice between an infection disseminated through the blood stream and one spread by the way of the lymphatics, he would choose the former, giving as a reason that when a noxious agent enters the blood, the whole force of the organism acts on it quickly, with the reasonable chance that it will be carried to some portion of the body with sufficient resistance to develop immunity; whereas, if it enters the lymphatics and is not overcome in the lymph nodes, the toxic agent may be permitted to enter the blood stream more or less continually, and will perhaps eventually lead to an incurable infection. This opinion was so greatly at variance with that of the medical profession at large that I speculated on the number and importance of the facts to sustain it. In the light of various experiences, I studied the relation of the lymphatics to the ultimate prognosis in tuberculosis, syphilis and cancer, all introduced from without through the protective mechanism of the body, and two of which, tuberculosis and syphilis, have identifiable foreign causative agents. We must ever remember Cohnheim's original observation that the source of a given infection can be detected if the sentinel lymphatic gland first showing enlargement can be located.

Besredka has confirmed the experimental work of Noetzel on anthrax. Noetzel demonstrated that rabbits and guinea-pigs tolerate large numbers of anthrax bacilli when injected directly into the blood or the peritoneal cavity without contaminating the cutaneous tissues, amounts which would cause a fatal anthrax infection if injected into the skin tissues, which are rich in lymphatics. This shows that there is a definite relation between the site of the infecting organisms and their toxic effect, and discloses an inviting field for research.

Tuberculosis, syphilis and cancer are, directly or indirectly, the great destroyers of human life. The bacillus of tuberculosis has the well-known bacterial resistance to medications, to which it is more resistant than the human organism itself. If a cure is effected, it is through self-engendered immunizing substances. Since the spirochete, like the plasmodium of malaria, the hookworm, and other larger and better known protozoa, is susceptible of being destroyed by specific medication, it would appear fair to group it with the protozoa, in contrast with bacteria, which Vaughan believes lie between the vegetable and animal worlds.

We do not know the cause of cancer, and doubt that it is the result of a foreign intruder; but the cancer cell is, to all intents and purposes, as specific an enemy to the human organism as either the bacillus of tuberculosis or the spirochete.

Many of the ablest exponents in the treatment of tuberculosis believe that if the primary tuberculous focus, where the bacilli enter the protective mechanism of the body, become acclimatized and first involve the lymphatic system, can be removed, the secondary processes will thereby be rendered much more amenable to treatment. These investigators evidently believe that the strain of bacilli of tuberculosis becomes more or less specific to the individual, which Rosenow has shown to occur with many types of bacteria. Surgical experience in the removal of localized tuberculous deposits gives some stability to this opinion.

The facts in relation to spirochetal involvement of the lymphatics are less easy to ascertain, but evidence shows that the lymph nodes in a high percentage of cases fail permanently to check the progress of the disease. There is much evidence to the effect that the glands may act as secondary foci in the distribution of spirochetes, while the defense reaction developed by their presence in the lymph nodes is to a considerable extent protective against the action of remedial agents. We know that in the spleen, which is a lymphoid organ, spirochetes are protected against remedial agents under certain conditions, that an arrest in progressive syphilis and remarkable improvement in the coincident anemia follow the removal of the spleen if greatly enlarged, and that in such cases spirochetes are to be found in the spleen.

The central nervous system has no lymphatics. The blood vessels do not come into direct contact with the nerve cells, which are insulated by the neuroglia. While from 80 to 85 per cent. of patients with neurosyphilis will be remarkably improved by treatment, permanent arrest of the disease occurs possibly in not more than 50 per cent. Contrast this percentage with the 90 per cent. of permanent arrest of syphilis of the soft parts in which the blood comes in contact with the involved tissues, carrying with it remedial agents destructive to the spirochete. Earlier diagnosis and treatment, because of visibility of the lesions, undoubtedly play an important part in producing the results.

Rosenow's observations and experiments showing the specificity of organisms in relation to their secondary effects apply in syphilis. Fifteen varieties of spirochetes have been shown experimentally, each of which appears to have individual characteristics, which can be shown in the living animal as well as in the test tube.

It is remarkable that in cancer the secondary process is always a transplant from the original, and reproduces



in its new location the cellular morphology of its origin. From various investigations, particularly those of Sistrunk and Bloodgood, made to determine the ultimate results following operation for carcinoma, it can be said that the curability of cancer, following operation for growths susceptible of local removal, depends more on the glandular involvement than on any one factor. It would be conservative to say that two thirds of all cases of removable cancers in which there is no glandular involvement will remain cured, and death will result in only one third because of subsequent local extension or blood transmission. One may even say that the prospects of cure of cancer, other things being equal, depend more on the lymphatic richness of the part affected than on any other one factor. In from 80 to 85 per cent. of cases of cancer of the body of the uterus, which is poor in lymphatics, hysterectomy results in five-year cures, but in cancer of the cervix, with its rich lymphatic supply, in only 25 per cent. Because of the sparseness of the lymphatics, 50 per cent. of five-year cures follow operations in cases of cancer of the large intestine. Incurability in carcinoma of the colon is more often due to secondaries in the liver from emboli broken off from cancer-infected venous thrombi than from carcinoma of the glands. In carcinoma of the stomach, with its rich supply of lymphatics, there is 25 per cent. curability following radical operation.

The lymphatics are a system of absorbents. Twenty years ago, Charles H. Mayo emphasized the fact that the lymphatics reached the height of their activity in adolescence, and, like the tonsils, the spleen, and other lymphoid structures, slowly retrogress, thus explaining the relative curability, decade by decade, of carcinoma in the aged, as contrasted with the rapid growth of malignant disease in the young.

The toxic agents are commonly distributed in three ways; through the blood, which is exceedingly rapid; through the lymphatics, which is slower, and by local extension from a pathologic lesion.

The blood is the agent which carries life-sustaining substances to the tissues. The walls of the capillaries are normally pervious to oxygen and crystalloid substances soluble in water, such as glucose sugar and the amino-acids, which are diffused through the arterial part of the capillary walls, and waste products of combustion in the tissues are diffused back into the venous part of the capillaries. Diffusion depends largely on pressure. The arterial part of the capillary has greater pressure than the tissues, and the tissues greater pressure than the venous part. The point should be emphasized that normally the blood capillaries pick up only molecular substances or extremely fine subdivisions, soluble in water, below the colloid dimensions. The blood capillaries, except in the gastro-intestinal tract and liver (portal system), are not normally pervious to colloidal substances, but these larger particles are taken up by the endothelial cells which act as phagocytes, and by ameboid movements carry them into the lymphatics. It is true that in pathologic conditions, as shown by Krogh in his studies of the toxic effects of histamin on the blood capillaries, such extreme dilatation may render the capillary wall pervious to larger substances and permit the escape of colloids of the blood plasma into the tissues, with stasis and agglutination of the red cells, a condition of shock in which the animal will, so to speak, bleed to death in its own tissues. Generally, it is the function of the lymphatics as absorbents to pick up material substances insoluble

in water, such as bacteria, protozoa and the cancer cell, which are too large to enter the blood capillaries. This absorption is through the agency of phagocytes, which by diapedesis reach the lymphatics. The reactions in the lymph nodes represent the struggle of the gland to detoxicate these pathologic agents. The lymphatic channels lead from one gland to another, but in each gland they break up into lymphatic capillaries varying from a micron to 1 mm., and into endothelium-lined pockets and sinusoids before they are gathered again into the larger lymphatic channels for onward movement. So far as the bacillus of tuberculosis, the spirochete and the cancer cell are concerned, the process is one of involvement of gland after gland, with eventual escape of the pathologic agents into the venous system through the subclavian veins. New leukocytes formed in the lymphatic system may act as carriers of the specific agents.

There are two theories with regard to lymphatic vessels: one, that the lymphatics communicate directly with the tissue spaces, the ancient view as against the second and modern view of MacCallum that the lymphatics represent a closed system lined by a single layer of endothelial cells. There is still discussion, however, as to whether the fluid in the lymphatic channels is tissue fluid, or whether there is a difference, not yet recognized. The lymphatics are thought to originate from the venous system; this theory is apparently confirmed by the excellent work of Sabin, Lewis and others.

It is an interesting and perhaps not wholly unprofitable digression to direct attention to the fact that in invertebrates the blood is white or colorless. In vertebrates, with the exception of the amphioxus, the blood is red, and in mammals, has established characteristics. The first blood of the fetus is white. Is it possible that the lymphatics are the primary system, and the vascular circulation the secondary? Leukemia is a reversion to the most primitive type of blood, and might well be called the cancer of the white cell, just as pernicious anemia has been picturesquely designated the cancer of the red cell.

There are no lymphatics in the liver other than in the portal connective tissue spaces. The star-shaped cells of Kupffer are endothelial cells, with phagocytic properties, lining the blood channels and sinuses of the liver. There is very little evidence to show that Kupffer's cells differ in function from similar phagocytic endothelial cells which line the blood sinuses in the spleen, lymph nodes and other organs.

The voluntary muscles have no lymphatics inside the connective tissue spaces of the muscle sheaths, which accounts for their remarkable resistance to infection.

The lack of lymphatics in the central nervous system is well illustrated by the slow absorption of hemorrhagic exudates, and the latency of abscess of the brain.

There is as yet no direct evidence to show that new lymphatic glands can form. It is equally true that there is no direct evidence to show that they do not form. The main lymphatic trunks usually accompany the blood vessels, and lymph glands interrupt their courses in certain situations. The position of the large lymph glands is obvious, but smaller glands exist and may be numerous, sometimes microscopic in size, and often infiltrated with adipose tissue for which they may be readily mistaken. In the arrest of solid objects they play the same part as the larger glands; Stiles has established their importance in the arrest of cancer



cells. Hyperplasia of these minute glands may lead to the belief that they are new formations. Hemal lymph nodes are believed by Meyer not to be true lymph nodes; they appear normally in certain of the lower animals, but are seldom seen in man, unless perhaps in accessory spleens. The pelvis has few lymphatics, and is relatively immune to infections as contrasted with the under surface of the diaphragm, which has many lymphatics with apertures of such size that microscopic carmin particles have been seen to enter them and pass through into the thoracic glands. Herring and MacNaughton, in a splendid research, conclude that the lymphatics are probably not so numerous as is often believed, and that they are almost always confined to the true connective tissues. They have shown that the lymphatics are concerned with the absorption of solids and material insoluble in water, while the blood capillaries are mainly associated with the absorption of material which is soluble in water. The fact that the lymphatic vessels are supplied with valves which prevent back-flowing and incompetence of these valves, or interruption of the lymph current from various other causes, is important in connection with the etiology of various forms of lymphedema.

The influence of secondary septic infection on the lymphatic manifestations of tuberculosis, syphilis and carcinoma can hardly be overestimated. The tuberculous patient seldom dies from tuberculosis unless the infectious products are confined, producing injurious pressure, as on the brain; death results rather from the associated sepsis. If septic complications of tuberculous processes exist which are removable, the prospect of cure or improvement is greatly enhanced. It is very important that all foci of infection in the tonsils, teeth, and so forth, be eradicated in the tuberculous patient. Growing experience in the treatment of tuberculosis teaches that the glandular manifestations of tuberculosis may be and often are successfully combated spontaneously by encapsulation of the bacilli of tuberculosis and their destruction within the lymph nodes. It is largely a question of individual resistance. A high percentage of general postmortems reveal tuberculous lymphatic glands, many of which have been successful in sterilizing the contained bacilli.

In syphilis the prospect of successful lymphatic defense is not good, and some spirochetes escape from the lymphatic glands into the circulation. Undoubtedly more or less individual immunity to syphilis exists, but permanent arrest of syphilis depends largely on specific medication, such as arsphenamin and mercury, rather than on spontaneously produced immunization. The removal of foci of infection or septic complications of syphilitic infection has been shown to have a great influence in aiding the arrest of the disease by appropriate treatment.

In cancer, the prospect of successful glandular defense against the extension of the disease is exceedingly small. There is reason to believe that a certain immunity to cancer does exist in individual cases. On several occasions I have been unable satisfactorily to remove the entire growth, and yet the patient made a recovery lasting for three or more years. The records of certain necropsy findings after deaths from operation have shown interesting data, especially with regard to the lungs. Areas of carcinoma too small to be shown in the roentgenogram were represented by little nodes of fibrous tissue containing a few cancer cells; other little areas in the vicinity were quite similar in appearance, but contained no cancer cells in the

cicatricial mass. While this would by no means prove that the defense as a whole is successful, it does show that a mechanism of defense exists, and that roentgen ray and radium in addition to sterilization of the cell nuclei act in much the same way, developing masses of scar tissue which cut off the blood supply and obliterate the contained cells. The cancer cell left to itself eventually destroys its host, unlike the bacillus of tuberculosis and the spirochete, which can live only on the living; hence invariable destruction of their hosts would mean eventual extinction of the infecting organisms.

Clinical and pathologic experience teaches that cancerous involvement of glands means incurability of the disease in a large majority of cases. It is true that glandular defense may be efficient for a prolonged period, but ultimate cure is confined to only a small group of cases when the lymphatics are involved in the cancerous process.

Investigation of the results following operations on patients who had come to the clinic with cancer of the rectum with involvement of the glands showed that in Group 4, in which all the regional glands were involved, there was only one five-year cure in spite of the removal of all the involved glands that could be detected. It is extremely important, in operating in cases of early cancer, that all the gland-bearing tissue should be most carefully removed. Here is the chance to remove the disease, and if there is glandular involvement to dissect beyond it. However, terrific operations as a routine procedure, when the glands are extensively involved, may not give added security against the return of the disease sufficient to warrant the increase in the operative mortality; each case must be judged on its merits. Experience has taught us the advisability of removing the primary source of the disease wherever possible, whether or not all of the involved lymph nodes can be extirpated, especially if the disease is situated in a septic region, such as the stomach, intestines and rectum. A palliative resection, even if all the enlarged glands cannot be removed, will often add three years or more of comfortable existence. The individual may return to his daily duties, and die after a comparatively short and painless illness from internal metastasis. We have had patients for whom palliative resection of the stomach was performed without removal of all the infected glands, who lived for three or more years in comfort and apparent health. The same has occurred in cases in which the liver contained metastatic cancerous nodules. Palliative operations which remove the primary source of the disease may permit nature's defense to exert its full strength on the glandular and other secondary lesions.

#### CONCLUSION

I wish particularly to direct attention to the fact that not all enlarged glands associated with cancer, especially in septic situations, such as the gastro-intestinal tract, are due to cancer. The glands may enlarge if a benign lesion, such as a chronic ulcer, precedes the cancerous change. Chronic sepsis involving the glands is not infrequent; the glands may become so extremely hard as to appear malignant. This condition is quite constant in cancer of the large intestine. Postmortems show that half the patients who die from cancer of the colon have no cancerous involvement of the lymphatic glands at the time of death, although the glands may be greatly enlarged from sepsis. I mention this because I have operated on many patients whose condition after



exploration has been pronounced inoperable on account of glandular involvement, and I have been able to resect and definitely to show that the glands were septic, not cancerous. These patients have remained well for long periods. Microscopic examination of the glands will be necessary in many cases to decide the question.

## AFTER-CARE OF INFANTILE PARALYSIS CASES OF THE 1916 EPIDEMIC IN BROOKLYN

A DETAILED REPORT OF ABOUT THREE HUNDRED  
CASES FOLLOWED THROUGH FIVE YEARS

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INTRODUCTION BY THOMAS J. RILEY, PH.D.  
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### INTRODUCTION

When an epidemic attacks more than five thousand children and young adults in a community in a few summer months, with a mortality of about 25 per cent. and with an expectation of more or less crippling of the remaining three fourths, it is a matter of general interest to the community at large as well as of special interest to the medical profession. The first interest is centered around measures to prevent the spread of the disease in the community. No less important is the immediate and follow-up care of those stricken. But a community does not do its full duty if it neglects to collect pertinent facts concerning such a scourge, and to publish them in the hope that from such data useful information may be available. This is a report of the repeated examination of 297 chosen patients, from the thousands stricken with infantile paralysis in Brooklyn, in the summer of 1916, and followed through five years. From the manner in which they were selected it is believed that they typify, and the findings are practically those of the entire group stricken and surviving the initial mortality.

At first everybody was so busy creating or enlarging the facilities for caring for the many children that had been left crippled that little attention was given to making examinations and records that might have scientific value as to the progress and recovery of the children. Soon, however, the Brooklyn Committee for Crippled Children made plans for such a record. An elaborate form was prepared by a special committee of orthopedic surgeons and neurologists, which included Dr. Walter Truslow, Dr. Jacques C. Rushmore, Dr. William Browning and Dr. Frederick C. Tilney. This form of record was put in the hands of the orthopedic surgeons at the three largest orthopedic dispensaries in Brooklyn, and it was arranged that 100 children should be chosen from each of the three, who should be examined every six months with great care for several years. This record was intended to show in detail the initial condition and the history of the case under the several forms of treatment.

Unfortunately, the war called away some of the orthopedic surgeons, and the examinations were not carried out as thoroughly as had been hoped. Moreover, the original plan of having three different surgeons or groups of surgeons making the records gave a variety of findings from which it was not possible to eliminate entirely the personal equation. However, the reexaminations were centered in the hands of

Dr. Horace G. Dunham, who completed them and prepared the report. It is rather remarkable that 297 out of the initial 300 are reported on in his statistics. Not all of them were examined at the later dates, but the basis for his findings has probably been excelled in few instances, if any.

Although the burden of after-care and the responsibility for this special report rested at the first with the Committee for Cripples of the Brooklyn Bureau of Charities, material assistance has been rendered by the Brooklyn orthopedic hospitals and dispensaries and the Visiting Nurse Association and the Children's Aid Society in carrying on the work and the study.

### THE REPORT

While Medin was the first to demonstrate the occurrence of acute anterior poliomyelitis (infantile paralysis) in epidemic form, he included only such patients as had been paralyzed. It remained for his associate Wickman to call attention to the nonparalytic or abortive forms, and to emphasize the fact that these patients might be influential distributors of the disease.

Since time has shown that the disease is very common and that probably a large proportion of the population at some time in their life history has been afflicted by the abortive or nonparalytic form, particularly in very early life, it is easily conceivable that a certain number of obscure conditions of the central nervous system may have at least been initiated by adhesions and obstructions resulting from such an attack, unnoticed at the time of onset because no clinical signs and symptoms were present. This is especially applicable to various types of hydrocephalus which can be induced by slight pathologic change along the various channels from the lateral ventricles of the brain to the subarachnoid spaces.

The origin of the American epidemics during the last two decades is somewhat in question. It was thought by one group that the 1907 epidemic followed the influx of a large number of Scandinavians only two years after the epidemic in Norway and Sweden. This theory, however, would seem to need further proof before its acceptance, since the distribution of the poliomyelitis epidemic of 1907 in the Middle West did not closely correspond geographically with the distribution of the newly arrived Scandinavians. In Norway, a small epidemic was recorded in 1868, while in Sweden, the first one noted was 1881. From that time the epidemics have become more frequent and of greater dimensions up to the great epidemic in Scandinavia in 1905. Since that time epidemics in varying degrees of severity have been reported throughout Europe, the United States, the West Indies, South America, Australia and the South Sea Islands. In certain parts of Europe the disease is endemic. It is only since 1905 that much attention has been paid to this disease by boards of health, and particularly by the daily press.

It is most significant that one writer states that the majority of the nonparalytic cases at present escape recognition, as well as a large number of those resulting in definite paralysis. Furthermore, the New York epidemic of 1907 was practically ignored until after the acute stage was past and until the residual defects of a large series of cases came to the attention of dispensaries and of neurologists, pediatricians and orthopedic surgeons, thus leading to an investigation of the cause.



Sinkler pointed out the seasonal relation to the disease, and states that 78.8 per cent. occurred from May to September. This is the experience of most observers in most of the epidemics, which does not preclude its appearance in any month of the year, the lowest incidence being in the colder seasons of winter and early spring. Transmission may take place by direct contact, carriers, dust, infected clothing and other material or intimate contact with the patient, and by foodstuffs, insects or domestic animals. There seems to exist no doubt at the present time regarding the transmissibility by direct contact. In fact, this has been demonstrated in a practical way by inducing the disease in monkeys with virus obtained from the secretions of the nose and throat of man showing the clinical phenomena, as well as of those individuals who have been in direct contact with the disease but who have manifested no clinical signs or symptoms. In this series, the number of children in a family with only one person ill ranged from one to eight, the average being three children to each family so affected. There were fourteen families in which more than one child in the same family were paralyzed. The reason even greater numbers are not affected during epidemics may be explained, and at some future time demonstrated, on the basis of a natural immunity to this particular virus, just as the Schick test for diphtheria susceptibility has given us similar data; and, in addition, a large number of "contacts," both direct and indirect, very reasonably may acquire an immunity without the acute upset and residual paralyses.

A point of interest brought out by the investigations of the 1916 epidemic was that most of the cases occurred on the first and second floors of the taller houses. This is contrary to conditions found during scarlet fever and diphtheria outbreaks, which show a higher percentage on the upper floors. It suggests a point in favor of the transmission by rat fleas in the case of poliomyelitis, the lower, relatively darker quarters favoring the abode of rodents and insects.

Another important observation made during the 1916 epidemic, while not conclusive, is strongly suggestive. It was found that a large number of children with poliomyelitis had a diseased condition of the nose or throat, and sometimes a combination of both, affecting tonsils and adenoid tissue. Of special significance is the observation that only a small group of patients previously operated on for tonsil and adenoid conditions contracted the disease, and in the patients operated on in whom it did develop, the percentage of recoveries was very much higher than in those who had not been subjected to operation. The disease is one that essentially confers immunity after the attack; the duration of the immunity is, of course, not known. A few instances are recorded in which a child apparently had recovered from an attack of infantile paralysis, and after a long interval experienced a recurrence with increased paralysis. Two such cases are recorded in the New York epidemic of 1916, but not one is included in this series of 297 patients. However, the immunity produced by one attack seems to be almost perfect, and the instances of recurrence are so rare as to be classed with the curiosities.

Certain interesting facts are found in the records of the New York State Department of Health, concerning the 1916 epidemic, which was the most extensive recorded. From June to December, 1916, there were, in the state, 13,000 cases and 3,300 deaths. It began in Brooklyn in April, 1916, and at first spread slowly

and later more rapidly to every part of the state. More than two thirds of the entire number, or 8,991 cases, were in New York City. The mortality rate was approximately 25 per cent., a higher figure than that found in any previous large epidemic. While absolutely by far the greater number of patients were in New York City, the relative percentage was much higher in the rural communities, which averaged 2.4 per cent. per thousand, while New York City showed 1.6 per cent. per thousand. In the other cities of the state the average was 0.6 per thousand.

In the first 7,500 cases in New York City, nearly 80 per cent. were among children under 5 years of age, while in other parts of the state less than two thirds of the patients were under 5 years.

After much careful study, it was determined that persons with the disease were a source of active infection at least eight days after the acute onset, and there was little evidence that the disease was contracted from a person ill more than two weeks. For this reason the proper isolation period suggested for suspected cases in the future is two weeks. It is thought that the virus is carried to the different parts of the body by the lymphatic system, and, contrary to the older studies, the disease at present must be considered a general and not a local infection, but shows a tendency to localize in the nerve and lymphoid system.

#### PATHOLOGY

Naturally, in a disease such as poliomyelitis, in which a wide variation in degree of damage takes place, from the abortive, nonparalytic, to that causing early death, one must of necessity find great divergence in the extent of the pathologic changes.

The pressure of the cerebrospinal fluid is usually moderately increased, and presents abnormal characteristics. It is sterile and usually clear, but in exceptional cases may be cloudy or bloody. The number of cells is increased from twenty to 100, and in some cases even as high as 500 per cubic millimeter. The polymorphonuclear is the chief type of cell encountered in the earlier stages of the disease and preceding the paralytic period, and sometimes they comprise 80 or 90 per cent. of cells counted at this time. After paralysis is established, the mononuclear lymphocyte predominates in numbers ranging from 75 to 100 per cent. There are sometimes other less conspicuous cells, such as the endothelial type of large mononuclear cell, and the phagocytic cell. All of these types of cells rapidly disappear from the fluid, the count being normal or approximately so, at the end of a fortnight after the acute onset.

Like the normal fluid, it gives a positive Fehling's reaction and usually gives a reaction for globulin, but less marked than that obtained in the various forms of meningitis. The early changes show asymmetric congestion of the blood vessels of the meninges, brain and spinal cord, and with the congestion, an exudate of small, round cells in the perivascular lymph spaces of the leptomeninges. The most highly vascular areas of the cord present the most marked changes in the cervical and lumbar regions, and especially the anterior part of the cord, though not exclusively in these areas, as changes varying in degree may occur throughout the entire cord.

With obstruction of the circulation, there is more or less marked edema, and punctate hemorrhages or even larger vascular ruptures may be seen scattered throughout the white and gray substance of the cord.



The fact that a large proportion of these cases show their early paralysis much more marked than months and even years later, is readily understood after study of the pathologic invasion of the affected regions of the cord. Here the virus effects changes of all grades from the severest destruction, gradually shading off in the parts more remote to very slight and scarcely appreciable deviations from the normal structure. In the less severely involved areas, a strong tendency to return to normal is noted, and the temporary inhibition of nerve function due to acute upset is gradually eliminated as recovery is approximated; consequently, the muscles supplied by the centers involved are in turn able to resume their function in proportion to the restored innervation. These more favorable changes are due largely to absorption of exudate and edema, which cause transient pressure on these tracts, and the more hopeful aspect is impossible at the site of immediate and complete tissue destruction during the acute upheaval. While both motor and sensory portions of the cord are affected, it is well known that the motor side bears the brunt of the damage in this disease.

#### SYMPTOMS

Even a small experience with infantile paralysis must soon convince one that signs are much more prominent than symptoms. In a multitude of cases the acute onset will be ignored until some form of paralysis demands the attention. The different regions of the central nerve system affected have given rise to certain more or less characteristic types which are responsible for a classification of scientific interest.

The common symptoms of the acute attack are fever, general malaise, sometimes nausea and vomiting, headache, irritability, gastro-intestinal disturbance, and more often constipation than diarrhea. In addition, but less frequently, are observed sometimes coryza, rigidity of the neck, tonsillitis, pharyngitis, muscular twitchings, convulsions and cough. With all this array of manifestations of an acute disturbance, it must be remembered that many children would go to bed apparently well, and next morning be unable to move one or more of their extremities. It is well known that the severity of the onset bears no definite relation to subsequent paralysis, the mildest of the acute attacks being at times followed by extreme and permanent damage to the central nerve system, while on other occasions the converse is true. Fever is the most constant of the acute symptoms and sometimes the only outstanding one, probably explaining why in repeated instances the diagnosis of "teething," "diarrhea," "pneumonia" and other complaints common to childhood has been made prior to the appearance of paralysis. Headache is most commonly associated with the febrile state. In addition, there is frequently pain along the spine and in the legs, and also back of the head and neck. The child's mental state is more likely to be one of drowsiness until disturbed, when it becomes irritable during manipulation, but soon relapses into its former state again.

#### DIAGNOSIS AND PROPHYLAXIS

It is easily conceivable, when considering the protean nature of poliomyelitis, that sporadic outbreaks would cause obscurity and error in diagnosis; but it is much less to be comprehended that errors should occur so frequently during a great epidemic as the facts seem to indicate from the records of 1916. Presumably, in some instances, the diagnosis of infantile paralysis, in

the initial period of an acute upset in a child, was incorrectly made, as the subsequent course and termination of these particular instances demonstrated; but much safer and wiser was it to err in favor of prevention and quarantine than to permit the real infection to be widely scattered under some other guise, simply because the muscle defect had not yet established its true identity.

The most important and far reaching consideration underlying the question of diagnosis is, after all, prophylaxis. The patient with an acute illness suggesting poliomyelitis already has the disease or has not; and while the best methods of treatment at hand will be employed, that particular patient has already developed his illness, and this fact cannot be altered. What can be controlled, however, is the dissemination from that focus to a multitude of other spots within a wide radius, owing to a diagnosis of some benign illness which would not indicate the rigid prophylactic measures imperative in every case of infantile paralysis.

A type of this disease not so important to the patient as to the community is the nonparalytic or abortive form of infantile paralysis. Often, these cases are much more of a menace, because unrecognized, than the paralytic type, which is likely to be correctly diagnosed early, allowing proper preventive measures to become operative immediately. The gravity of this phase of the situation may be realized when no less an authority than Wickman found from 25 to 56 per cent. of nonparalytic cases in the total incidence of the disease; and even so he considered these figures far too low! Naturally, after an epidemic is established, there do not exist the same chances of ignoring the true condition. However, when one appreciates the widespread disaster which may result from dissemination of the nonparalytic poliomyelitis, which may in the next child produce the severest paralysis, the alternative of occasional diagnostic errors in its favor is not to be questioned. That the earliest recognition of this type is of first importance in controlling the spread of the disease needs repeated emphasis. Even when a great epidemic is not holding sway, it is particularly important in acute illnesses in which any obscurity prevails to perform a spinal puncture for complete examination of the cerebrospinal fluid, for by this means sufficient evidence may be brought to light for at least a tentative poliomyelitis, and thereby prevent its further spread from that focus into the community at large.

#### PROGNOSIS

While there are a number of factors in the prognosis of vital interest to the patient, that of first importance to the vast majority is, What are the possible and probable end-results, and will they seriously handicap from an economic standpoint? Only a very small number of these cripples can afford to disregard the capacity for earning a livelihood, even if they were willing to ignore mentally such a physical condition. In this group the lower extremities invariably expressed a more favorable effort toward restoration of function except in those few instances in which the arms and hands were so slightly affected originally as to return quickly to a practically normal status.

This disease is peculiar in that, with so serious a process, even during its acute stage, one does not have apprehension so much as to life or death as to end-results, after the first force of the storm is over. The great question is, What kind of a wreck will be left, and to what future purpose? This is the most difficult problem to solve. Experience with two large epidemics



in this city has given ample evidence that the initial period of the acute onset offers no features that are infallible as a standard guide in prognosis. The most scrupulous and exacting care must be given each patient. The question of diagnosis involves two essential points: prophylaxis for the community, and the most advanced treatment for all stages of the disease in order to insure the greatest possible function ultimately. At the same time, the early neglected cases should not be ignored. Repeated instances are recorded in which no attention was given until long after deformity was established, and by persistence and regularity in treatment over a long period, much relative improvement was demonstrated.

In a general way, the younger the child, the nearer does restoration of function approximate the normal status. Ordinarily, when complete recovery takes place it is within six weeks, and may be delayed six months, again emphasizing the importance of earliest diagnosis for correct treatment in order to secure the maximum salvage of involved parts. While an attempt was made to test the electrical reactions of these children during repeated examinations, it was highly unsatisfactory in the great majority of the patients. The prerequisite of a perfectly quiet state during this procedure, in order to obtain data of any value, was practically impossible, partly because of ignorance, but chiefly on account of their youthful fear.

#### GENERAL STATISTICS

This series has seven patients with a practically complete return of function in the upper extremities, and twenty-three with a similar result in the lower extremities. In the 297 patients, the paralysis was first noted from one to twenty-one days after acute onset, the average time being three days. The ages ranged from 8 months to 15 years, averaging for the series 2.8

TABLE 1.—PARTS OF THE BODY INVOLVED

	Number
Back and abdomen alone.....	1
Right arm alone.....	6
Left arm alone.....	10
Right leg alone.....	14
Left leg alone.....	14
Both arms alone.....	4
Both legs alone.....	33
Both legs and left arm alone.....	5
Left arm and left leg alone.....	1
Left arm and face alone.....	1
Right arm and face alone.....	1
Face alone.....	2
Back and abdomen plus:	
Both arms and both legs.....	9
Both arms.....	1
Both legs.....	120
Both arms and left leg.....	2
Both legs and right arm.....	11
Both legs and left arm.....	4
Right arm.....	9
Both legs, right arm and face.....	1
Left arm.....	6
Right leg.....	24
Left leg.....	15
Left arm and right leg.....	1
Both legs and face.....	1
Left arm and face.....	1

years. Record as to the month of onset was obtained in 292 instances: three during April, 1916; three in May; forty-one in June; 146 in July; eighty-seven in August, and twelve in September, the peak being reached in midsummer.

The return of function of the lower extremities with assistance was from one week to one year, or an average of four months; and without assistance, from three days to one year, or an average of four months. While the average is the same in the two groups, it is evident

that the less involved, i. e., return of function without need of assistance to get about, showed an earlier tendency to resume normal work than the more extensively injured legs.

The records show that spinal puncture was performed in forty-two different instances. It is quite probable that more were performed, however, and not noted. Two hundred and ninety patients suffered from

TABLE 2.—MUSCLE GROUPS INVOLVED

LOWER EXTREMITY	Number
Abductors of thigh.....	159
Adductors of thigh.....	168
Flexors of thigh.....	164
Extensors of thigh.....	167
Internal rotators of thigh.....	205
External rotators of thigh.....	165
Extensors of leg.....	222
Flexors of leg.....	209
Extensors of foot and toes.....	190
Dorsal flexors of foot.....	191
Tibialis anticus.....	249
Extensor longus digitorum.....	195
Extensor longus hallucis.....	195
Peroneus.....	208
Plantar flexors, foot and toes.....	195
Gastrocnemius and solens.....	225
Tibialis posticus.....	224
Flexor longus digitorum.....	195
UPPER EXTREMITY AND TRUNK MUSCLES	
Orbital.....	5
Facial.....	7
Masticatory.....	1
Pharyngeal.....	1
Laryngeal.....	1
Cervical flexors.....	5
Cervical extensors.....	5
Cervical rotators.....	5
Erector spinae (thoracic).....	175
Erector spinae (lumbar).....	174
Serratus magnus.....	14
Intercostals.....	2
Rectus abdominalis.....	153
Lateral abdominal.....	154
Deltoid.....	63
Pectoralis major.....	48
Latissimus dorsi.....	45
Supraspinatus.....	45
Infraspinatus.....	45
Teres major.....	46
Teres minor.....	46
Rhomboids.....	46
Biceps.....	45
Triceps.....	46
Pronators of forearm.....	37
Supinators of forearm.....	39
Flexors of wrist.....	38
Extensors of wrist.....	36
Adductors of thumb.....	39
Flexors of thumb.....	40
Extensors of thumb.....	39
Flexors of fingers.....	43
Extensors of fingers.....	42
Abductors of fingers.....	39
Adductors of fingers.....	39

the spinal type of this disease, five from the bulbo-pontile, and two from the meningitic.

These reflexes were elicited months, and in many instances a year or longer, after the acute onset.

Coldness and cyanosis were evident in most of the cases in varying degrees; the greater the paralysis, the more pronounced were these changes. There were none with breaking down of soft parts and ulceration, although a few children, constantly flat on a Bradford frame, had at times a papulovesicular eruption which would recur at intervals. These conditions, although partly attributable to a loss of motion in the affected regions, are primarily a consequence of involvement of the vasomotor system in the paralyzed parts of the body. That so few trophic skin lesions were present in this series is probably due to the fact that treatment was persistent, either at home, in the clinic, or in combination. The electricity, muscle training, exercises and massage—especially the latter—certainly improve the general circulation and vascular tone. It is also known that new paths of conduction for nerve impulses may be developed to replace those destroyed, and that certain



definite exercises are influential in stimulating these new pathways.

For the entire series of examinations the records show certain measurements, as recorded in Table 4.

A glance at these figures shows that increase in atrophy far exceeds the number of those decreasing over an equal period of time. This might create a false impression of relative values unless one understands

TABLE 3.—REFLEXES ABSENT

	Number
Pectoral .....	2
Biceps .....	21
Triceps .....	25
Wrist .....	20
Radial .....	13
Ulnar .....	14
Patellar .....	179
Achilles .....	222
Plantar flexors.....	112

that atrophy and function have no direct bearing on each other; that is, a high grade of atrophy may still give in that member an excellent degree of function far excelling that in an affected extremity of comparatively slight atrophy. There is also a class in each muscle group which shows no change between first and last examinations; that is, there was a certain amount of wasting on the initial examination, which remained the same at the last test, which I am convinced indicates the value of treatment in maintaining that standard. The patients who showed increasing atrophy during regular treatment were those more profoundly involved; and here again, I feel that proper attention in these cases greatly modified the results. In the

TABLE 4.—MEASUREMENTS

	Number	Percentage
UPPER EXTREMITIES		
No shortening.....	11	16 $\frac{2}{3}$
Decrease in shortening.....	22	33 $\frac{1}{3}$
Increase in shortening.....	29	45 $\frac{1}{2}$
No change between first and last examination.....	4	6 $\frac{2}{3}$
CIRCUMFERENCE OF UPPER ARM		
No atrophy.....	1	2
Decrease in atrophy.....	10	20
Increase in atrophy.....	30	60
No change between first and last examination.....	9	18
CIRCUMFERENCE OF FOREARM		
No atrophy.....	0	0
Decrease in atrophy.....	26	31 $\frac{3}{4}$
Increase in atrophy.....	42	51 $\frac{1}{2}$
No change between first and last examination.....	14	17
LOWER EXTREMITIES		
No shortening.....	42	18 $\frac{2}{3}$
Decrease in shortening.....	41	18 $\frac{1}{2}$
Increase in shortening.....	127	61
No change between first and last examination.....	15	6 $\frac{2}{3}$
CIRCUMFERENCE OF THIGH		
No atrophy.....	1	0.5
Decrease in atrophy.....	51	23 $\frac{1}{2}$
Increase in atrophy.....	146	67 $\frac{1}{2}$
No change between first and last examination.....	28	13
CIRCUMFERENCE OF CALF		
No atrophy.....	3	1 $\frac{1}{3}$
Decrease in atrophy.....	47	20 $\frac{3}{4}$
Increase in atrophy.....	141	67
No change between first and last examination.....	36	16 $\frac{1}{3}$

majority of these cases, atrophy is greatly out of proportion to impaired function, which has been distinctly improved in every patient of the series, in varying degrees, excepting about seven.

The various types of deformity encountered and requiring some form of treatment are listed in Table 5.

TREATMENT

While treatment of the acute stage of illness is not the primary concern of this review, which considers

children suffering with varying degrees of paralysis and with a tendency toward as well as established deformity, it may be of some interest to note certain procedures which our records indicate were carried out during the early days of illness. Serum was administered to eleven patients, and intraspinal injections of epinephrin to three. Of 290 of the total number examined (297), the records indicate that 121 were treated at home during the acute illness, and 169 in hospitals.

The after-treatment, in its many phases, bears directly on this series. In the convalescent and chronic stage, treatment was carried out through orthopedic clinics. Therefore, in every case the advantage of any form of special treatment was advised by the chief in this branch of surgery before it was carried into practice. One of the essential purposes in effecting early treatment, that of preventing deformity which follows contraction of the muscles, and which can in a large majority of instances be prevented, was not possible of fullest realization even in these special clinics, because many did not get adequate care until after the damage had in a measure been established.

Hydrotherapy was very generally advised for all these patients, and by the majority was faithfully carried out.

TABLE 5.—TYPES OF DEFORMITY REQUIRING TREATMENT

	Number
"C" curve to left of spine.....	17
"C" curve to right of spine.....	11
Left dorsal, right lumbar curve of spine.....	19
Right dorsal, left lumbar curve of spine.....	23
Posterior curve of spine.....	17
Scoliosis .....	1
Lordosis .....	13
Abdominal protrusion.....	98
Flat foot.....	42
Foot drop.....	16
Hammer toe.....	13
Varus .....	18
Valgus .....	78
Equinus .....	5
Equinovarus .....	33
Equinovalgus .....	90
Calcaneovalgus .....	28
Backward curvature of knee.....	55
Subluxation of shoulder.....	42
Total .....	619

When possible, the child was taught to exercise the affected muscles while in warm water, which was an advantage, the extremities being lighter in water than in the air. Massage, muscle training and electricity were advised for practically all of these patients. The number taking advantage of these measures and the regularity with which they were followed varied, as must always be the case with clinic patients and different types of human nature; but it is well within conservative limits to state that all of them had massage and muscle training exercises; a majority regularly; and many included electricity, which, however, was not given in all instances. The electrical treatment was more difficult to give, because that meant a trip to the clinic, which was prohibitive to many of these mothers with large families and no responsible substitute; but massage and muscle training could be and was carried to them by the visiting nurses. In the clinic this form of treatment was given by skilled masseuses. In any form of treatment the best results are to be expected from trained operators; but when this was found impossible owing to lack of numbers, the mothers were instructed, and many times proved to be intelligent and able cooperators after a little training by the visiting nurse.

Lovett and Martin, in a series of cases, concluded that the chances for improvement with expert daily



treatment were 6:1; with supervised home exercises, 3.5:1; and without supervision it was 2.8:1. They also studied forty-four totally paralyzed muscle groups after the lapse of one year. In 48 per cent of these after two months' training, there was a certain amount of demonstrable power developed, while in a similar number of the same kind of cases with no treatment, a return of power was observed in only 27 per cent. This would seem to be significant in emphasizing the great value of expert treatment for the maximum return of power, even though a certain number of less gravely affected patients may show some improvement when neglected.

The massage has a twofold advantage in that it stimulates nutrition by the exercise, and induces an increased flow of blood and lymph to the paralyzed parts, thus aiding in the more rapid and complete elimination of waste products. A mild sinusoidal current was used for those children receiving electrical treatment. The muscle training exercises were those best adapted to the needs of the involved group in the individual case and found to give the best results.

A vital need for many of this group was attention by the orthopedic surgeon to adjust braces and splints as the indication demanded. One can readily understand how great would be the need for some kind of support for the weakened muscles in order to prevent deformity, to prevent contracture of nonparalyzed muscles, and to prevent overstretching of the partially paralyzed group. By performing these functions when properly applied, apparatus aids directly in the recovery from paralysis. The three different orthopedic clinics meeting the demands of these 297 patients applied braces in 153 instances; Bradford frames, in 48; plaster casts, in 145; plaster jackets, in 20; abdominal binders, in 32; splints, in 44; shoes raised, in 74; foot strapped, in 47 cases; foot plates, in 3; and only one patient had crutches adjusted in this series.

Operative procedures<sup>1</sup> were resorted to sixty-six different times on fifty-nine different patients: astraglectomy, 7; tendon lengthening, 8; muscle stretching, 18; subperiosteal separation, 8; tenotomy, 10; loop operation, 7; tarsectomy, 2; Gallie operation, 3; arthrodesis, 1; Hoke operation, 2.

It has been impossible to secure complete information relative to the patients operated on. Concerning twenty of the fifty-nine different patients, I am advised that two show much improvement, fourteen some improvement, three slight improvement, and one a poor result. It is too soon, however, to value end-results.

I am advised that there are at present 136 of the 297 patients receiving treatment, fifty of these being on the home treatment list. Of the remainder, six have died, thirty-four have moved away, thirty-five cannot be located, and the remainder are not receiving treatment of any kind. Experience would seem to prohibit any absolute and infallible time limit when one can say that the last vestige of improvement in a muscle group has been attained. It has been repeatedly demonstrated over periods of from five to seven years under adequate supervision, and response has been stimulated in neglected cases after the same number of years and even a longer stretch. Hence the main guide would seem to be regular, consistent treatment under expert supervision from the onset until one's judgment in each individual patient indicates that the maximum result has been reached.

It has many times been emphasized that improper treatment may produce greater damage than neglect. Atrophy may result in muscles from overexertion as well as from insufficient exercise. Caution in exercise, massage and electricity has proved more beneficial than pushing to the point of fatigue. Lovett's spring balance test is one of the excellent measures especially designed to meet this problem and prevent overtaxing the involved muscle group.

Prevention is, after all, the only positive means of an absolute cure. Such a statement may seem perfunctory, and the interval of a decade between great epidemics tends to lull one into a sense of security; but a brief glance at the past history of this blighting malady should arouse permanent interest and activity toward constant vigilance for the future. The records show these figures: New York City, 1907, 2,500 cases; Nebraska, March to December, 1909, 1,037 cases; Pennsylvania, summer, 1910, 1,076 cases; Minnesota, summer, 1910, 1,000 cases; United States as a whole, 1910, 14,590 cases; New York City, July to November, 1912, 1,108 cases.

The foregoing figures show only those epidemics including 1,000 cases or more in this country. Let it be remembered that there remain other invasions both at home and abroad, of startling proportions: Sweden, July to September, 1905, 1,030 cases; October to December, 1911, 3,840 cases; Norway, summer, 1911, 1,250 cases. Furthermore, from the time of its earliest record in the country when the ten cases in Louisiana, in the summer of 1841, were compiled, there have been, in addition to those already noted at short intervals of two or three years, outbreaks in different sections of this country ranging from ten to 923, the latter figure representing the Massachusetts outbreak in the summer of 1909.

These figures of past history surely seem worthy of serious deliberation for future policy toward a disease that visits us practically every season to some degree. It is easy to settle into a state of false security after a great menace has passed by, but what assurance is there that another is not close at hand?

The most decisive victory when biologic poisons are at work is to prevent invasion.

#### SUMMARY

This group of patients did not come under the same supervision from the acute onset up to the present time. Our experience with them dates from one to two years after the initial period of their illness, therefore giving a great variety of physical defect, depending on the severity of the attack, the type of early treatment in each instance, and the intelligence of the parents in cooperating with the physician.

The histories of this group indicate that only fourteen families had more than one child ill with this disease at the same time, which would strongly suggest that its contagion is not transmitted by methods obtaining in our common infectious diseases, such as diphtheria and scarlet fever, particularly since the vast majority of all the other cases were in families with two or more children in the same household. Other factors are dominant in its transmissibility, of which we to date have speculated much and to little practical purpose.

One great lesson should by this time have been learned. Particularly during an epidemic of infantile paralysis of any size, children with obscure indispositions should be kept at rest in bed for several days

1. The number of operations has greatly increased since this report was closed.



until the exact nature of their condition can be determined. One can err only on the right side in giving the patient with this disease every chance for the best recovery. When paralysis supervenes, it usually appears within a very short time after the initial upset, the average for this series being three days after the first manifestation of illness; but often the paralysis comes on twenty-four or forty-eight hours after, so that the patient with a malaise of no consequence need not be incapacitated over a long period of expectancy.

Early, neglected patients should never be ignored in treatment later, regardless of the degree of involvement. Repeated examples are a matter of record in which no treatment was given until long after deformity was established, and by persistence and regularity over a sufficient period, much relative improvement has been accomplished.

It is essentially a disease of childhood, the average age of this series being 2.8 years; therefore in every obscure, acute illness the diagnosis of infantile paralysis should always be a mental reservation, since sporadic cases occur in the community every year.

In this series, the back and abdomen with both lower extremities was the combination of involvement by far the most frequently found, indicating the common attack in these regions of the cord. In the lower extremities, the tibialis anticus was most often affected, next in frequency being the calf muscles and tibialis posticus. In the upper extremities, the biceps and triceps head the list. The more severely involved upper extremities did not respond to treatment as rapidly as the equally involved lower extremities, in our series.

While it is known that patients long neglected will show some restoration of function, it has been very definitely established, through practical application, that proper treatment regularly and systematically followed will produce far greater results than no treatment, in the same degree of involvement. Obviously, to obtain the best results and maximum functional return, these patients must have intelligent care from the outset of their illness. Correct treatment for a definite stage applied at the wrong time is far worse than none, just as surely as exercise pushed to the point of fatigue and muscle exhaustion is distinctly harmful.

Those patients have made the greatest progress in return of function who had the least interference during the initial stage of their illness, and when treatment in the subacute and chronic stages was intelligently advised and faithfully carried out. It would seem to us from experience with this series, some coming in the subacute and others in the chronic stage of the disease, that it is just as important for a correct diagnosis and

proper treatment in the beginning as at any period, since many subsequent deformities might be avoided entirely if the patient was properly supervised at the outset.

## ACUTE INTESTINAL OBSTRUCTION CAUSED BY FECAL IMPACTION IN MECKEL'S DIVERTICULUM \*

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The case here reported is of unusual interest on account of the rarity of the pathologic condition. In a search of the literature we were unable to find any other case in which a fecal impaction starting in a

Meckel's diverticulum had resulted in an intestinal obstruction. Numerous cases of intestinal obstruction due to Meckel's diverticulum have been recorded. Halstead,<sup>1</sup> in 1902, quoted Lichtenstern as noting a Meckel's diverticulum to be the cause of intestinal obstruction in 6 per cent. of all cases of acute obstruction. The obstruction in the cases reported has been brought about in various ways. In most cases a loop of bowel has been caught under or over the terminal filament of the diverticulum in much the same way as in the case of a postoperative adhesion. The diverticulum has at times



Meckel's diverticulum and proximal loops of bowel distended with fecal material; the terminal ileum and the cecum are collapsed. (From sketch made at operation.)

knotted itself about a loop of intestine. Many cases have been reported in which the diverticulum has been the cause of an intussusception. Peritonitis secondary to a diverticulitis has been reported as the cause of an ileus. But we have not been able to find a case on record in which a Meckel's diverticulum had collected sufficient solid material to cause a fecal impaction and obstruction. Fecal impaction in the small intestine, although extremely rare, is not unknown.

### REPORT OF CASE

On the night of August 12, 1922, E. B., a 10 year old schoolboy, was brought to the Sarah Morris Hospital (the pediatric pavilion of the Michael Reese Hospital) complaining of abdominal pain. The child had had a mild diarrhea for the preceding week, but had been up and about and otherwise well. Four hours previous to admission to the hospital, he was seized with sharp, severe, generalized, abdominal cramps. Gradually these cramps became localized at a point

\* From the Surgical Service of the Sarah Morris Hospital, Michael Reese Hospital.

1. Halstead, A. E.: Ann. Surg. 35: 495, 1902.



just below the umbilicus in the midline. About an hour later the child started to vomit, and had vomited four times before admission to the hospital. The vomitus at first contained the food eaten at supper; later it contained bile. At no time was the vomitus fecal. The mother had given the child an enema, and had obtained a small liquid stool, but with no relief of symptoms. There was no blood in the stool.

One year previous and again two months previous, the child had had similar attacks, which, however, had cleared up spontaneously in a few hours. Except for measles at the age of 4, the child had always been in excellent health.

On admission to the hospital it was noted that the child looked very ill. His face was drawn; his nose was peaked. He complained of nausea, and wanted to vomit, but was unable to do so. The pain had shifted more to the lower right abdominal quadrant, and was steady in character. He lay quietly in bed with both legs extended.

Physical examination except for his general appearance of being acutely ill, and for the abdomen, revealed no abnormalities bearing upon the case. The abdomen was slightly distended. There was distinct tenderness on light palpation over the lower right abdominal quadrant. Deep palpation anywhere over the abdomen caused pain, which was referred to the lower right quadrant. There was a definite increase in muscle resistance on the right side as compared to the left. The abdomen was everywhere tympanitic. There was no dullness in the flanks. Liver dullness was present. The liver, spleen and kidneys were not palpable. Just to the right of the midline at the level of the umbilicus could be felt a sausage-shaped mass, which seemed to be about 3 inches long. Pressure on this mass caused severe pain. Rectal examination was negative. The temperature was 99 F. (rectal); the pulse, 84; respiration, 22. Blood count revealed a leukocytosis of 14,100.

No definite diagnosis could be made. The probable diagnosis was, first, intussusception, in spite of the absence of bloody stools, and, second, acute appendicitis, the mass palpated being interpreted as the inflamed appendix enveloped in omentum.

The patient was prepared and brought to the operating room. Ether anesthesia was given. The abdomen was opened with a right pararectus incision. Several cubic centimeters of a clear fluid escaped. Coils of distended small intestine appeared. The mass that had previously been noted was easily palpated and delivered into the wound. It was composed of distended small intestine, but its exact nature and its position were at first difficult to recognize. Further exploration revealed the large intestine, cecum and distal ileum collapsed but otherwise normal. The appendix was free, not inflamed and evidently not associated with the present condition. About 8 inches above the ileocecal valve, the ileum abruptly became markedly distended, the intestine was livid, and the serosa was injected. At this point a broad based pouch, evidently a Meckel's diverticulum, protruded from the antemesenteric border of the intestine. The diverticulum and the ileum proximal to it for a distance of about 5 inches were distended by a doughy, semisolid mass, containing numerous small, hard lumps. The intestine above this was distended by gas and fluid. Gentle pressure was made on the diverticulum and the proximal intestine. Suddenly the intestinal contents slipped into the collapsed ileum, followed by a gurgling of gas and fluid. The semisolid contents could be milked along the ileum, through the ileocecal valve and into the large intestine. There had clearly been a fecal impaction, starting probably in the diverticulum, and causing an acute intestinal obstruction. As much of the impacted mass as possible was milked into the large intestine. The intestine almost immediately took on a more healthy appearance as the distention was reduced. Firmly believing that any unnecessary interference is strongly contraindicated in cases of acute intestinal obstruction, we did not make any attempt to obliterate the diverticulum. Furthermore, it was evident that purgation would be desirable in the after-treatment; consequently, we were especially anxious not to injure the intestinal wall.

After partial reduction of the impaction, careful palpation of the intestine gave no evidence of a stenosis, or of any

fixed intra-intestinal mass. The abdomen was closed in the usual manner, without drainage. The patient left the operating room in good condition.

In addition to the usual postoperative treatment of simple laparotomy cases, the child was given intramuscular injections of pituitary extract. Colonic flushings were alternated with olive oil retention enemas. Three copious bowel movements were obtained within the first thirty-six hours. The movements were brown and semisolid, and contained many hard masses. No undigested food particles were noted macroscopically. There was no macroscopic blood. The laboratory findings were negative.

The boy made an uneventful recovery, and left the hospital on the thirteenth day. One month later he was called back for physical examination and careful roentgen-ray study of the gastro-intestinal tract. His general physical condition was excellent, and a most careful examination with the fluoroscope and roentgenograms failed to reveal any retention. The diverticulum could not be visualized.

The case leads to many interesting queries and conjectures. Why, in the absence of any macroscopic foreign bodies or undigested food particles, a fecal impaction should occur in the small intestine with apparently no stenosis of its lumen, it is difficult to explain. We surmise that the diverticulum, acting as a reservoir, first became distended, and through pressure on the ileum caused a functional stenosis which gradually led to an impaction. Was it a wise policy to refrain from repairing the diverticulum at the time of operation? It is an open question whether or not it would be wise to reoperate, and obliterate the diverticulum before a fourth attack occurs. The boy at present, however, seems to be in perfect health. The roentgen ray fails to detect any retention, and it seems to us probable that this patient may, in common with many others, go his way unmolested by his Meckel's diverticulum.

#### SUMMARY

1. The case, an acute intestinal obstruction caused by a fecal impaction starting in a Meckel's diverticulum, is of interest because of its rarity. We were not able to find any similar cases in the literature.
2. A preoperative diagnosis of such a condition could not be made.
3. The uneventful convalescence was due, probably in great part, to the conservative procedure.

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**Military Training and Health.**—President David P. Barrows of the University of California in an address to members of the Association of the Army of the United States said of military training, "The weaknesses of our people were disclosed by the war, by our experience with five million drafted men. In my opinion no educational effort which the national government can make, at least for the male element of the nation, could compare in results with provision for a period of military training for every young man. Even though this period were no longer than six months it would suffice to do three things: to survey our youth physically, correct bodily defects and cure infectious complaints, train in cleanliness and personal hygiene. Six months' experience in camp and in the field would return the youth of our nation to their homes incalculably more robust, more healthful, more disposed to wholesome habits of life. In the second place, military instruction does one indispensable thing for a man's mind—it schools him in the habit of attention, makes him put his mind upon a task and keep it there. It uncovers the intellectual capacity of the nation as nothing else can reveal it, and distinguishes classes of the mentally weak for whom appropriate vocations must patiently be found. In the third place, military training teaches a man that he has duties as well as rights; that he owes his country, if occasion arises, all that he has."



THE BLOOD PRESSURE OF HEALTHY  
MEN AND WOMEN

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This study is based on the record of risks accepted at standard rates by the Mutual Life Insurance Company of New York for the years 1907 to 1919, inclusive. More than 95 per cent. of the readings were taken by our New York City examiners and our medical referees and their immediate assistants. In the earlier years, no readings were taken except by these examiners, but in the later years a few reports were made by our other examiners in the field. These reports amounted to less than 6 per cent in the year 1919. In the earlier years, most of the readings were obtained by palpation, but since 1915 nearly all of them have been taken by auscultation. The readings were taken while the applicant was seated, and the apparatus was at about the level of his heart. A wide cuff was employed, and in most cases the Tycos manometer.

It is well known that the systolic pressure increases with age and with weight, and also that weight increases with age. In order to reach proper conclusions regarding these three variables, age, weight and pressure, it is necessary to separate each age into

However, it was easy to extrapolate reasonable values for them at each age.

In reading across the table, it will be noticed that there is an increase of about 10 mm. between the very light-weight group (8) and the very heavy-weight group (4) in each age period. Also, if we read down each build group, it will be noticed that the pressure increases about 11 or 12 mm. between the youngest and the oldest. Nearly all of this increase comes after the age of 40, for 2 mm. will cover the increase up to that age in most of the build groups.

If we take into account all the factors, especially with regard to the youthful applicants who are classified as light weight and those who are markedly over weight, Table 2 is submitted as representing the systolic pressure that may be expected "on the average" for the corresponding age period and build group in reasonably healthy men in the United States and Canada, unless marked leanness or fatness be considered a sign of ill health. The last column, "All Builds" and the last row, "All ages," represent the average of the preceding figures, as if each group contained the same number of entrants. In most tables, the corresponding averages are affected by the fact that the entrants in different groups vary. Thus, the low average of ages 15 to 19 and 20 to 24 usually is due to the fact that three quarters of their entrants are in the lighter build group. In the original basic material,

TABLE 1.—GENERAL RANGE OF BUILD GROUPS

Height	Build Groups: Weight in Pounds									
	9	8	7	6	0	1	2	3	4	5
5 feet 4 inches.....	90 and under	91 to 104	105 to 118	119 to 132	133 to 147	148 to 161	162 to 175	176 to 189	190 to 210	211 and over
5 feet 8 inches.....	101 and under	102 to 116	117 to 132	133 to 148	149 to 164	165 to 180	181 to 196	197 to 211	212 to 235	236 and over
6 feet 0 inches.....	115 and under	116 to 133	134 to 151	152 to 169	170 to 188	189 to 206	207 to 224	225 to 242	243 to 268	269 and over

weight groups. For convenience, our material has been arranged according to the build groups of the Medico-Actuarial Mortality Investigation.<sup>1</sup> The basis of these groups is the average weight of men for each inch of height at the age of 37. Build Group 0 comprises those within 5 per cent. above and below this standard. Build Group 1 comprises those from 5 to 15 per cent. above the standard; Build Group 2, from 15 to 25 per cent. above the standard; Build Group 3, from 25 to 35 per cent. above; Build Group 4, from 35 to 50 per cent. above, and Build Group 5, those more than 50 per cent. above the standard. Those who are under weight start with Build Group 6, which comprises applicants who are from 5 to 15 per cent. less than the standard. Build Group 7 comprises those who are from 15 to 25 per cent. below standard; Build Group 8, those from 25 to 35 per cent. below, and Build Group 9, those who are more than 35 per cent. below the standard.

Table 1 presents an abridgment of the build groups at the heights 5 feet 4 inches, 5 feet 8 inches, and 6 feet, and indicates the general range of the build groups; the other heights can be interpolated easily.

SYSTOLIC PRESSURE IN MEN

The average systolic pressures among healthy men, when analyzed according to age and build group, are set forth in Table 2. It is based on 150,419 entrants, men only. The largest number entered in the age periods 25 to 29 (27,737) and 30 to 34 (26,892), but even the oldest age period contained 1,889 entrants. The extreme light-weight group (9) and the extreme heavy-weight group (5) contained but few entrants.

from which this table was prepared, the average for age 15 to 19 was 121.2 mm., and for age 20 to 24, 123.4 mm. After that age, the difference is less than 1 mm.

If we eliminate those risks in Table 2 whose pressure is above 140 mm., we get a curious result. We remove only 8,579, or 5.7 per cent., and still leave 141,840 entrants. The general average for all ages and all builds is reduced only 1.3 mm. The averages for the older age groups and the heavier build groups are all markedly lowered. The difference between the systolic pressure in the youngest age period, 121 mm., and in the oldest age period, 129.8 mm., is only 8.8 mm., instead of 12 mm., as before. The marked increase at age 40 also disappears, or at least is postponed until age 55. The differences between the build groups are not so great as before. The systolic pressure in Build Group 4 is lowered to 127.9 mm., while in Build Group 8 it is lowered only 0.4 mm. Evidently, a great number of the differences in Table 2 are due to the inclusion of blood pressures above 140 mm. But there are only 704 entrants whose pressure is above 150 mm., and only 372 of these whose pressure is above 155 mm. The pressure of practically all of those eliminated lay between 141 and 150 mm., inclusive. The larger averages, therefore, in the older age and in the heavier build groups are due to the inclusion of an increasingly larger number of risks whose blood pressures are not unusually high. There is a temptation to regard any systolic pressure above 140 mm. with suspicion, and Rogers and Hunter<sup>2</sup> make a charge for a systolic

1. Medico-Actuarial Mortality Investigation 1: 120-121, 1912.

2. Rogers and Hunter: Proceedings of the Association of Life Insurance Medical Directors 8: 130, 1921-1922.



pressure of 140 mm. up to and including age 35, according to the system of numerical rating in vogue in the New York Life Insurance Company.

Life insurance has furnished the only large collections of reports on the blood pressure of healthy men. A few articles have appeared on the blood pressure of students,<sup>3</sup> of soldiers,<sup>4</sup> and of some other groups, but the ages have been limited usually to those comparatively young. Four excellent reports have been made from life insurance data. One by Dr. J. W. Fisher<sup>5</sup> was made in 1914. A very extensive report was made by Dr. Mackenzie<sup>6</sup> in 1915. Another report

TABLE 2.—SYSTOLIC PRESSURE FOR MEN

Ages	Build Groups										All Builds
	9	8	7	6	5	4	3	2	1	0	
From 15-19	114	116	120	122	123	125	126	128	130	131	123.5
20-24	117	119	121	122	123	125	126	128	130	131	124.2
25-29	117	120	121	123	124	125	126	128	130	131	124.5
30-34	118	120	121	123	124	126	127	129	131	132	125.1
35-39	118	121	122	123	124	126	127	129	131	132	125.3
40-44	119	121	123	124	126	127	129	130	132	133	126.4
45-49	121	122	125	126	127	129	131	132	134	135	128.2
50-54	123	124	126	128	130	131	133	134	136	137	130.2
55-59	126	128	129	131	133	134	137	138	139	140	133.5
60 and over	128	129	132	133	135	136	138	139	140	142	135.2
All ages....	120.1	122.0	124.0	125.5	126.9	128.4	130.0	131.5	133.3	134.4	127.6

was made by Rogers and Hunter,<sup>7</sup> on observations taken during 1913 and to 1916. Another excellent report was made by Goepp<sup>8</sup> on cases arising during 1918. For the individual age periods, Fisher's, Mackenzie's, and Hunter and Rogers' averages are quite close to those set forth in Table 2; but Goepp's are a little lower. He noticed this and thus commented on it:<sup>8</sup>

The thought suggests itself whether the general reduction in the scale of living brought about by war conditions, particularly in the matter of eating and the use of alcohol, may not have had its influences on the averages obtained in the series.

On this hint those risks who were examined at the home office in New York were classified according to years of issue, and the results are set forth in Table 3.

The systolic blood pressure in New York City dropped decidedly in 1917 when we entered the war, and stayed low during 1918 and 1919. It began to rise in 1920, and came back to the prewar level in 1921. In the first five months of this year, it seems to have fallen off a little. In this table, the averages for all ages combined are valuable for comparison, for the age incidence is nearly the same for each year of issue.

The mortality results from this mass of material are not very conclusive. The time that has elapsed since the records were first noted has been so short that the number of deaths in the classes with high pressure or low pressure is very small. Without giving a detailed tabular statement, it may be said that there were 2,906 actual deaths and 3,691.8 expected deaths. This gives a mortality ratio of 79 per cent., and shows excellent selection; for it includes the deaths from influenza and from the war. The lower pressures of 110 mm. and

less showed poor results in the younger age groups, 15 to 29, and very good results in the older age groups, 45 and over. From 110 mm. to 145 mm., the results were good except in the younger age groups, 15 to 29, in which they began to be poor above 140 mm. The results were not good at any age when the systolic pressure was above 145 mm. as compared with the general results. A very few applicants were accepted whose systolic pressure was above 160 mm., and presumably care was taken to see that these applicants were very good in other respects. This class showed very poor results, especially among those who were overweight. The combination of a blood pressure over 160 mm. and any excess weight, as set forth in Table 1, makes distinctly for a high mortality.

#### SYSTOLIC PRESSURE IN WOMEN

The study of systolic pressure in women is based on the women whose blood pressures were reported in the issues of 1907 to 1919, inclusive. The remarks in the opening paragraphs on systolic pressure in men apply equally well here. The total entrants numbered 11,937. Women weigh less than men, and more than 55 per cent. of them are in the lighter weight build groups (6, 7, 8 and 9), while only 40 per cent. of the men are in these groups. The average systolic pressures for women are 1 or 2 mm. less than those for men up to age 40. After 40, the systolic pressures of women are quite equal to those of men, and they may be even 1 or 2 mm. higher.

If we eliminate all the applicants whose systolic pressure is above 140, we get a result similar to that in men. The total number eliminated is only 422, 3.5 per cent., and the average pressure for all is lowered only 0.9 mm. As in the case of men, the older age groups and the heavier build groups show more marked reductions of from 2 to 5 mm., yet these changes are due almost entirely to risks whose pressure is between 141 and 150 mm., inclusive; for there are only thirty-eight women whose pressure is over 150 mm., and only twenty-two of these show a pressure above 155 mm.

TABLE 3.—RESULT OF CLASSIFICATION ACCORDING TO YEARS OF ISSUE

Years of Examination	Number of Entrants	Average Systolic Pressure
1913.....	827	127.5
1914.....	973	126.0
1915.....	832	127.6
1916.....	829	125.4
1917.....	934	122.8
1918.....	883	123.7
1919.....	1,076	123.9
1920.....	1,203	125.4
1921.....	1,338	126.5
1922 to June.....	580	125.2

As in the case of men, these changes depend on the increasing proportion of risks with a pressure of from 141 to 150 mm. in the older age groups and the heavier build groups, and not on the inclusion in these of risks with an unusually high pressure.

#### DIASTOLIC PRESSURE IN MEN

The study of diastolic pressure in men is based on the reports made by our examiners in the years 1916 to 1919. Ninety-five per cent. of these reports on diastolic pressure were furnished by our examiners in New York City and our medical referees and their immediate assistants. All of these were trained to take the diastolic pressure at the very end of the fourth phase, practically just before the beginning of silence.

3. Alvarez, W. C.: Blood Pressure in University Freshmen and Office Patients, Arch. Int. Med. **26**: 381 (Oct.) 1920. Barach, J. H., and Marks, W. L.: Blood-Pressures: Their Relation to Each Other and to Physical Efficiency, *ibid.* **13**: 648 (April) 1914.

4. Smith, Bernard: Blood Pressure Studies of Five Hundred Men, J. A. M. A. **71**: 171 (July 20) 1918. Sorapure, V. E.: Lancet **1**: 841 (Dec. 21) 1918.

5. Fisher, J. W.: Diagnostic Value of the Sphygmomanometer in Examinations for Life Insurance, J. A. M. A. **63**: 1752 (Nov. 14) 1914.

6. Mackenzie, L. F.: Proceedings of Association of Life Insurance Medical Directors, 1915, p. 221.

7. Rogers and Hunter: Proceedings of Association of Life Insurance Medical Directors, Thirtieth Annual Meeting **6**: 92, 1919.

8. Goepp, R. M.: Pennsylvania M. J. **22**: 295 (Feb.) 1919.



Whether this really shows the pressure in the brachial artery after the pulse wave has passed is open to discussion. It calls for the simplest technic, and is determined more easily and regularly than any other point suggested for the diastolic pressure. It is certainly more easily determined than the end of the third phase as the sounds pass into the fourth phase. In many cases, our examiners at the home office find it difficult to determine this change of sounds, and in some cases the fourth phase is entirely absent; but no one finds it hard to detect the last sound. In some abnormal conditions, especially aortic leakage, the sounds continue

TABLE 4.—DIASTOLIC PRESSURE FOR MEN

Ages	Build Groups										All Builds
	9	8	7	6	5	4	3	2	1	0	
From 15-19	75	76	77	78	79	80	81	82	83	84	79.5
20-24	76	77	78	79	80	81	82	83	84	85	80.5
25-29	77	78	79	80	81	82	83	84	85	86	81.5
30-34	78	79	80	81	82	83	84	85	86	87	82.3
35-39	79	80	81	82	83	84	85	86	87	88	83.3
40-44	79	80	81	82	83	84	85	86	87	88	84.0
45-49	80	81	82	83	84	85	86	87	88	89	84.7
50-54	81	82	83	84	85	86	87	88	89	90	85.9
55-59	82	83	84	85	86	87	88	89	90	91	86.8
60 and over	82	83	84	85	86	87	88	89	90	91	86.9
All ages..	78.9	79.9	81.0	82.0	83.0	84.4	85.4	86.0	87.0	87.8	83.5

to very low readings; but in these cases applicants are unhealthy, have not been accepted as standard risks, and are therefore not included in this study. The amount of pressure over which the fourth phase extends is about 2 to 6 mm., usually. As shown by Mackenzie,<sup>9</sup> this range holds true for 75 per cent. of the cases. In 20 per cent. more, it ranges from 7 to 10 mm. If larger, it is doubtful whether the examiners read the fourth point accurately. A wide cuff was used in all cases, and most of the readings were taken on the Tycos manometer. All of the risks were accepted at standard rates.

The diastolic pressure is affected by weight and age just as is the systolic pressure. Table 4, therefore, showing the average diastolic pressure, is arranged similarly to Table 2, and should be read in connection with Table 1. It is based on the records of 60,733 applicants, all men, examined in the years 1916 to 1919 by first-class, well-trained examiners. Reading across the table, it will be noticed that the diastolic pressure increases about 1 mm. for each build group. Reading down a build group, it increases about 7 or 8 mm. from the youngest to the oldest. In proportion to its size, the range of diastolic pressure, both in build groups and in age periods, is nearly as large as that obtained in a study of the systolic pressure. In the diastolic pressure, there is no indication of the distinct rise in the systolic pressure which begins at the age of 40. On the other hand, the total increase in diastolic pressure is just as great proportionately as the total increase in systolic pressure; for the total diastolic increase is about 8 mm., and this is one tenth of the diastolic average, while the total systolic increase is about 12 or 13 mm., and this also is about one tenth of the systolic average.

If we eliminate from Table 4 all persons whose diastolic pressure is 95 mm. and higher, the results are similar to those obtained in a study of the systolic pressure. Only 4,186 cases, 6.9 per cent., are eliminated, and the general average pressure is lowered only 1.3 mm. The large averages in the older age groups and the heavier build groups are much reduced, so that, in

Build Group 0, only 5 mm., and in Build Group 1 only 4 mm. separate the youngest from the oldest. Only 1,308 applicants had a diastolic pressure of 100 mm. and upward, and most of these were just 100 mm. In fact, only 175 had a pressure of 105 mm. and upward. In nearly all of the cases eliminated, therefore, the applicant had a diastolic pressure of from 95 to 100 mm.

DIASTOLIC PRESSURE IN WOMEN

The study of diastolic pressure in women is based on the women entrants who gave a record of the diastolic pressure in the issues of 1916 to 1919. The introductory paragraph in the study of the diastolic pressure of men applies equally well here. The total entrants numbered 5,276. The average diastolic pressures of women are about 1 mm. less than those of men up to age 40. Then for ten years they are about the same, but at the age of 50 they increase quite rapidly, and afterward they are substantially higher than those for men. However, the entrants beyond age 50 were too few to warrant the assumption that this increase over the diastolic pressure in men is certain. It is strengthened, however, by the rise in woman's systolic pressure over man's systolic pressure at the same ages. Perhaps menstruation is responsible for the lower pressures, systolic and diastolic, among women younger than 40, but it does not seem reasonable to consider the menopause the cause of the higher pressures after the age of 50.

PULSE PRESSURE IN MEN

The study of pulse pressure in men is based in part on the preceding data and in part on examinations made at our home office from 1917 to August, 1922, and includes only risks accepted at standard rates. All of the latter readings were taken by auscultation, the subject being seated, with a mercurial manometer at the level of the heart. The diastolic pressure was recorded at the end of the fourth phase, the last distinct sound.

Table 5 shows the cases arranged according to age and build groups. It should be read in connection with Table 1.

TABLE 5.—PULSE PRESSURE FOR MEN

Ages	Build Groups										All Builds
	9	8	7	6	5	4	3	2	1	0	
From 15-19	39	40	43	44	44	45	45	46	47	47	44.0
20-24	41	42	43	43	43	44	44	45	46	46	43.7
25-29	40	42	42	43	43	43	43	44	45	45	43.0
30-34	40	41	41	43	43	43	43	44	45	45	42.8
35-39	39	41	41	42	42	42	42	43	44	44	42.0
40-44	40	41	42	42	43	42	43	43	44	44	42.4
45-49	41	41	43	43	43	43	44	45	46	46	43.4
50-54	42	42	43	43	44	44	45	46	47	47	44.3
55-59	44	45	45	45	46	46	48	49	49	50	46.7
60 and over	46	46	47	47	48	48	49	50	50	52	48.3
All ages..	41.2	42.1	43.0	43.5	43.9	44.0	44.6	45.5	46.2	46.6	44.1

In studying the pulse pressure, we must always remember that it is not a real measure like the systolic and diastolic pressures, but merely the difference between these two. All of its attributes depend on these two real measures. Thus, the slight decrease from the youngest age period up to age 40 is due to the fact that the diastolic pressure increases about 3 mm. during that time, while the systolic increases only about 2 mm. The averages remain about 40 to 44 mm., until age 50, after which they increase markedly. The pulse pressure also rises slightly with increasing weight. Both these phenomena are accounted for by the greater rise in systolic than in diastolic pressure under these conditions.

9. Mackenzie, L. F.: M. Rec. 97: 1029 (June 19) 1920.



Although the average pulse pressure shows little change in the different age periods, the applicants examined at the home office show that the range between the extremes of high and low is much greater than in the systolic or diastolic pressure, in proportion to its size. Thus, the lowest pulse pressure was 20, and the highest, 64. Between 20 and 64 is a range of 44 mm., which is as large as the average pulse pressure for all ages. On the other hand, the range of systolic pressures was from 95 to 160 mm. This represents a gap of 65 mm., which is barely a half of the average systolic pressure. The diastolic range was from 50 to 103 mm., a gap of 53 mm., which is only a little more than half of the average diastolic pressure.

Not only the range of deviation, but also the amount of deviation from the average is much greater in the pulse pressure. This is well shown by the coefficients of variation for the three pressures. The coefficient of variation is obtained by dividing the standard deviation by the average, and is a very good measure of the extent and quantity of the deviations from the average.

The diastolic coefficients (10 for all ages combined) are slightly larger than the systolic (9 for all ages combined), but the coefficients of the pulse pressure (17.7 for all ages combined) are much larger than either of the others. They are more than twice as large as the systolic coefficients in some age periods, and nearly twice as large as the diastolic coefficients. This is not unnatural, since the pulse pressure is the resultant of the two variables, the systolic and the diastolic.

We are all impressed by the fact that the average pulse pressure remains nearly at a level up to age 50, and after that rises only a few millimeters, while both the systolic and the diastolic pressure increase steadily with age, and the increase in millimeters is larger than in the pulse pressure. At first, this seems to indicate that the pulse pressure is the more stable and less liable to erratic fluctuations. But even this stability is fictitious, if we take into account the average number of millimeters in each of the pressures.

This marked variability of the pulse pressure, with a range from 20 to 60 mm. in apparent health, casts some doubt on its clinical significance and its value for insurance purposes. A favorite ratio has been: pulse pressure 1: diastolic pressure 2: systolic pressure 3. This is the so-called 1:2:3 ratio, and is probably derived from the averages. The pulse pressure of 42, which is obtained from a diastolic of 84 and a systolic of 126, is ideal. But is there any reason why a risk should be called unhealthy when the diastolic pressure is 84 and the systolic 104, or when the diastolic is 90 and the systolic 110? Yet in these cases the ratios would be 1:4:5, and 1:4.5:5.5. Should a risk be considered unhealthy when the systolic pressure is 140 and the diastolic, 70? This gives a pulse pressure of 70, and the ratio becomes 1:1:2. Doubtless, these unusual pulse pressures call for very careful examinations of the cardiovascular apparatus. In the last case, the medical examiner should look most carefully for any evidence of aortic leakage, and in both sets of cases for any signs of arteriosclerosis. If he certifies that there is no evidence of any impairment in the heart or vessel after careful examination, applicants presenting these unusual cases should not be regarded as unhealthy. Perhaps it may be said that a pulse pressure less than 30 mm. or larger than 56 mm. should be regarded as a warning signal to examine the heart and vessels with great care; but otherwise its value to us

for life insurance seems quite limited. Much research will have to be made and many facts accumulated before it can be determined whether it has any real significance.

The pulse pressures of women are 1 or 2 mm. less than men's throughout life. In the younger ages, this is due to the fact that woman's systolic pressure is lowered more than her diastolic in proportion to man's. In the ages above 50, on the other hand, her diastolic pressure is raised more than the systolic proportionately.

An effort has been made to use the product of the pulse pressure and the pulse rate as an index of the work of the heart. Addis has written an excellent paper on this product.<sup>10</sup> Before it can be used for insurance purposes, it will have to be studied carefully. He says:

The striking difference between the averages of normal individuals under basal and daytime conditions are the clearest illustration of the necessity for uniformity in the conditions under which the observations are made. It is not possible to use the basal normal for the evaluation of pressures obtained in patients in the morning if they have been out of bed even for a moment. The normal values for daytime measurements cannot be taken as a standard for observations made on patients who are standing or sitting, or on those who have just walked up a flight of stairs. The variability of normal blood pressure under such conditions is not known.

All of his readings were taken with the subject lying down, while practically all insurance records are taken with the subject sitting up. His coefficients of variation for systolic pressure were 11 for basal and 13 for daytime; for diastolic pressure, 14 for both basal and daytime; and for pulse pressure, 30 for basal and 28 for daytime. These coefficients are decidedly larger than those obtained in our study, and they tend to show that the blood pressure in all aspects is more variable when the subject is lying than when he is sitting. Perhaps some of his "normal" cases, which numbered only 300, would be classified as idiopathic vascular hypertension, described by O'Hare.<sup>11</sup> A careful reading of papers by O'Hare, Addis and others has convinced me that the method of obtaining the blood pressure as followed by insurance companies is trustworthy and reliable for persons in average good health. Doubtless, food, exercise and excitement have some effect; but they are rarely sufficient to raise the blood pressure in a healthy man above the point of acceptance by a life insurance company. If an applicant's blood pressure is too high at the first examination and remains so, after he has been properly soothed and quieted, it does not often come down to acceptable figures at a second examination, unless treatment is taken. Very few readings are so low on account of dread of the examination as to need a second test, for life insurance has become a commonplace to most applicants.

#### SUMMARY

1. The systolic pressures of healthy men are set forth in Table 2, which is to be read in connection with Table 1. They increase decidedly, both with age and with weight. Nearly half of the increase from age and weight both is due to the increasing proportion of systolic pressures between 141 and 150 mm. In connection with the use of a numerical rating, as is the practice of the New York Life Insurance Company, which charges an excess rating for a systolic pres-

10. Addis, Thomas: Blood Pressure and Pulse Rate Levels; Levels Under Basal and Daytime Conditions, *Arch. Int. Med.* **29**: 539 (April) 1922; Blood Pressure and Pulse Rate Reactions, *ibid.* **30**: 240 (Aug.) 1922.

11. O'Hare, J. P.: *Am. J. M. Sc.* **159**: 369 (March) 1920.



sure of 140 mm. in the ages below 40, a question arises whether any systolic pressure above 140 mm. should not be suspected of pathologic possibilities. The mortality ratios do not definitely prove this, but, for pressures above 145 mm., they indicate it strongly. The results obtained by Dr. J. W. Fisher<sup>12</sup> corroborate this view.

Pressures below 100 mm. are rare in life insurance. They will usually be found in the very young and thin, and life insurance has shown that the applicant presenting the combination of youth, thinness and a pressure below 100 is prone to tuberculosis. To some extent this holds true also for those having a pressure below 110. Among those who are not young, these low pressures do not seem to be associated with increased mortality. In fact, the mortality ratios indicate that low pressure after age 45 is desirable. This is of great interest, for the average systolic pressure begins to increase decidedly at that age. It would seem that the average pressure runs counter to the best interests of health. In that respect, it resembles weight; for the average weight increases with age, while the lowest mortality after age 45 is found among those who are 15 per cent. lighter than the average weight.

The systolic pressures of healthy women are a little lower than man's up to age 40, partly for the reason that women weigh less up to this age. After that, they are a little higher than man's, and they behave like man's with reference to pressures over 140 mm.

2. The diastolic pressures of healthy men are set forth in Table 4, which should be read in connection with Table 1. They increase with weight and age in about the same proportion as the systolic pressure. It is possible that a diastolic pressure above 94 mm. is in the danger zone.

The diastolic pressures of healthy women are a trifle lower than man's up to age 40, and a trifle higher after age 50.

3. The pulse pressures of healthy men are set forth in Table 5. As it is not a real measure, but merely the difference between the systolic and diastolic pressures, all of its attributes depend on these. It is very variable, and its value to life insurance seems to be merely incidental and not substantial.

Probably life insurance and general medicine will never regard blood pressures in the same light. Life insurance sees only persons who are healthy, or at least think they are. Even the highest pressure of fat, elderly persons is below 140 mm. on the average, if they are acceptable for life insurance. This also means that practically as many are below 140 mm. as above, and we have seen that, of those above 140 mm., nearly all of them are below 150 mm. General medicine, on the other hand, sees those who feel that they are sick. If their illness is due to abnormal blood pressure, it is usually high, frequently as high as 200 mm. or more. General medicine knows that these high pressures will come down to 170 mm. or 180 mm. by appropriate treatment, and many of the patients will live for years. But medicine does not realize that a small increase in the number of deaths each year means a great difference to life insurance. At age 50, we expect only fourteen to die in the following year out of 1,000 living, and we call that 100 per cent. mortality. If twenty-eight die, our mortality jumps up to 200 per cent. At age 60, if the number of deaths among 1,000 living

increases from 26.69 to 40.04, the mortality increases to 150 per cent. If a practitioner should see 1,000 patients with high blood pressure at age 60, and wager with himself that 974 would survive the year and only 960 did survive, he would not feel downcast. In fact, he would probably point to the record with pride and boast of his ability in prognosis. But life insurance would have to tell him that his mortality was 150 per cent. in that group, and a medical director who did not make a better guess than that would not hold his position long. General medicine would look complacently at the living, but life insurance would ruefully regard the dead, for forty claims would have to be paid instead of the twenty-six expected.

34 Nassau Street.

## PERICARDITIS CALCULOSA

### REPORT OF A NEW CASE DISCOVERED ROENTGENOLOGICALLY \*

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Rarely does the roentgen-ray examiner stumble onto anything more interesting and startling than the revelation of a calcareous deposit in the pericardium. This relatively rare deposit of lime salts, occurring in a regular or irregular manner on the surface of the heart, sometimes loosely spoken of as "ossification" and "bone" in the pericardium, is more properly designated as pericarditic calcification or pericarditis calculosa. The calcium deposit, composed of the phosphate combined with small amounts of the carbonate and a trace of sodium, usually is confined to the pericardium; but it may extend into the substance of the heart.

There have been published several excellent summaries of our knowledge of the pathology and symptomatology of this rare condition, notably those by Diemer,<sup>1</sup> Jones,<sup>2</sup> Mitchell,<sup>3</sup> Klason<sup>4</sup> and Mueller.<sup>5</sup> The total number of cases found reported in the literature prior to 1922 is ninety. To these I have a new case to append.

#### REPORT OF CASE

Mrs. Z. R., aged 45, housewife, whose family history was negative, in childhood suffered from measles, mumps, whooping cough, and what was thought to be a light attack of scarlet fever. The menses were always irregular and scanty, and ceased entirely at 25. She was married at 18 and had one confinement, which was normal. Except for constipation, her health had been good until the death of her son in France in 1919. At this time she suffered a collapse, followed shortly by swelling of the abdomen and the left side of the neck. The urine had always been scanty. Abdominal distention continued until July, 1920, when 8 quarts (liters) of fluid were removed by paracentesis. She was tapped again in September, 1920, and had been tapped subsequently at intervals of from seven to ten weeks. On account of her physician's apprehension regarding her kidneys, the patient had lived on a low-protein diet ever since her collapse. Physical weakness had grown very marked. Some shortness of breath had been noted.

\* From the Surgical Department of the Battle Creek Sanitarium.

1. Diemer, F.: Ueber Kalkablagerungen an den serösen Häuten des Herzens, *Ztschr. f. Heilk.* 20: 257, 1899.

2. Jones, A. E.: Lithemia, *Charlotte M. J.*, March, 1901.

3. Mitchell, J. H.: Calcification of the Pericardium, *Tr. Chicago Path. Soc.* 8: 109, 1909-1912.

4. Klason, T.: Pericarditis calculosa und Herzverkalkungen, *Acta radiol.* 1, Pt. 2: 162-170, 1921.

5. Mueller, E. F.: Perikarditische Verkalkungen, *Fortschr. a. d. Geb. d. Röntgenstrahlen* 25: 231, 1918.

12. Fisher, J. W.: *Proceedings of Association of Life Insurance Medical Directors* 7: 21, 1920-1921; 1915-1916, p. 203.



The blood pressure was 112 systolic and 70 diastolic. The height was 58 inches (147 cm.); the weight, 112 pounds (51 kg.) after tapping.

The temperature was 98.6 F.; the pulse, 84. The teeth were in a bad state; pyorrhea was marked. The left cervical and axillary glands were enlarged.

There was decreased resonance over the lower half of both lungs posteriorly, accompanied by râles suggesting a chronic venous congestion.

Liver dulness was moderately increased. No irregularities were palpable along the lower margin of the liver, or revealed on the upper border of the liver shadow during fluoroscopic study. No splenic enlargement was found.

Pelvic examination revealed a urethral caruncle; a small, atrophic uterus; the fundus not palpable. Rectal examination was negative except for evidences of mucous colitis.

The bones and joints were normal. The pupillary reflexes were normal; the patellar reflexes were absent.

There was moderate edema of the legs extending to the ankles, although, when questioned, the patient stated that she had not noted the occurrence of such a symptom before.

Urine examination revealed from none to two hyaline casts, an occasional trace of albumin, persistently low specific gravity and scanty urine, the average twenty-four-hour specimen being 600 c.c.

Blood study revealed: hemoglobin, 70; red cells, 3,010,000; leukocytes, 12,000; blood Wassermann reaction, negative; nonprotein nitrogen, 28.4; blood sugar, 90.

The alveolar carbon dioxide tension was 38; acetone, 0.

A barium meal study gave normal findings for the stomach and intestine except for marked colonic stasis, for which no organic obstruction could be found aside from marked spasticity of the terminal colon. The emptying time of the colon was much longer than seventy-two hours, in spite of cleansing enemas. It was felt that the barium meal study excluded the presence of malignant disease in the gastro-intestinal tract.

The patient complained of marked cardiac palpitation, which she thought was due to the pressure of the distended abdomen. There was no precordial tenderness. The apex beat was palpable in the fifth interspace. Cardiac dulness on percussion extended 8 cm. to the left of the midline. The heart sounds were fairly distinct. No murmurs were heard at the apex. A slight systolic sound was heard at the base. In the erect position the heart sounds were distinct; the murmur was not increased. The heart action was irregular. The physical examination elaborated by the electrocardiogram led to a diagnosis, by Dr. M. A. Mortenson, of myocardial degeneration, with evidence of auricular fibrillation and myocardial inefficiency.

Thus far in the study of this case, no suggestion had been offered as to any other unusual condition of the heart, although the patient's chest had been examined fluoroscopically in connection with the barium meal as well as during the usual entrance examination given all new patients. The costophrenic angles were noted as clear, the diaphragm showing normal excursion on both sides. At this juncture a review of the roentgen-ray findings was requested, and I was fortunate in observing a very unusual shadow in connection with the heart, apparently pulsating with the cardiac contractions, yet in the periphery of the cardiac shadow. In the left side of the

heart shadow there was an area of calcification, lying in the pericardium in the form of an ovoid patch, 8 cm. in diameter, occupying the anterior and inferior surface of the left aspect of the cardiac outline. Careful study of the stereoscopic roentgenograms made in several positions gives one the impression that this irregularly calcareous patch is flat and suggestive of a piece of "armor plate." An estimation of the calcium content of the blood was then made by Clark's method, with a resulting figure of 6.1 mg. of calcium for each hundred cubic centimeters of blood, which is a little lower than the normal figures, from 7 to 10 mg. (Dr. W. B. Lewis).

For nearly a year the patient has continued treatment aimed principally at the cardiac, renal and hepatic inefficiency. She has been tapped at irregular intervals, on the whole less frequently than before. The weight and strength have increased. The urinary output continues scanty and of low specific gravity. Edema of the lower extremities and a general appearance of puffiness continue in spite of the treatment.

The clinical diagnosis is: myocardial degeneration with auricular fibrillation; pericardiac calcification; chronic nephritis; the syndrome of hepatic cirrhosis with ascites.

#### COMMENT

Numerous points of great clinical interest present themselves for discussion in connection with this condition. As before suggested, less than a hundred such cases are on record, and the great majority of these were discovered accidentally at necropsy. Various authors writing prior to 1899 declared that the diagnosis had never been made on the living patient and, indeed, could never be made except accidentally from the introduction of a knife. In a series of thirty-eight cases reported by Jones<sup>2</sup> in 1901, only one case is mentioned as being diagnosed as adherent pericardium during life, although pericardial synechia is constant in pericarditis calculosa.

The possibility of discovering pericardial calcification roentgenologically was suggested by Diemer<sup>1</sup> in 1899, and by Simmonds<sup>6</sup> and by Lydtin<sup>7</sup> in 1907. It remained for Schwarz<sup>8</sup> of Vienna to realize this possibility in 1910 when he reported a case in which fluoroscopy of the thorax revealed within the heart outline a number of denser shadows which moved coincidentally with the cardiac pulsations. The largest of these measured 2 by 3 cm., and occupied the left and anterior border of the pericardium. The patient had no symptoms relative to the heart, but some years previously had suffered a severe blow on the precordial region.

In 1911, Schwarz<sup>9</sup> discovered a second case in a woman, aged 33, with enlargement of the liver and ascites, but without edema of the lower extremities. Screen examination of the thorax revealed a denser, pulsating, finger-wide shadow extending from the left



Fig. 1.—Heart of author's patient.

6. Simmonds: Fortschr. a. d. Geb. d. Röntgenstrahlen 12, 1907.  
7. Lydtin: Diss., München, 1907.  
8. Schwarz, G.: Wien. klin. Wchnschr. 23: 1850, 1910.  
9. Schwarz, G.: Wien. klin. Wchnschr. 24: 1386, 1911.



apex at the lower border of the heart shadow upward toward the middle line.

Groedel,<sup>10</sup> in 1911, also recorded a case of pericardial calcification discovered fluoroscopically, the shadow in this instance likewise occupying the left side of the heart, anteriorly, along the auriculoventricular border.

Rieder,<sup>11</sup> in 1913, recorded two cases similar to the foregoing, discovered during fluoroscopy. In one of these, however, the calcification was first found during the third fluoroscopic examination. Later plate examination established the fact that a dense deposit of lime had occurred between the auricle and the ventricle, parallel with the left border of the heart, extending from the apex upward toward the middle line; and that there were numerous less dense radiating shadows branching off from the principal calcareous deposit, forming a sort of network. Lateral and oblique screen study disclosed, further, that the densities extended along the anterior and inferior borders of the heart, the posterior border being entirely free from calcification.

Alfred Weil,<sup>12</sup> in 1916, reported a case of "armored heart" occurring in a young soldier exhibiting the clinical picture of Pick's pericarditic pseudocirrhosis of the liver. The anterior and inferior surfaces of the ventricles were encircled by a crust of lime. There was a gap in the mail-like calcareous coat at the apex into which the heart seemed to be forced, perhaps accounting for the diastolic scratching heard with greatest distinctness just at the apex. The first complaints, three years previous, were increasing dyspnea on exertion, and abdominal distention. At that time clinical examination established cardiac dilatation, hepatic enlargement and ascites, and occasional edema in the lower extremities. Under appropriate treatment, he was able to resume light work. The calcareous deposits were at first overlooked, being found only when the patient was later subjected to roentgen study.

Klason<sup>4</sup> of Stockholm, in 1921, cited two other cases found roentgenologically by Brauer and by Assmann, and added five additional heretofore unreported cases of pericarditis calculosa, three of them discovered accidentally during postmortem studies, the other two found roentgenologically in the living patient. Figure 2, an illustration borrowed from Klason, is a roentgenogram of the heart in the living patient, showing the distribution of the calcareous accumulations.

I have thus been able to obtain literature concerning eleven<sup>13</sup> cases of calculous pericarditis discovered in the living patient, thanks to the roentgen examination, and the case herewith detailed constitutes the twelfth.

Calcareous deposits in the endocardium and myocardium have long been recognized at the necropsy table, but the likelihood of such calcifications being discovered roentgenologically is extremely remote. On the other hand, the gross pericardial lime incrustations recognized at necropsy as long ago as 1724 should be found roentgenologically without serious technical difficulty. It is true that the condition is rare, only about ninety cases being recorded up to date. Wells,<sup>14</sup> in 1902, reported four cases of "calcific pericarditis" out of 1,048 necropsies at Rush Medical College. Cham-

bers<sup>15</sup> found that in five out of eighty-six cases of adherent pericardium, formation of "bony" material had taken place in the old fibrin. It is likely that the number of reported cases will rapidly increase now that the roentgen rays are coming into such general use in clinical examinations.

#### AGE AND SEX

The average age at which the condition under discussion occurs was 48.4 years in fifty cases studied by Jones.<sup>2</sup> The youngest patient was 11 and the oldest 91. These cases were all discovered at necropsy, however. With the aid of roentgenology, many cases are being discovered antemortem in younger patients. The proportion of males to females is as two or three to one.

#### ETIOLOGY

Various causes have been suggested. The insidious onset of symptoms renders it probable that inflammatory products may be gradually converted into calcified tissue. It is significant that almost without exception the visceral and parietal layers of the pericardium are united by a plastic process, in which the calcareous deposit occurs. There is a total obliteration of the pericardial cavity. Impaired circulation is probably an important factor; other calcifying factors are decreased metabolism, necrobiosis and tissue necrosis. A number of the cases cited above give a history of pericarditis, pleurisy or some undetermined "trouble" in the chest. It was only rarely, though, that a diagnosis of adherent pericardium was made during the life of the patient. Careful attention to certain details of fluoroscopic technic emphasized by Klason,<sup>4</sup> referred to later, may increase the number of diagnoses of synechia pericardii.

#### DISTRIBUTION

The lime deposits occur especially over the anterior and inferior aspects of the ventricles, while the auricles are rarely affected. This may be due to a circulatory condition. Virchow,<sup>16</sup> in 1858, considered that the distinct calcifications found in the lungs, stomach, kidneys, intestines and blood vessels were due to a superabundance of lime salts in the blood, and that inadequate renal elimination might also be a causative factor, as many of these cases are associated with advanced renal disease. Virchow thought that the deposits occurred more frequently in organs rich in blood supply. Von Recklinghausen,<sup>17</sup> contrary to Virchow, considered that calcification occurred in tissues poor in blood supply, and that calcification could proceed when the calcium content of the blood was normal. Wells<sup>14</sup> showed that frank calcification might occur in the absence of any discoverable pathologic etiology. Galleani,<sup>18</sup> by injection of mercuric chlorid into the kidney substance of a rabbit, produced a lesion exhibiting calcification after undergoing a fibrous necrosis. Litten<sup>19</sup> produced a similar lesion in the renal tubules by ligation of the renal artery.

Bernardie,<sup>20</sup> in discussing calcification of uterine myomas, brought forward very interesting data supporting the theory that calcification of fibroids is the result of some form of necrobiosis associated with a progressively diminishing blood supply. Peraire<sup>21</sup>

10. Groedel, F. M.: *Fortschr. a. d. Geb. d. Röntgenstrahlen* **16**, 1911.

11. Rieder, H.: *Fortschr. a. d. Geb. d. Röntgenstrahlen* **20**: 50, 1913.

12. Weil, Alfred: *Armored Heart and Pick's Hepatic Cirrhosis*, *Fortschr. a. d. Geb. d. Röntgenstrahlen* **23**: 489 (No. 6) 1916.

13. Schwarz, two; Groedel, one; Rieder, two; Weil, one; Brauer, one; Assmann, one; Klason, two; Mueller, one.

14. Wells, H. G.: *The Pathology of the Healed Fibrous Adhesions of the Pericardium*, *Am. J. M. Sc.* **123**: 241, 1902.

15. Chambers, quoted by Jones (Footnote 2).

16. Virchow, Rudolph: *Cellular Pathology*, New York, 1859.

17. Von Recklinghausen, quoted by Klotz: *J. Exper. Med.*, 1895, p. 633.

18. Galleani: *Lo Sperimentali* **58**: 371, 1904.

19. Litten. *Ztschr. f. klin. Med.*, 1879.

20. Bernardie, A.: *Thèse de Paris*, 1901.

21. Peraire: *Tr. Soc. anatomique*, Paris, 1909, p. 151.



states that calcification of an intra-uterine pedunculated fibroid is very rare because its blood supply remains adequate.

It is conceivable that the process may begin as a serofibrinous or fibrinous pericarditis. During the production of the reactive granulation tissue there is a reduction of the blood supply to the fibrinous masses, which, when not absorbed, may remain imprisoned for a long time. Such dead masses in which the circulation is very slow and insufficient have a decided tendency to undergo calcification (Klason). Naturally, the lime would accumulate in those regions of the pericardium subjected to the least disturbance from the contractions of the chambers of the heart.

Various infections have been noted in the histories or in the necropsy reports in many of the cases of pericarditic calcification, notably tuberculosis, *Streptococcus viridans* infection, typhoid, and pyorrhea alveolaris. "Rheumatism" is frequently referred to in the histories.

In the case here reported, the calcium content of the blood was just below the figures given as normal by Clark,<sup>22</sup> and by Halverson, Mohler and Bergeim.<sup>23</sup> These writers obtained values lying between 9 and 11 mg. of calcium for each hundred cubic centimeters in normal cases, with distinct decreases in patients suffering from hematogenous jaundice, eclampsia, pneumonia, and particularly anemia and severe nephritis. In my patient there are definite evidences of a long standing renal inefficiency, and a calcium value of 6.1 mg. for each hundred cubic centimeters of blood by Clark's method. Diemer<sup>1</sup> reiterates that a slowing of the circulation favors the process of calcification, and under such circumstances an abnormally high calcium content of the blood does not play an important rôle.

#### DESCRIPTION

The descriptions of the calcareous deposits vary slightly. Some have been described in the preceding pages. The following quotations are from other previously reported necropsy cases:

The visceral surface of the pericardium was lined with irregular, ragged calcareous masses; the parietal surface on the inside had a smooth calcareous plate measuring 7 by 3 cm.<sup>2</sup>

22. Clark, G. W.: The Micro-Determination of Calcium in Whole Blood, Plasma, and Serum by Direct Precipitation, *J. Biol. Chem.* **49**: 487 (Dec.) 1921.

23. Halverson, J. O.; Mohler, H. K., and Bergeim, Olaf: The Determination of Small Amounts of Calcium, Particularly in Blood, *J. Biol. Chem.* **22**: 159 (Nov.) 1917; The Calcium Content of the Blood Serum in Certain Pathological Conditions, *ibid.* **32**: 171 (Nov.) 1917.

There was a thin, calcified band across the front of the ventricles, which ran with the convex margin toward the apex; along the right border this band extended up to the right auricular appendix. Posteriorly there was a broader band which was attached to both the diaphragm and the heart.<sup>24</sup>

Douglas and Yates<sup>24</sup> state that the condition undoubtedly began as a purulent pericarditis; absorption took place, but in a ring, and calcification followed.

The pericardial sac was entirely obliterated and the membrane enormously thickened. Because of the thick calcareous plate which had formed in the pericardium, it was impossible to open the heart in the ordinary way.<sup>25</sup>

There were adhesions of the pleura, and the layers of the pericardium were universally adherent. Over the right auricle anteriorly and over the posterior part of the left ventricle, there was a calcareous plate, dense, hard, over 12 cm. broad, and from 6 to 10 mm. in thickness. The anterior wall of the left ventricle was free.<sup>26</sup>

With the tissue of the pericardium there was found an extensive deposit of calcareous matter which covered the whole anterior surface and about half the posterior. The thickest part of the deposit occurred where the pericardium unites with the central tendon of the diaphragm. As it extended upward in two parts, the deposit gradually became thinner. The inner surface of the pericardium was roughened in spots by the concretion. . . . The arch of the aorta presented a calcified surface 6.5 sq.cm. in area. There was also calcareous degeneration of the internal carotid, the vertebral and the ophthalmic arteries.<sup>27</sup>

Both pleural cavities obliterated by adhesions. Pericardium adherent to anterior chest wall and adjoining mediastinal tissue. Pericardial cavity entirely obliterated and the seat of extensive calcareous infiltration. A large section of the heart was encased in a hard calcareous sheath, which impli-

cated the pericardium of the right ventricle, about one half of the anterior and under surface of the right auricle, the left edge of the heart, and the lower two thirds of the left ventricle, the apex and the diaphragmatic surface of the heart. This calcareous sheath appeared to be made up of a single calcareous plate.<sup>28</sup>

Both pleural cavities obliterated. . . . The pericardial cavity was entirely obliterated and largely calcareous, the calcified mass being in the left half of the pericardium anteriorly and posteriorly, and on the under or diaphragmatic surface. There was a hornlike projection from this calcareous plate which extended out in front of the inferior vena cava



Fig. 2.—Heart of Klason's patient.

24. Douglas, M., and Yates, A. G.: A Case of Calcification of the Pericardium, *J. Path. & Bacteriol.* **18**: 120, 1913-1914.

25. Simpson, F. O.: Calcification of the Pericardium, *J. Ment. Sc.* **48**: 529, 1902.

26. Bruen, E. T.: Extensive Calcareous Deposit in the Pericardium, *Tr. Path. Soc. Philadelphia* **14**: 153, 1887-1889.

27. Fenn, C. T.: Calcareous Degeneration of the Pericardium, *Chicago M. J.* **25**: 321, 1868.

28. Kelly, A. O. J.: On multiple Serositis: The Association of Chronic Obliterative Pericarditis with Ascites, etc., *Am. J. M. Sc.* **125**: 116, 1903.



so that it partially surrounded its diaphragmatic opening [youth, aged 19].<sup>29</sup>

The heart was normal in size; the only portion of the ventricle free from a calcareous covering was a part about 2 cm. in diameter at the left anterior and inferior angle. The heart muscle was infiltrated with calcareous material. Both layers of the pericardium were welded together and formed an irregular calcareous casing for the heart. In its thickest part this covering was 18 mm. thick. There was a ridge of exceptional hardness around the interauriculo-ventricular groove.<sup>30</sup>

Pericardial sac obliterated, the two layers being united; large calcareous deposits in the pericardium around the base and especially over the inferior vena cava [girl, aged 13].<sup>31</sup>

Pericardium and epicardium grown together. On section it was found that a hard ring of varying width, following the course of the sulcus circularis, surrounded the entire heart. The thickest part of this ring was a calcareous deposit which covered the surface of the right auricle, extending on both sides toward the right and left ventricle. The deposit of calcium showed the amorphous, not the crystallized form.<sup>1</sup>

There was a ring-shaped calcareous deposit in the pericardium; on the left border of the heart the ring was closed by a strip of material of lighter consistency.<sup>1</sup>

The two layers of the pericardium were bound together by a membrane of connective tissue. At certain points along the coronal sulcus, instead of the connective tissue a calcareous plaque 2.0 to 2.5 mm. thick lay between the two layers attached to both, surrounding the heart in the form of a ring of varying width.<sup>32</sup>

The layers of the pericardium were closely adherent. On section, a calcareous strip was found crossing the posterior wall of the left ventricle, forming a plaque under the mitral valve, surrounding the base of the ventricles in a complete ring.<sup>33</sup>

Review of the foregoing excerpts from the reports on postmortem material suggests at once the frequency of an associated or preceding pericarditis, and in many instances evidence of old involvement of the pleura, especially that covering the diaphragm. It is also evident that the presence of the calcareous deposit in the pericardium masks the physical signs and renders more difficult than usual the diagnosis of adherent pericardium. From the roentgenologic standpoint the following may be suggested as signs of pericarditis adhesiva: (a) a triangular shaped heart; (b) disappearance of the boundaries between the various heart chambers, usually made out fluoroscopically; (c) diminished excursion of the edge of the cardiac shadow during heart action, and (d) diminished mobility of the heart in relation to the diaphragm with the patient in the lateral positions.

#### TECHNICAL DETAILS FOR ROENTGENOLOGIC STUDY

The roentgenologic study of pericarditis calcuosa should be carried out both with the screen and with plates. Several cases, finally discovered, went through repeated plate and screen study before the diagnosis was made.

Klason<sup>4</sup> believes the fluoroscopic study more valuable than the roentgenographic. True, one can vary the penetration of the ray employed and can turn the patient in various directions more easily and economically with the screen than with the plate method. I prefer a combination of screen and roentgenographic examination, though in the case reported in this paper

I discovered the calcified pericardium while repeating a part of the barium meal study. Such a case impresses very forcibly the lesson that no fluoroscopic observation should ever be attempted until after the eyes have been thoroughly prepared for screen observations by a long preliminary stay in the dark.

#### CONCLUSION

It is hoped that the foregoing report and discussion may stimulate renewed interest in and search for calcareous depositions in the pericardium. Such calcifications, which must remain unsuspected before a roentgen-ray examination, are of great importance, for a heart shackled by a pericardial calcareous shell must be seriously hampered in its action. The discovery of this rare and interesting complication will add light to many cases with circulatory disturbances, ascitic manifestations and hepatic cirrhosis.

### MENACE OF THE DIAGNOSTIC THROAT CULTURE IN DIPHTHERIA \*

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The etiologic relationship between diphtheria and the diphtheria bacillus has been established beyond cavil. It may seem a platitude to assert that the disease known as human diphtheria is the reaction of the body to the toxin of the diphtheria bacillus. The unfortunate annual succession of tragedies witnessed at the Willard Parker Hospital, traceable to lack of clear thinking on this point, have forced us to emphasize the fact that the presence of diphtheria organisms in the throat is not synonymous with diphtheria, and that the failure to find diphtheria organisms in culture tubes inoculated from swabs passed over the mucous membranes of the throat does not exclude the presence of diphtheria. In the interests of clear medical thinking, we wish to emphasize the fallacies that may result from the throat culture diagnosis of diphtheria, and the dangers consequent upon delay in making the diagnosis from a laboratory report instead of from the clinical picture.

#### FALLACIES

The presence of a virulent culture of diphtheria bacilli may be reported from the throats of sick or of healthy persons who are carriers. From a public health standpoint, the detection of carriers is a matter of great importance, and it interests us as practicing physicians. Fifteen per cent. of all children in great cities are immune carriers of diphtheria organisms and are therefore deprived of hospital care by the usual procedure. Shick testing and immunization would obviate this. The absence of diphtheria bacilli in throat cultures taken from patients ill of diphtheria has been the subject of special investigation. In the taking of cultures from more than a hundred patients admitted to the diphtheria service at Willard Parker Hospital, the usual superficial culture was taken in two tubes, as well as a deep culture, the swab being placed between the

29. Herrick, J. B.: Pericarditic Pseudo-Cirrhosis of the Liver, *Tr. Chicago Path. Soc.* 5: 71, 1901-1903.

30. Lucas, J. J. S.: Pericardial Calcification, 2: 1404, 1907.

31. Bennion, J. M.: A Case of Adhesive Mediastino-Pericarditis, *Brit. M. J.* 1: 316, 1906.

32. Rozza, F.: Pericarditis calcuosa, *Pest. med.-chir. Presse* 34: 636, 1898.

33. Pellasse, M.: Péricardite calcifiante avec signes de rétrécissement mitral, *Lyon méd.* 111: 509, 1908.

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membrane and the tissue. One of the superficial cultures was sent to the diagnostic laboratories of the board of health. The other was sent, in order to avoid chilling and delay in incubation, to the pavilion laboratory, and was examined by one of us. In our laboratory, we obtained 3 per cent. more positive cultures than the health department laboratory, which reported no growth in cases in which we obtained diphtheria bacilli. We obtained 12 per cent. more positive cultures from *under* the membrane than from the usual superficial culture.

#### DANGERS OF DEPENDING ON THE DIAGNOSTIC CULTURE

The dangers of depending on the diagnostic culture may be presented both statistically and by the report of individual cases. In diphtheria, the factors involved

TABLE 1.—PRIMARY CULTURES OF ONE HUNDRED PATIENTS WITH CLINICAL DIPHTHERIA

	Culture Positive Per Cent.
Surface, department laboratory.....	80
Surface, pavilion laboratory.....	86
Under membrane, pavilion laboratory.....	98

in any case are the virulence of the organism and the natural resistance of the patient. This may seem to be another platitude; but all statistics involving the duration of illness must be read with this knowledge. As a rule, patients with diphtheria enter our institution as soon as the diagnosis is made. For the last three years, our mortality (excluding laryngeal cases) has been: during the first twenty-four hours, from 27 to 30 per cent.; during the first forty-eight hours, 14 per cent.; for more than forty-eight hours, 54 per cent. The average period of illness in the fatal cases, without antitoxin before admission, was four and one-half days. The mortality in 300 cases, considered in respect to the number of days before treatment was administered, was: first day, 0; second day, 0.01 (on admission, all three patients had a complicating bronchopneumonia); third day, 0.02 (three patients with myocarditis: one, laryngeal and two, bronchopneumonia); fourth day, 0.026 (five, diphtheria, toxic); fifth day, 0.03 (straight diphtheria, toxic); sixth day or later, 0.04 (straight diphtheria, toxic).

Delay in the administration of antitoxin is chargeable (1) to parents who fail to summon competent medical attention through an attempt at lay diagnosis or through a misinterpretation of symptoms, and (2) to physicians who fail to read a clinical picture, and thrust the burden of diagnosis on the laboratory. The most aggravated case of this kind was that of a man who was under a physician's care for eleven days and died after the membrane had been permitted to extend to the bronchi because frequent cultures taken in the usual way were negative. Six other cases were recently observed at the hospital:

#### REPORT OF CASES

CASE 1.—J. C., a girl, aged 6, had been ill four days before admission. The family physician had seen her on the second day of her illness. All that day she had complained of sore throat, and her mother said she had had a high fever. The family physician diagnosed acute tonsillitis, and cultures were taken the following day. No antitoxin was given, as the report on the culture was negative. The patient became worse, and on the fourth day was sent to the Willard Parker Hospital.

On examination, there was a characteristic odor of the breath, profuse serosanguineous nasal discharge, and membrane on both tonsils and the uvula, soft palate and posterior pharyngeal wall. The patient appeared toxic. She received antitoxin intravenously. Nevertheless, there occurred severe nasal hemorrhages and cardiac arrhythmia; and she died on the nineteenth day of her illness.

Even in cases which are not fatal, the late administration of antitoxin subjects the patients to prolongation of their illness, and at times protracted or permanent crippling of the heart, or nervous system, as these cases show:

CASE 2.—S. A., a girl, aged 2½ years, who was ill six days before admission, was finally sent in on the advice of a consulting pediatrician. The patient had been seen by three physicians. Each in his turn had taken a culture, and all were negative; the child was getting worse, and the membrane had spread down the larynx. On admission, the patient was toxic. There was marked intercostal retraction, nasal discharge with excoriation, and a throat full of exudate, and the posterior or pharyngeal wall was lined with sloughing membrane. Laryngoscopy revealed a larynx blocked with membrane covering the aryepiglottic folds, arytenoids and vocal cords. There was also a subglottic membrane. On the fifth day, 10,000 units of antitoxin had been given intramuscularly; and 30,000 units was given on admission. In the hospital, throat and nose cultures revealed diphtheria bacilli.

CASE 3.—P. D., a nurse, aged 22, was ill five days before admission. The onset had been gradual, the chief complaints being sore throat, malaise and a slight rise in temperature. On the second day of her illness, she consulted a nose and throat specialist, and he took a throat culture. On the following day, Klebs-Loeffler bacilli were reported, and the patient was referred to the Willard Parker Hospital. On admission, she was seriously ill, complaining of sore throat, headache and dysphagia. She was slightly dyspneic. The tissues of the neck were swollen and tender. The throat was full of diphtheritic exudate, covering the tonsils and pillars. The uvula was edematous and congested. The temperature was 102 F., the pulse, 108. She received a massive dose of antitoxin intravenously, from which there was a severe reaction in two hours. Recovery was slow. This patient subsequently developed a palatal paralysis, with regurgitation, cardiac arrhythmia and moderate degeneration of the heart muscle. She remained in the hospital fifty-four days.

TABLE 2.—THREE HUNDRED CASES OF DIPHTHERIA

Days Ill Before Treatment	Number of Cases	Mortality Per Cent.
1	80	0
2	79	3.6
3	64	6.4
4	36	13.9
5	21	23
6 and over	20	25

CASE 4.—A. Q., a nurse, aged 30, had been ill four days before admission. The tonsils, uvula, soft palate and posterior pharyngeal wall were covered with membrane. A throat specialist treated her for Vincent's angina because a throat smear had revealed the spirillum and bacillus of Vincent's angina. The membrane continued to spread, and a second culture revealed Klebs-Loeffler bacilli. She was then given 10,000 units of antitoxin intramuscularly. On admission, she was moderately prostrated. Breathing was difficult because of the throat obstruction. The temperature was 103 F. The appearance was toxic. She received antitoxin intravenously without reaction. Subsequently, there developed palatine paralysis and cardiac arrhythmia.

CASE 5.—S. S., a charge nurse in a hospital, had been ill two days. Diagnosis and treatment waited another twenty-four hours for a culture report. The patient was admitted with a severe angina, dyspnea and inability to swallow. She was prostrated. The tonsils, palate, pharynx and uvula were covered with exudate. Antitoxin was administered intra-



muscularly and intravenously on admission. She was in the hospital for a month, and suffered subsequently for many months from heart weakness as the result of her illness.

CASE 6.—Dr. W. C., aged 57, was admitted, March 16, 1922, and was in the hospital for five months. He had been ill four days before admission. For three days, it was thought that he had an acute tonsillitis. On the third day, a culture was taken, and Klebs-Loeffler bacilli were reported twenty-four hours later. He then received 10,000 units of antitoxin intramuscularly, before going to the hospital. In our admitting room, he received an additional 10,000 units intravenously, and 20,000 units intramuscularly. A membranous exudate covered both tonsils and posterior pharyngeal walls, the uvula and the lateral two thirds of the soft palate. There was marked bilateral swelling of the neck. The anterior and posterior cervical lymph nodes were enlarged. His appearance was extremely toxic. Nine days after admission, he developed nasal voice and regurgitation. Subsequently, there developed a peripheral neuritis, with weakness, paresthesia, anesthesia, loss of knee jerks, and pain. There was also diplopia. Finally there developed paralysis of bladder control, which necessitated catheterization for a month.

#### COMMENT

This severe and dangerous illness and the costly loss of time are in contrast to the usual course of diphtheria promptly recognized and treated. Most of our patients leave the hospital well, on the twelfth day.

Even at the risk of retelling an oft-told tale, we shall recount the reaction of the human body to diphtheria toxin. Diphtheria toxin is an agent destructive to the chromaffin tissues. It is a capillary poison, at first stimulating the capillaries to contract, and later causing them to dilate, with hemorrhages.

#### LOCAL AND GENERAL PHENOMENA

The clinical picture resulting from reaction to the toxin may be divided into the local and general phenomena.

*Local Symptoms.*—There is a necrotic membrane surrounded by adjacent redness, and with pallor beyond. The designation of the disease is descriptive of the membrane which the Greeks called *διφθέρα*, meaning wash-leather. It is reminiscent of the ancient process of puering skins. Early pastoral people digested the elastic fibers of sheep and goat skins with the pancreatic extract contained in the dung of dogs or fowl. This softens the leather and makes it chamois-like; it also accounts for the offensive odor and the color frequently associated with such leathers. The diphtheria membrane is shaggy, is greenish yellow, has a characteristic offensive odor, and when it is removed there is bleeding. An adequate illumination is essential; the patient must be made to gag so as to avert the tonsils. A careless inspection of the throat or nose is unpardonable.

The lymph nodes in relation to the membrane are enlarged, and if the process lasts there is considerable perinodular edema and puffiness. The nodes become matted together. Other local symptoms depend on the location of the membrane. There may be obstruction of the nose, nasopharynx, pharynx or larynx.

*General Symptoms.*—These are due to the stimulation of the sympathetic nerve system. The pulse is always rapid, frequently disproportionately so when the temperature rise is considered. Often the temperature rises so little that it may mislead those who measure the severity of an illness with a thermometer. At times, there is a chill and a sharp rise of temperature at the onset; but the pulse is always rapid, and continues so unless appropriate treatment is instituted.

In neglected cases, there is a general pallor and, later, hemorrhage into the skin or from the mucous membranes, with progressive, profound weakness.

It must not be forgotten that pus organisms may become pathogenic simultaneously with diphtheria bacilli, and that the reaction of the body to them may complicate the clinical picture.

When in doubt as to the correct interpretation of symptoms, it is better to give antitoxin needlessly than to err by waiting for a laboratory report.

The report from the laboratory adds nothing decisive to the diagnosis.

## TRANSPLANTATION OF TENSOR FASCIAE FEMORIS IN CASES OF WEAKENED GLUTEUS MEDIUS

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The limp caused by a weak gluteus medius with marked swaying of the body toward the involved side, and dropping of the hip on the opposite side (Trendelenburg sign) is very noticeable in many cases of poliomyelitis.



Fig. 1.—Normal anatomic appearance about the hip. The black line along the tensor fasciae femoris represents the incision made in freeing this muscle before transplantation.

In the endeavor to alleviate this limp, I devised the plan of transplanting the tensor fasciae femoris muscle into the outer side of the femur to increase the power in the gluteus medius.

The tensor fasciae femoris is to some extent an abductor, but its greater power is in flexion. A function



of the gluteus medius often overlooked is its action in holding the center of gravity of the body over the supporting leg when standing on one foot. We are all familiar with the action of the gluteus maximus in holding the body erect and preventing the trunk from falling forward, but it is not generally recognized that the gluteus medius is equally necessary to keep the body

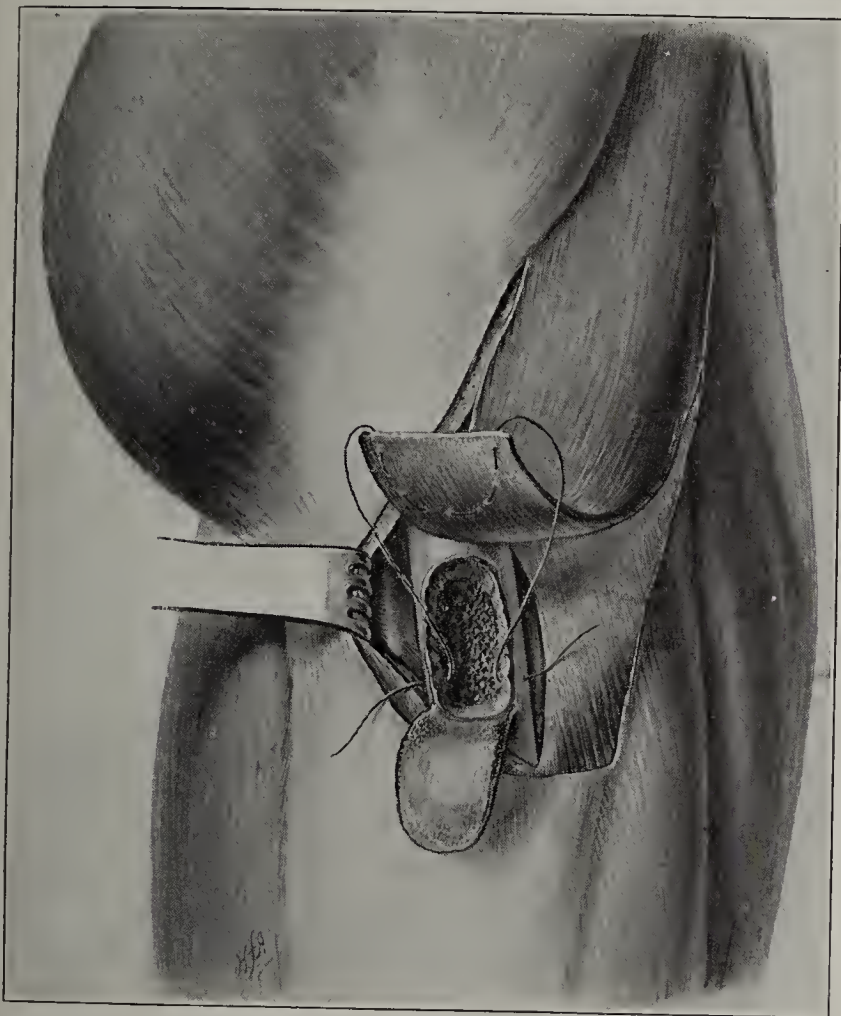


Fig. 2.—Groove in femur and freed tensor fasciae femoris with silk suture before insertion into the femur.

from falling to the opposite side whenever the weight is borne on one leg. Inability of the gluteus medius to perform this function causes a limp. There is either a dropping of the pelvis on the opposite side, similar to the Trendelenburg sign, which is an awkward gait, difficult to overcome, or else it results in an attempt to bring the center of gravity over the supporting leg by throwing the body to that side and reaching out with that arm, in the typical and distressing abductor limp.

#### METHOD OF PERFORMING OPERATION

The incision starts at the anterior superior spine, and extends backward and downward over the great trochanter, and then downward along the course of the femur for about 3 inches.

The skin with the subcutaneous fat is reflected forward, exposing the fascia lata.

Anteriorly, running downward from the anterior superior spine, the fascia lata is seen to become thin before extending over Scarpa's triangle. Along this line the fascia is incised downward from the anterior superior spine to 3 inches below the great trochanter, where it is divided transversely backward for about 1½ inches.

At about 1½ inches below the great trochanter, the fibers of the tensor fasciae femoris are seen becoming inserted into the fascia lata.

The outer surface of the femur is next exposed, about 2½ inches below the trochanter, by dividing the fibers of the vastus externus. A periosteal flap is turned downward at this point, and a groove, going into the marrow, is made about 1 inch long and one-half inch wide.

The free end of the fascia lata is then sutured with No. 18 twisted silk and inserted into the groove by carrying the silk ends through holes drilled in the femur on each side of the groove. The knot is tied over the fascia in the groove, and the periosteal flap is turned back and sutured over the groove containing the fascia.

Before the suture of the silk is completed, the thigh is abducted about 30 degrees, and the fascia is seen to have moderate tension.

The skin and subcutaneous fat flap are then turned back and sutured by layers to their original situation.

A plaster spica is applied from the waist to the ankle, with the leg in 30 degrees' abduction.

The postoperative treatment consists of simple superficial massage after two weeks, and muscle training is begun after four weeks. The patient is allowed to go about with the spica and crutches at the end of four weeks.

At the end of two months the spica is removed and an abduction walking splint applied, which the patient wears for six months.

#### SUCCESS OF OPERATION

So gratifying have been the results of this operation that I have now performed fifteen such operations with very satisfactory results in most cases. The Trendelenburg sign has disappeared and the lateral swaying of the body has markedly diminished, if not disappeared.

The success of the operation depends largely on a careful choice of suitable cases. It will not be of great benefit in cases in which the limp is due to weakness of both the gluteus maximus and the gluteus medius. These patients find it necessary to sway the body backward as well as to the side, diagonally, in order to preserve their equilibrium, and the backward sway due to the weak gluteus maximus will remain after the operation, proving fully as unsightly as the original limp.

It is also important to distinguish whether the dropping of the pelvis is due to weakness of the gluteus

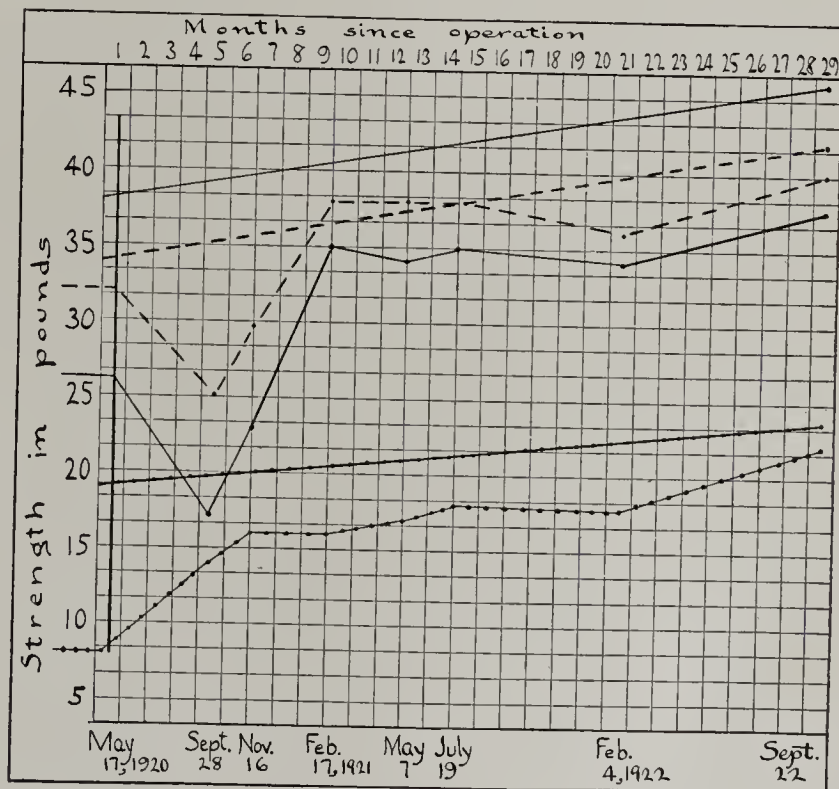


Fig. 3.—Postoperative gain of power in abduction in a case that showed a weakened gluteus medius—diminished power in abduction of the hip—with slight weakness in flexion and extension. Straight solid line, normal flexion; solid curve, postoperative flexion; straight broken line, normal extension; broken curve, postoperative extension; straight beaded line, normal abduction; beaded curve, postoperative abduction. The operation was performed, May 17, 1920.

medius, or whether it is the result of weakened lateral abdominal muscles. In the latter case, it will not be prevented by transplanting the tensor fasciae femoris to increase abductor power.



In suitable cases, beside the gain in abductor power and the improvement of the limp, I believe that the operation will give increased muscle support to the hip joint, and so tend to prevent the dislocations that frequently occur in cases of poliomyelitis with much involvement of the muscles around the hip.

535 Beacon Street.

## OTITIC ABSCESS OF THE CEREBELLUM

REPORT OF CASE \*

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CHICAGO

Abscess of the cerebellum secondary to suppurative otitic disease is rare, but is of more frequent occurrence than is generally supposed. Not infrequently, cases of suppurative otitic disease in which intracranial complications are suspected, will reveal the presence of a cerebellar abscess on surgical exploration or at necropsy. The case here reported is of especial interest, (1) to show the difficulties in diagnosis (some cases will give few, if any, localizing signs); (2) because a cerebellar abscess was found on surgical exploration of the posterior cranial fossa, and (3) because the necropsy report was added to the clinical record, thereby making the case record complete.

### REPORT OF CASE

*History.*—F. P., a man, aged 43, single, entered the Cook County Hospital, Jan. 29, 1922, with the diagnosis of influenza. His previous history revealed that he had had a chronic suppurative otitis media, involving the right ear, for the preceding eighteen years. The present complaint began two weeks before with headache, which was almost continuous and involved the frontal and occipital regions and was associated with earache. Two days before, he had had a very severe chill, which lasted twenty minutes. He stated that during the past two weeks he had had attacks of vertigo, which were associated with falling to the right, but unaccompanied by nausea or vomiting.

*Examination.*—The canal of the right ear was filled with cheesy material, together with a fetid serosanguineous discharge. No mastoid tenderness was present. There was marked stiffness and a tendency toward retraction of the neck. No pathologic reflexes were present. Blood pressure was 130 systolic and 85 diastolic. Blood examination revealed hemoglobin, 98 per cent.; red cells, 5,664,000; color index, 87 per cent.; white cells, 8,700. Urine examination was negative. Spinal puncture revealed fluid under increased pressure, and 20 c.c. was removed. It was turbid and globulin was strongly increased as shown by Pandy, Nonne and Ross-Jones tests. The cell count was 3,110 per cubic millimeter, with 96 per cent. polymorphonuclear and 4 per cent. small mononuclear cells. An intracellular diplococcus was occasionally seen, none being found with the Gram stain. The spinal and blood Wassermann tests were negative. At this time a diagnosis of epidemic meningitis was made, 35 c.c. of spinal fluid was withdrawn and 30 c.c. of antimeningococcic serum was given intraspinally.

January 30, the temperature was 99 F.; the pulse, 94, and respiration, 30. Another spinal puncture was made, and 40 c.c. of spinal fluid was removed. The fluid was under increased pressure; the cell count was 1,240 per cubic millimeter. Intracellular diplococci were not found. Culture of the spinal fluid revealed a gram-negative bacillus, which was probably due to contamination. Thirty cubic centimeters of antimeningococcic serum was given intraspinally.

January 31, the patient's mentality was clear. The neck was more rigid, and the Kernig sign was bilaterally present.

There was tenderness over the right mastoid. A roentgenogram of the right mastoid was cloudy.

The patient was examined by Dr. Sidney Strauss, who reported that the stiffness of the neck and findings in the spinal fluid pointed to a meningitis. The absence of cerebral symptoms and leukocytosis, with the low temperature, left the etiology in doubt. The possibility of tuberculous meningitis had to be considered.

Functional tests disclosed deafness of the right ear; in the Weber test the sound was lateralized on the left; the Rinne test was negative, and the Schwabach test revealed diminution. The caloric test showed that the right labyrinth was functioning, but was impaired.

In consultation with Dr. Sidney Strauss, it was decided to explore the right mastoid region. This revealed a very dense, sclerotic mastoid, the only cell found being the antral cell. This was undoubtedly an example of arrested development of pneumatization of the mastoid. The lateral sinus and the dura over the tegmen, on exposure, were normal. A radical mastoid operation without the plastic stage was done.

February 1, the temperature was 99; the pulse, 100. There was cervical rigidity, but no abnormal reflexes were present. The spinal fluid was cloudy, under increased pressure. Globulin tests were positive, and the cell count was 2,300.

February 6, drainage from the mastoid wound and external auditory canal was profuse. White blood cells numbered 14,400. The condition was much improved. The temperature was 99.8 F. The spinal fluid was clear; the cell count, 510, the cells being mostly polymorphonuclear. Globulin tests were negative.

February 8, the temperature was 98.4 F.; the respiration, 22; the pulse, 84. The condition was improving; drainage was considerable. The spinal fluid was under moderately increased pressure and turbid; globulin tests positive. The cell count 1,880 per cubic millimeter.

Examination by Dr. Hassin revealed that mentality, the cranial nerves, reflexes and sensibility were normal. There was nystagmus on looking to the right. Rigidity of the neck, Brudzinski, and Kernig signs were absent. Neurologic examination did not reveal any involvement of the brain or meninges. The only indication of meningeal involvement was the turbidity of the spinal fluid, and this might well have been due to a focal irritation. Functional hearing tests revealed complete absence of function of the cochlear and vestibular branches of the eighth cranial nerve. The patient did not hear tuning forks or the Galton whistle with the right ear. Douching the right ear with cold water at 68 F. for four minutes failed to give any definite response. There was spontaneous nystagmus to the right; on looking toward the left, there was slight diagonal nystagmus to the left. Examination of the ocular fundi was negative.

February 16, the temperature was 99 F., the pulse, 88. The general condition had not changed. Reexamination by Dr. Hassin revealed that there was involvement of all the peripheral branches of the right facial nerve. The right corneal and conjunctival reflexes were diminished. There was slight deviation of the tongue to the right. No sensory facial disturbances were detected. The mental condition was fair. Muscle power was good. There was probably pressure on the seventh, twelfth and fifth nerves at the point where they leave the pons. Exploration for an extradural abscess was advised.

February 17, the temperature was 98 F., the pulse, 72. The pulse became as low as 60 and the patient very stuporous. There were no neck rigidity and no additional palsies.

*Operation.*—The right cerebrum and cerebellum were explored for brain abscess. The tegmen tympani and antrum being exposed, a brain searcher was inserted into the temporo-sphenoidal lobe with a negative result. The searcher was then introduced posteriorly to the lateral sinus, inferiorly enough to enter the posterior fossa, and inserted in the direction of the internal auditory meatus. This resulted in locating an abscess in the right lobe of the cerebellum from which about 15 c.c. of thick, greenish yellow, fetid pus was evacuated. Gutta serena and gauze drainage was established.

February 18, the temperature was 100 F., the pulse, 80. The patient did not regain consciousness, and died in coma.

\* From the otolaryngologic service, Cook County Hospital.



*Anatomic Diagnosis.*—This was: suppurative otitis media; recent surgical incision of the skin behind the right ear; part of the temporal bone (mastoid operation) missing; abscess of the right lobe of the cerebellum; hyperemia of the cerebellum; traumatic perforation of the right temporal lobe (exploratory operation); turbid spinal fluid; marked hyperemia and edema of the brain.

Bacteriologic examination of the spinal fluid removed at necropsy revealed a pure culture of hemolytic streptococci.

Histopathologic examination of the temporal bone by the pathologist, Dr. W. B. Moody, did not reveal any apparent pathologic changes in the labyrinth.

#### COMMENT

At the time of the first exploration of the mastoid region, when no pathologic condition was found sufficient to account for the sympathetic meningitis, it was a serious mistake not to explore the middle and posterior cranial fossae for the presence of a brain abscess. Had exploration of the cerebellum been made at that time, the fatal result might have been avoided, since seventeen days elapsed between the first operation and the finding and drainage of the cerebellar abscess. This case serves to emphasize a statement made in a recent article:<sup>1</sup>

The presence, and especially the persistence, of a sympathetic meningitis, when there is associated an otitic focus of infection, in the absence of sinus thrombosis, perisinuous abscess or extradural abscess, denotes the presence of some intracranial suppuration, as subdural abscess or cerebral or cerebellar abscess, and calls for an immediate operative exploration of the middle and posterior cranial fossae.

The clinical course subsequent to the first operation misled us into believing that the patient was getting better, and thereby too long postponed the second operation.

This case also serves to emphasize the point that cases in which there is more or less complete arrest of pneumatization of the temporal bone are especially predisposed to the development of suppurative intracranial complications. It also illustrates that sympathetic meningitis may be the precursor of diffuse suppurative leptomeningitis. The history of vertigo, with falling to the right, should have suggested at least the possibility of a right cerebellar lesion.

In conclusion, I might point out that this was a metastatic abscess of the cerebellum, as the result of a hematogenous infection from the middle ear, by way of the general circulation.

25 East Washington Street.

1. Yerger, C. F.: Meningitis of Otic Origin, J. A. M. A. 79: 1924 (Dec. 2) 1922.

*Gold and Oxygen.*—Gold is unquestionably a very useful metal to man; it is the sign of riches, of the savings amassed by labor. Coined into money, it passes from hand to hand and is good in all exchanges, in all commercial transactions. It is a splendid part to play, I admit; but if gold were to disappear entirely from the earth, what would happen? Nothing very serious. Banks might be inconvenienced, commerce upset for a little while, but that is all. The world would soon move on as before. Suppose, on the other hand, one of these three metalloids, whose names you have just learned—oxygen, for example—should disappear. Immediately everything on earth would die, from the biggest animal to the tiniest worm; all plant life would perish, from the giant of the forest to the smallest thread of moss. Life would henceforth be impossible and this inhabited globe become a gloomy solitude, with man, animal, and plant forever banished. That as you see, would be a far more serious disaster than the inconvenience of a banker or the vexation of a merchant.—Fabre: The Wonder Book of Chemistry.

## SPECIFIC TREATMENT OF HAY-FEVER DURING THE ATTACK

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The present treatment of autumnal hay-fever consists in graded prophylactic inoculations of that pollen extract to which the patient is most sensitive, at weekly or more frequent intervals, from the latter part of May until the onset of the pollen season. The inoculations are then discontinued. In a certain percentage of patients so treated, there ensues either complete freedom from hay-fever or great amelioration of symptoms. A not inconsiderable proportion, however, experience little or no improvement, and a few apparently develop more severe attacks than in the years in which they received no prophylactic treatment.

In those cases showing little or no improvement, Walker<sup>1</sup> states that pollen extract injections may be continued, but in smaller amounts, given at the same intervals (from five to seven days). He finds that in some cases the symptoms are made worse by the injection of pollen extract during the hay-fever season.

MacKenzie<sup>2</sup> has reported slightly better results in prophylactic treatment by combining with the parenteral administration of the pollen extract local instillations on the nasal mucosa, in gradually increasing concentration.

Even then, there are many patients experiencing little or no improvement. It is with the latter refractory group that this report has to deal.

#### REPORT OF CASES

CASE 1.—Miss R., aged 21, seen, June 16, 1922, had had hay-fever for the preceding four years, with onset about the middle of August and continuing until the first frost. At the age of 11, she had suffered recurrent attacks of asthma, which she believed she had only in the summer months. This condition had existed for only two seasons, and there had been no recurrence. In 1920 and 1921, the patient had received prophylactic hay-fever inoculations, but she had never been tested for sensitization by the cutaneous reactions.

From the routine examination, the diagnosis of (1) hay-fever and (2) nonorganic cardiac murmur was made. The patient reacted very strongly (four plus) to short ragweed and to daisy, mildly to sunflower (two plus), very mildly to giant ragweed (one plus) and negatively to the remainder of the pollen proteins with which she was tested. She was next tested with various dilutions of short ragweed, and gave a distinct reaction with dilutions as high as 1:10,000. Prophylactic inoculation with short ragweed was commenced, June 16, and the routine recommended by Walker was strictly followed. June 29, daily nasal sprays were started, and continued according to the procedure described by MacKenzie. July 31, the patient gave a negative reaction to short ragweed in a dilution of 1:5,000, and a very mild reaction to a dilution of 1:1,000. Two days later, she developed a typical attack of severe hay-fever. She was visiting in Massachusetts at the time, and the symptoms persisted until her return to Richmond, August 14, when they rapidly subsided. The patient remained symptom free until August 24, when she again became ill with a typical severe hay-fever. The eyes were swollen nearly shut, with a semipurulent secretion, and there was much sneezing, hydrorrhea and malaise. The patient was immediately started on daily subcutaneous inoculations of 0.25 c.c. of a ragweed pollen extract containing 10 mg. of protein nitrogen per hundred cubic centimeters. After three days, the symptoms improved definitely, and by

1. Walker, I. C.: Frequent Causes and Treatment of Seasonal Hay-Fever, Arch. Int. Med. 28: 71 (July) 1921.

2. MacKenzie, G. M.: Desensitization of Hay-Fever Patients by Specific Local Applications, J. A. M. A. 78: 787 (March 18) 1922.



August 30 she was entirely free from symptoms. Daily inoculations of the same amount were continued until September 8, when the patient left town for a period. Treatment was discontinued at that time, and she remained symptom free.

CASE 2.—Miss V., aged 36, a schoolteacher, seen, June 9, 1922, had had autumnal hay-fever for thirty-one years. Usually, the disease had been accompanied by mild asthmatic attacks. Diagnosis was made of (1) hay-fever and (2) gingivitis. The patient gave a four plus reaction to short ragweed, two plus to daisy and sunflower, one plus to orchard grass, and questionable reaction to giant ragweed and timothy. She reacted negatively to corn pollen, goldenrod, walnut and willow. When tested with dilutions of short ragweed, she gave a very mild reaction to 1:5,000, and none to 1:10,000.

Treatment was started, June 15, and administered both hypodermically and by nasal spray, as described in Case 1. July 15, the skin tests revealed little diminution in sensitization. August 22, the patient had three or four sneezing spells with a little cough and a very mild conjunctivitis. The extract was discontinued. No special treatment was given, and after three days, symptoms subsided entirely. September 1, the patient moved into another apartment and worked all day in a dust laden atmosphere. She began to sneeze immediately, and for four days had mild symptoms of hay-fever, with sneezing, coryza and conjunctivitis. September 6, daily inoculations in the amount given in Case 1 were started. These were continued until September 16. The patient improved after the first treatment, and remained symptom free throughout this period. Inoculations were then discontinued for two days, with return of mild symptoms. Daily injections were again instituted with double the dose, again with almost immediate improvement. September 23, the patient was doing splendidly, and inoculations were reduced in frequency to every third day. This was continued until October 3, when treatment was discontinued entirely. The patient remained symptom free throughout the remainder of the hay-fever season, during which time several of her friends who were suffering from the same disease continued with their typical symptoms.

CASE 3.—Mr. B., aged 30, seen, June 27, 1922, was given tests with the various pollens. He gave a four-plus reaction to short ragweed, and a two plus reaction to giant ragweed, daisy and corn pollen. Reaction to short ragweed in a dilution of 1:10,000 was strongly positive. Treatment was given as in Cases 1 and 2, and, July 31, he gave a negative reaction to a 1:5,000 and a mildly positive reaction to a 1:500 dilution.

With the onset of the pollen season, August 20, the patient had three days of severe symptoms, with subsequent complete recovery. Inoculations were discontinued, but through a misunderstanding the patient continued using his nasal sprays in a concentration of 10 mg. of protein nitrogen per hundred cubic centimeters. About September 1, mild symptoms recurred, and the spray was discontinued. Symptoms persisted for a week, when daily inoculations of 0.25 c.c. were started. Improvement was noted within twenty-four hours, and continued steadily until, after five days, all symptoms had disappeared except that the nose was stopped up a little at night, though not sufficiently to interfere with sleep. The patient stated that he sneezed on an average once or twice in twenty-four hours. Daily inoculations of 0.25 c.c. were continued until September 19, throughout which time the patient remained symptom free. Treatment was then discontinued, without recurrence of symptoms.

CASE 4.—B., a schoolboy, aged 14, first seen, Sept. 2, 1922, was suffering from a typical severe attack of hay-fever, his first attack. There was nothing noteworthy in the history other than that he had had a tonsillectomy one month previously. The patient's father, who was a physician, had sent him to two internists, who reported that they could do nothing other than give him symptomatic treatment, but suggested that the patient could probably be immunized against an attack next year.

He gave a three plus reaction to short ragweed, two plus to goldenrod, and one plus to daisy. Because of the apparent success in the first case described, I considered it worth

while to attempt daily inoculations of small amounts of ragweed pollen extract. Daily injections were started with 0.25 c.c., containing 10 mg. of protein nitrogen per hundred cubic centimeters. The treatment was continued at home by his father, and, September 9, he reported the condition greatly improved. Daily inoculations were continued for a few days longer, after which they were decreased to every second day, later to every third day, and finally discontinued, the patient remaining greatly improved, according to his father's report.

CASE 5.—Dr. S., aged 33, seen, Oct. 17, 1922, for the preceding two weeks had had his first attack of hay-fever. He noted that immediately on leaving the Shenandoah Valley on his way to Richmond, the symptoms subsided. With the exception of the local condition, nothing noteworthy was observed in the physical examination. Cutaneous tests with the various pollen proteins were made, and the reaction was found negative to all except corn pollen.

The patient was advised to remain for a few weeks in a locality in which he would be free from symptoms. This being impossible, he returned home. Symptoms immediately recurred, and daily inoculations were instituted with complete relief after the second dose. Immediately on the termination of treatment after the first heavy frost, symptoms returned and persisted until inoculations were recommenced. Injections were now reduced in frequency to every second day, then to every third day, and around the end of November were discontinued, with no return of the trouble.

The long persistence of the attack in this case is readily explained by the extreme mildness of the winter, such that until the end of November, the farmers were able to continue their work in fields and barns. In the rural community in which the patient lived, there was undoubtedly sufficient dust from corn to cause reaction.

The patient has remained symptom free until the present time, with the exception of the last week in December, when he had three or four days of rhinitis, with sneezing, conjunctivitis, etc. This followed the eating of some corn.

#### SUMMARY AND CONCLUSIONS

In three cases of autumnal hay-fever with sensitization to short ragweed, the patient had been desensitized by the routine commonly followed, both parenteral injection and nasal instillation being employed. One patient developed hay-fever in a very severe form; while two were decidedly improved but not symptom free, after the onset of the pollen season. In all three cases, symptoms cleared up almost entirely following daily subcutaneous injections of small amounts of ragweed pollen extract.

A fourth patient, a boy who had developed hay-fever for the first time and had had no preventive inoculations, did equally well following daily subcutaneous treatment. The frequency of inoculations was gradually reduced in this case, the patient remaining greatly improved.

A similar case is reported, with sensitization to corn pollen.

If we may assume, from our meager knowledge of the immunology of this disease, that relief of symptoms following preventive inoculation is due to an increased tolerance (as in morphinism) rather than a true immunization, and that the condition resulting is one of so-called antianaphylaxis, the daily administration of small amounts would appear to be a more logical procedure than the giving of larger amounts at much longer intervals.

During the pollen season, the nasal mucosa is bearing the brunt of the allergic reaction. The administration of pollen elsewhere, as through the skin, would theoretically distribute the reaction throughout the other tissues, thereby relieving to some extent the intensity of the local reaction.



In the method of treatment suggested, those patients who have not been improved by prophylactic treatment may become either greatly improved or symptom free by continuation of the treatment during the pollen season.

According to the method proposed, patients presenting themselves for the first time during the pollen season, and without previous treatment, may be treated by specific measures, with considerable hope of relief.

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## CHILLS FOLLOWING TRANSFUSION OF BLOOD

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Transfusion of blood, when used with proper precautions, is a comparatively safe procedure; but when used indiscriminately and without proper consideration of technic and indications, blood transfusion can be followed by most serious complications, even by death.

The safety with which blood transfusion can be used in a variety of diseases is based mainly on Landsteiner's discovery of the blood groups. Landsteiner,<sup>1</sup> in 1900, demonstrated that human beings and certain animals can be classified in three different groups. A fourth group was added by Jansky<sup>2</sup> in 1907. This work of Landsteiner is the foundation underlying the modern development of blood transfusion.

As compared with the preliminary testing of donor and recipient, the technic of blood transfusion, i. e., the method to be applied in a given case, is of minor importance. Any method (syringe, stopcock, paraffinized glass cylinders, sodium citrate) is applicable, provided it is possible to measure exactly the amount of the transfused blood.

### THREE FACTORS IN POSTTRANSFUSION CHILLS

In spite of the fact that blood transfusion, when properly applied, is void of danger, the posttransfusion chill is an unavoidable and sometimes very unpleasant sequel to transfusion. Posttransfusion chills are encountered in a considerable number of cases, no matter what method is used. In an attempt to analyze these chills in order to avoid them, or to reduce their number and severity, three factors must be considered: (1) tests; (2) methods of transfusion, and (3) the condition of the patient.

1. *Tests*.—It is of the utmost importance that the tests be performed with expert precision. The interpretation of the tests is usually simple. However, in some cases it requires extensive experience to reach proper conclusions as to the compatibility of the tested bloods. The importance of this point is best illustrated by the results reported by Lindeman.<sup>3</sup> In 1914, he reported 150 transfusions by his syringe-cannula method with 33 per cent. of chills. He had performed all the transfusions himself, but the tests had been made by different men. By supervising all the tests personally, he was able in 1916<sup>4</sup> to report 146 trans-

fusions with only 9 per cent. of chills. The best results are obtained by the direct matching of the blood of the donor and the recipient. Group matching, though very popular on account of the ease of execution, is not as accurate, and is apt to be followed by a larger number of chills.

The recipient must again be tested, if the transfusion is to be repeated. The fact that a recipient may change his group after a transfusion was first observed by Libman and Ottenberg.<sup>5</sup> Lately, Astrowe<sup>6</sup> has called attention to this very important fact, which is not generally known. It is of the utmost importance in the avoidance of chills and other more serious complications.

Eden<sup>7</sup> has proved that the blood grouping of a patient may be temporarily changed after the administration of certain drugs (quinin, antipyrin, etc.) and after an anesthetic. The curious effect of anesthesia on blood grouping was observed independently by Levine and Segall.<sup>8</sup>

2. *Technic*.—In considering the different methods of blood transfusion, with regard to posttransfusion chills, it must be stated that the number of chills is much more dependent on care in technic than on the choice of method. Whatever method is used, chills will be encountered in a fairly large percentage of cases, unless the strictest adherence to careful technic is observed.

It has been stated that the sodium citrate method of blood transfusion, which I<sup>9</sup> introduced in 1915, was followed by too many chills, as compared with other methods. Nevertheless, study of the literature on this subject gives evidence that the percentage of chills is about the same for all the different methods. Meleney, Stearns, Fortune and Ferry,<sup>10</sup> comparing the Lindeman syringe method with the citrate method, found no difference in the frequency of chills. Ravdin and Glenn<sup>11</sup> encountered as many chills with the paraffinized glass cylinders as with the sodium citrate method.

The syringe stopcock method of Unger,<sup>12</sup> according to the records of Mount Sinai Hospital for 1922, was followed by more chills than the sodium citrate method (see below).

The question of the number of chills which follow the different methods of blood transfusion cannot be answered by the results of those who have become expert in one particular method. They are apt to have a special skill with this method, which will automatically reduce the number of chills. Thus, Lindeman,<sup>13</sup> in 1919, reported 214 consecutive transfusions without a chill, whereas, in 1914, he had encountered 33 per cent. of chills in 150 transfusions. While Lindeman attributed his remarkable results to careful supervision of tests, I think that the improvement of his technic was a contributory factor.

5. Libman and Ottenberg: Recent Observations on Blood Transfusions, Tr. Coll. Phys., Philadelphia **39**:266, 1917.

6. Astrowe, P. S.: Hemolysis Following Transfusion, J. A. M. A. **79**:1511 (Oct. 28) 1922.

7. Eden, R.: Bedeutung der gruppenweisen Haemagglutination für die freie Transplantation und über die Veränderung der Agglutinationsgruppen durch Medikamente, Narkose, Röntgenbestrahlung, Deutsch. med. Wchnschr. **48**:85 (Jan. 19) 1922.

8. Levine, E. C., and Segall, H. N.: Posttransfusion Reactions, Surg., Gynec. & Obst. **35**:313 (Sept.) 1922.

9. Lewisoohn, Richard: A New and Greatly Simplified Method of Blood Transfusion, M. Rec. **87**:141, 1915.

10. Meleney, Stearns, Fortune and Ferry: Posttransfusion Reactions, Am. J. M. Sc. **154**:733 (Nov.) 1917.

11. Ravdin, I. S., and Glenn, E.: Transfusion of Blood, with Report of 186 Transfusions, Am. J. M. Sc. **61**:705 (May) 1921.

12. Unger, L. J.: A New Method of Syringe Transfusion, J. A. M. A. **64**:582 (Feb. 13) 1915.

13. Lindeman, Edward: Blood Transfusions Without a Chill by the Syringe-Cannula System, J. A. M. A. **72**:1661 (June 7) 1919.

1. Landsteiner: Ueber Agglutinationserscheinungen normalen menschlichen Blutes, Zentralbl. f. Bakteriologie **27**:361, 1900.

2. Jansky: Haematologische Studien bei Psychotikern, Klin. Sbornik **8**:85, 1907.

3. Lindeman, Edward: Blood Transfusion, J. A. M. A. **62**:993 (March 28) 1914.

4. Lindeman, Edward: Reactions Following Blood Transfusion by the Syringe Cannula System, J. A. M. A. **66**:624 (Feb. 26) 1916.



The sodium citrate method, because of its simplicity, was used by members of the attending and house staff of the hospital, whereas other methods, because of the greater difficulty in technic, were performed only by specialists.

My statistics show a gradual rise in the number of chills following the citrate method. I did not encounter any chill among my first twenty-two transfusions given by this method. A small number of cases offers no proof. Horsley, Vaughan and Dodson<sup>14</sup> have recently advised the revival of vessel anastomosis, because they did not observe a chill among twenty-four cases. Similar results can be duplicated by any method. Thus, there is no reason to abandon the modern, more simple methods of blood transfusion.

From my records of transfusion, the vast majority of which were performed at Mount Sinai Hospital, I find that the percentage of chills among the first 129 citrate transfusions was 15. Among 200 transfusions, the percentage rose to 20, and among 365 transfusions, to 24. The citrate method, very soon after its introduction, was performed by different members of the attending and house staff. The figures, 20 per cent. and 24 per cent., respectively, represent results obtained by different men.

Most hospitals use one method to the exclusion of others, and are thus not able to compare results. At Mount Sinai Hospital we have fortunately been able to compare the results as to number of chills, etc., from transfusion of citrated with those of uncitrated blood. The citrate method and Unger's stopcock method were developed at this hospital; both methods are at present in use. Records of transfusions from Jan. 1 to Nov. 1, 1922, show that thirty-four citrate transfusions were followed by eight chills, and twenty-nine Unger transfusions were followed by ten chills. Thus, the citrate method yielded 23 per cent., and the Unger method 34 per cent. of chills. In other words, the percentage of chills after the Unger method was 11 larger than the percentage after the sodium citrate method. These transfusions were performed by members of the attending and house staff, and indicate the results obtainable in the hands of the average physician.

Careful technic is very important in any method of blood transfusion. The proper insertion of the cannula into the vein is of the utmost importance. If the needle is not inserted in the proper direction, if it strikes the vein at an angle to its longitudinal axis, the blood cannot flow rapidly, and small clots are apt to form. These, though minute, may cause chills.

Another cause for clot formation is the use of cannulas of small caliber. It is much easier to enter the vein with a small size cannula than with one of large caliber. Hence, the inexperienced surgeon selects a small cannula, which will prevent the rapid flow of blood from the donor into the glass jar.

Reasonable speed in using the citrate method is important, in order to avoid excessive cooling of the blood before it enters the recipient's vein.

Proper insertion of the cannula into the vein is as important in the use of uncitrated blood as with the citrate method. To insure the proper operation of the syringe stopcock methods (of Miller, Unger, Bernheim and others), both needles must allow an unobstructed flow of blood.

Small transfusions are less likely than large (from 800 to 1,000 c.c.), to be followed by chills. The blood of some donors is more likely to cause reactions than that of others.

Mellon, Slagle and Acree<sup>15</sup> publish results of experiments which suggest that reactions following intravenous injections might be lessened if the solutions (citrate, saline, etc.) were properly buffered. It is possible that a difference in the hydrogen-ion concentration of the blood as compared with that of the saline and citrate solutions may account for some of the chills which follow the Unger and citrate methods.

3. *Condition of the Patient.*—The frequency of chills after the transfusion of blood is dependent in a large measure on the disease for which the transfusion is performed. In looking over large series of transfusions, one is impressed by the fact that in certain conditions chills are rare, whereas, in others, they occur very frequently. For instance, in transfusion given to replace loss of blood volume consequent on profuse hemorrhage, chills are of comparatively rare occurrence. When transfusion is done in blood diseases such as pernicious anemia and purpura hemorrhagica, chills occur much more frequently. The most formidable chills were encountered when treating leukemia and acute sepsis. Experience has shown that in leukemia, as well as in acute sepsis, transfusion is useless as a therapeutic measure, and sometimes causes grave danger to the patient. For this reason, blood transfusion is strictly contraindicated in these conditions.

Unger<sup>16</sup> has published results of experiments and claimed that sodium citrate has a deleterious effect on the blood. He states that, according to his investigations, citrated plasma has anticomplementary power, and sodium citrate increases the fragility of the red blood cells, and decreases the phagocytic power of the leukocytes. Were Unger's experiments conclusive, the applicability of the citrate method would be limited to cases of hemorrhage. It could not be used either in diseases of the blood (pernicious anemia, purpura hemorrhagica, etc.) or in cases of subacute or chronic sepsis. In other words, its use would be strictly contraindicated in a great number of diseases, in spite of the fact that this method has been used in the treatment of these conditions, with excellent clinical results, for many years.

It was clear without further experiments that Unger's conclusions concerning the inhibitory action of sodium citrate on the leukocytes was erroneous; for in the Wright opsonic index determination, in which the phagocytic activity of the leukocytes is to be measured, leukocytes are collected in from 1.5 to 2 per cent. sodium citrate solution. This is ten times as strong as the percentage of sodium citrate used in transfusion.

The other two points claimed by Unger have been disproved by the recent work of Mellon, Hastings and Casey.<sup>17</sup> They state that the results of their experiments are, in the main, "diametrically opposed to those of Unger." They found no anticomplementary power in citrated plasma, and no deleterious effect either on the red or on the white blood cells. These results of Mellon, Hastings and Casey are in accord with clinical

15. Mellon, R. R.; Slagle, E. A., and Acree, S. F.: Practical Applications of "Buffers," J. A. M. A. **78**: 1026 (April 8) 1922.

16. Unger, L. J.: Deleterious Effect of Sodium Citrate Employed in Blood Transfusion, J. A. M. A. **71**: 2107 (Dec. 31) 1921.

17. Mellon, R. R.; Hastings, W. S., and Casey, Gertrude W.: Observations on the Effect of Sodium Citrate on the Blood, J. A. M. A. **79**: 1678 (Nov. 11) 1922.

14. Horsley, J. S.; Vaughan, W. T., and Dodson, A. I.: Direct Transfusion of Blood, Arch. Surg. **5**: 301 (Sept.) 1922.



experience with the citrate method, collected from all over the world. Experience has proved that, other factors being equal, clinical results obtained by the citrate method are as good as those obtained when uncitrated blood is used in transfusion.

#### CONCLUSIONS

1. The number of chills which follow transfusion of blood can be reduced by proper blood tests, careful technic, and strict attention to the indications.

2. The percentage of posttransfusion chills is about the same, no matter what method is used.

3. In a series reported here, posttransfusion chills were encountered in 23 per cent. after the citrate method, and in 34 per cent. after the Unger stopcock method.

4. Mixture of sodium citrate with blood in the proportion of 0.25 per cent. does not affect the vitality either of the erythrocytes or of the leukocytes.

1155 Park Avenue.

### *Clinical Notes, Suggestions, and New Instruments*

#### WEIGHT AS A ROUTINE TEST IN PREGNANCY: A PRELIMINARY REPORT

C. HENRY DAVIS, M.D., MILWAUKEE

Urinalysis was for many years the only routine test employed during pregnancy. Within the last decade, the value of blood pressure readings, previously rarely used as a special test, has been generally recognized. Both of these tests give valuable data; but I have found that the information gained from the routine recording of weight greatly enhances their clinical value, and I urge the addition of this third test in all prenatal work.

A survey of the literature reveals only a few articles since that of Gassner published in 1862. From two years' experience in recording weight as a routine test, I am convinced that Gassner's average gain of  $3\frac{1}{2}$  to  $5\frac{1}{2}$  pounds (1.6 to 2.5 kg.) a month during the last three months of pregnancy is excessive, and should be prevented through careful regulation of diet. Since the average loss of weight following delivery is between 15 and 20 pounds (6.8 and 9 kg.), it is obvious that, if a woman has a normal weight before pregnancy, her total gain should not exceed 20 pounds. If previously underweight, she may be allowed a somewhat greater gain, possibly as much as 30 pounds (13.6 kg.). There is evidence that an excessive gain is dangerous. The woman who is fat should be kept on a carefully limited diet, and she may actually reduce to the benefit of herself and the growing fetus.

Pregnancy is usually characterized by a stimulated metabolism and improved health. Some women show improved metabolism from the first weeks, but others, owing to nausea and vomiting, lose weight during the first three months. It is important to know the amount of this loss. An excessive loss is dangerous, and by careful handling can usually be prevented. Naturally, the woman who has lost considerable weight during the first trimester may be permitted a greater average weekly gain during the second and third.

The weight of the fetus at term depends to some extent on the food intake of its mother. The excessive weight of a newborn baby is a good indication that the mother ate immoderately during pregnancy.

The marked decrease of eclampsia in central Europe during the period of war rationing led us to realize that eclamptics are usually women who have gained weight rapidly during pregnancy. Is excessive eating one of the factors in the breakdown of the metabolism and the development of this toxemia? Careful regulation of the diet, checked by routine weight records, may give valuable information in this particular.

Since starting the routine weighing of pregnant patients, I have several times noted that during the week or the two weeks before the appearance of albumin, increase of blood pressure or gross evidence of edema, there has been an abnormal increase in weight. Edema as evidenced by pitting of the ankles or other parts of the body is a rather late manifestation of retained fluids. Weight records may thus show an early evidence of failure on the part of the excretory organs.

As a result of observation that albumin and an increased blood pressure usually follow sudden gains in a pregnant woman's weight, eliminative treatment and a strict limitation of diet is now ordered as soon as the sudden increase is noted, regardless of the blood pressure and urinalysis tests.

There are many logical reasons, as well as clinical evidence, to back the plea for the consideration of weight in conjunction with blood pressure tests and urinalysis as a routine measure during pregnancy.

141 Wisconsin Street.

#### ASTHMA DUE TO CAT AND DOG HAIR: A PERSONAL EXPERIENCE

GRAFTON TYLER BROWN, M.D., WASHINGTON, D. C.

At the age of 6 years, my parents noticed that I had considerable difficulty in breathing. This was thought to be due to a pair of very large tonsils, which almost entirely closed the aperture in my throat. Tonsillectomy and adenectomy were performed at this time, but my dyspnea persisted and was then recognized as bronchial asthma. From this time, I suffered with frequently recurring attacks of more or less severity. I scarcely knew the meaning of a good night's sleep and, at times, I was unable to go to bed at all, but was forced to spend the night in a chair. Whenever I had a cold, which was very often, I was completely incapacitated. The inhalation of various asthma powders and cigarets gave me temporary relief, but no hope for a cure was held other than that I might possibly outgrow it.

My first real relief was obtained by a visit to Atlantic City. At the time, I was having a very severe attack; but my asthma left me immediately on arriving in Atlantic City, and I was completely free during the entire time I was there. When I returned home, my asthma came back almost immediately. This experience has been repeated innumerable times since then; my asthma invariably left me when I went to Atlantic City, and I remained free while there, with the exception of a few isolated attacks; but when I returned home, my asthma, just as surely, came back again. My physicians explained this on the assumption that the climate of Washington was unfavorable for my trouble. This assumption was later proved to be erroneous. In 1913 we moved to a new residence in the same neighborhood, and I was entirely free from asthma for a period of two years, though exposed to identical climatic conditions. In 1915, my asthma returned and was as bad as ever.

I took up the study of medicine, but was discouraged by my professors, who told me there was no cure for asthma. Examination of my heart, blood and urine gave negative results. My blood pressure was normal. Fluoroscopic examination of my chest was negative. I took potassium iodid, Hare's anti-asthmatic prescription, benzylbenzoate and other preparations internally, but with no results other than a gastro-intestinal disturbance.

I tried calisthenics, deep breathing, long walks, cold baths, sleeping outdoors, vegetarian diet, and fasting, but my asthma persisted in spite of all.

In an effort to obtain some relief from my suffering I resorted to osteopathy, then neuropathy, chiropractic and finally Christian science, but they all proved dismal failures.

In 1919, while an intern in the Atlantic City Hospital, I heard and read something about protein sensitization as applied to asthma. I obtained some twenty-five food proteins, with which I tested myself, but they all gave negative results.

When I returned to Washington, additional skin tests were made, and I gave a marked reaction to dog-hair protein. I then went to Philadelphia and was thoroughly tested out by



Dr. Sterling, who found me sensitive to dog-hair, ++; cat-hair, +, and horse-dander, ±. To all others I gave a negative response. Since, I have made innumerable tests on myself, with always the same results, thus convincing me of the absolute specificity of the tests.

The explanation of my case is simple. At our former residence we always had a number of cats, which were the cause of my asthma at that time. My two years of freedom in Washington, from 1913 to 1915, were due to the fact that we got rid of our cats when we moved. In 1915, some one gave us a dog, which started my asthma again as badly as ever. Going to Atlantic City merely meant getting away from cats and dogs. The few isolated attacks occurring in that city could be traced directly to intimate exposures to cats or dogs.

We got rid of our dog, and I treated myself with gradually increasing injections of dog-hair protein. Since then I have been entirely free from asthma.

After being a martyr to asthma for twenty-two years, I am now well.

1726 M Street, N. W.

REPORT OF A CASE OF ESSENTIAL PENTOSURIA IN BROTHER AND SISTER \*

JACOB ROSENBLOOM, M.D., PH.D., PITTSBURGH

It will be recalled that two types of pentosuria<sup>1</sup> exist: (1) the alimentary type, characterized by the presence of optically active xylose or arabinose in the urine, which follows the ingestion of large amounts of pentose-containing foods<sup>2</sup> such as apples, cherries, plums, beets and leguminous vegetables, and (2) the idiopathic, or essential, pentosuria.

Salkowski and Jastrowitz<sup>3</sup> first described a case of essential pentosuria in a morphin addict who also occasionally excreted a trace of glucose. In this type of pentosuria, r-arabinose, an optically inactive pentose, is usually excreted. Janeway<sup>4</sup> was able to compile from the literature twenty-four of these cases up to the year 1906.

In the two cases of chronic pentosuria that have come under my observation, the patients were:

Mrs. A., Jewish, aged 30, who was told twelve years ago that small amounts of sugar were present in the urine. At no time has she had any symptoms of diabetes mellitus.

FINDINGS IN TWO CASES OF ESSENTIAL PENTOSURIA

Patient	Date	Benedict Test	Fermentation*	Osazone			Bial Test	Polarization	Tollens Test for Glyeauronic Acid	Quantity of Pentose, Gm.	Diet
				Melting Point	Nitrogen Content	Distillate†					
Mrs. A. ....	10/ 8/22	+	0	158°	17.02	+	+	Inactive	0	6.0	General
	11/ 9/22	+	0	159°	17.01	+	+	Inactive	0	6.4	Restricted earbohydrate
Mr. W. ....	11/ 8/22	+	0	158.5°	17.08	+	+	Inactive	0	3.7	General
	11/22/22	+	0	159.2°	17.06	+	+	Inactive	0	4.9	General

\* After fermentation, the urine reduced Benedict's reagent as strongly as before fermentation, and also yielded an osazone. Urine containing pentose exposed to the air keeps its reducing power impaired, in distinction from glucose containing urine.  
† Distillate applies to dissolving the osazone in warm water, adding excess of concentrated hydrochloric acid and distilling. The only substances in the urine that form fufurol under these conditions are the pentoses, glyeauronic acid and glyeauronates. These are distinguished from pentose by the fact that urine containing them rotates the plane of polarized light, gives a positive Tollen's test, and yields an osazone of different nitrogen content and melting point than does pentose. Fufurol is tested for in the distillate by Bial's reagent.

Mr. W., Jewish, brother of Mrs. A., aged 31, who twelve years ago was refused insurance on account of diabetes. At no time has he had any symptoms of diabetes mellitus.

In the accompanying table are presented the data showing that both of these patients are excreting pentose; and, as the urine is inactive, it is no doubt racemic arabinose that they are excreting.

In the literature it is well known that pentosuria is very common in Jews and is often found in families. The cases

\* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of bibliographic references. The complete article appears in the author's reprints.

1. Bendix: Die Pentosurie, Stuttgart, 1903. Neuberg: Ergebn. d. Physiol. 4: 373, 1904. Garrod: Inborn Errors of Metabolism, 1909. Greenwald: Endocrinology and Metabolism 4: 289, 1922.

2. Von Jaksch: Centralbl. f. inn. Med. 27: 145, 1906.

3. Salkowski and Jastrowitz: Centralbl. f. d. med. Wissensch. 30: 337, 1892.

4. Janeway: Am. J. M. Sc. 132: 423, 1906. Kaplan: New York M. J. 84: 233, 1906.

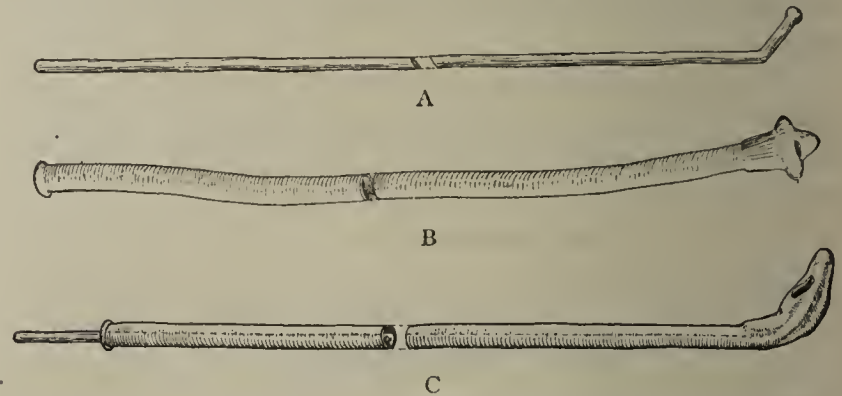
reported here are of this nature. The only other case of pentosuria I have observed is the case of a Jew, aged 63, who has had this condition for the last eleven years.

5070 Jenkins Arcade.

SIMPLE METHOD OF INTRODUCING A MUSHROOM CATHETER \*

NELSE F. OCKERBLAD, M.D., KANSAS CITY, MO.

The mushroom catheter makes the ideal indwelling catheter. The usual introducers or obturators are not satisfactory in all cases. They work fairly well in a normal urethra, but in an exceptionally difficult, tortuous, prostatic urethra, they may fail. The method that I have used with much satisfaction is



A, solder wire obturator; B, catheter; C, catheter with obturator in place.

very simple. I once had occasion to introduce a mushroom catheter, but had no obturator with me. I had, however, a Walther ureteral bougie. I used the butt end of this, and slipped the catheter over it, and was successful in placing the catheter in the bladder. I used this on several occasions and found that it worked very well. Later, I encountered a tortuous prostatic urethra and found that the catheter would not make the turn.

It then occurred to me that if I had some instrument that I could bend like a Coudé catheter, I could cause it to make the turn and slip by. I secured about 16 inches of ordinary solder wire, which is sold in every hardware store. A hot soldering iron was held against the tip, in order to produce

a bead of flux. As soon as it was cool it became smooth and fitted in the tip of the mushroom catheter.

This obturator of solder can be molded to any desired shape, and has never yet failed to pass the most difficult urethra.

TECHNIC

First, the catheter and obturator of solder are sterilized in the usual manner, preferably by boiling. The urethra is then filled with a lubricant. Next, the obturator is introduced into the catheter, and a suitable bend is made at the tip. The catheter is stretched well over the solder obturator so that the mushroom head is elongated until flat. If the catheter will not enter readily, it is withdrawn, and another bend is made in it until the bend necessary to enter the prostatic

\* Read before the Kansas City Urological Society, Dec. 16, 1922.  
\* From the Department of Genito-Urinary Surgery, University of Kansas School of Medicine.



urethra is found. The catheter is then released and permitted, by its own elasticity, to resume its normal shape. When this occurs, the mushroom head spreads out and takes hold on the internal urinary orifice. The solder obturator is then easily withdrawn. The method also works very nicely for introducing a mushroom catheter into the female urethra. I have used it for several months, and have not yet failed to pass a No. 20-22 or No. 24 mushroom catheter whenever I desired. This obturator may also be used to stiffen the ordinary soft rubber catheter during introduction for the purpose of draining the bladder in prostatic obstruction or spasmodic stricture of the urethra.

415 Argyle Building.

## New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

**BACTERIAL ALLERGENS-SQUIBB** (See New and Nonofficial Remedies, 1922, p. 247).

*Bacillus Diphtheroid Allergen-Squibb*: Prepared from the protein from *Bacillus diphtheriae*.

*Staphylococcus Citreus Allergen-Squibb*: Prepared from the protein from *Staphylococcus citreus*.

*Bacillus Influenzae Allergen-Squibb*: Prepared from the protein from *Bacillus influenzae*.

*Bacillus Diphtheroid Allergen-Squibb*, *Staphylococcus Citreus Allergen-Squibb* and *Bacillus Influenzae Allergen-Squibb* are prepared by the following method:

Seed tubes are inoculated from stock cultures, and seed agar bottles are inoculated from seed tubes. After twenty-four hours' growth, the seed bottles are examined for purity of culture, the bottles washed off with 0.4 per cent. cresol and physiological solution of sodium chloride. The contents are centrifuged and the liquor decanted. The organism is rewashed and centrifuged again. The organism is extracted with 0.2 per cent. sodium hydroxide solution, filtered and the filtrate is brought to the iso-electric point of the protein by the addition of hydrochloric acid. The purified bacterial protein is filtered off and dried with anhydrous acetone.

Bacterial Allergens-Squibb are white powders; insoluble in water, salt solution, or acid, but readily soluble in dilute alkali.

**FOOD ALLERGENS-SQUIBB** (See New and Nonofficial Remedies, 1922, p. 241).

*Egg Yolk Globulin Allergen-Squibb*: Prepared from the purified globulin of yolks of hen's eggs.

*Horse Serum Allergen-Squibb*: Prepared from the protein of normal horse serum.

The following method is used for the preparation of Egg Yolk Globulin Allergen-Squibb:

The washed yolks of fresh hen's eggs are completely extracted with ether, dissolved in a 10 per cent. solution of sodium chloride and dialyzed until the solution is free from salts. The precipitated globulin is filtered and washed with water. It is redissolved in a 10 per cent. solution of sodium chloride and the solution filtered. The globulin is again precipitated from the filtrate by dialysis, the precipitate washed with water and finally with anhydrous acetone and dried.

The product is a fairly yellowish powder, odorless and tasteless, soluble in dilute salt solution and insoluble in water.

The following method is used for the preparation of Horse Serum Allergen-Squibb:

The proteins from normal horse serum are precipitated by acetone and the precipitate is dried with acetone.

The product is a white powder, odorless, tasteless, partially soluble in water, more completely soluble in dilute alkali.

**Observations on Intelligence.**—The truest and most profound observations on intelligence have in the past been made by the poets and, in recent times, by the story writers. They have been keen observers and recorders, and reckoned freely with the emotions and sentiments. Most philosophers, on the other hand, have exhibited a grotesque ignorance of man's life and have built up systems that are elaborate and imposing, but quite unrelated to actual human affairs. They have almost consistently neglected the actual process of thought and have set the mind off as something apart to be studied by itself.—Robinson: The Mind in the Making.

## Special Article

### THE CARE AND FEEDING OF INFANTS

(Continued from page 183)

[NOTE.—This is the fourth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

#### OVERFEEDING

In the normal breast-fed baby, overfeeding is not of frequent occurrence and is usually of temporary importance, except in very young and premature infants and in those infants fed by gavage. The condition is usually corrected spontaneously by refusal of the infant to nurse longer than is necessary to meet its needs. When the breasts remain unemptied, the milk secretion soon decreases. The temporary overfilling of the stomach is usually satisfactorily relieved by a regurgitation of part of the meal. There always remains some danger of the stomach's becoming accustomed to this tendency to reversed peristalsis. It is most commonly seen during the first weeks of life before the mother's breasts and the baby have become adapted to each other. Overfeeding in infants fed by gavage may lead to dilatation of the stomach when the food is too rapidly administered, and this may lead to grave symptoms.

#### ETIOLOGY

Too frequent feeding is the most common cause; less frequently, too prolonged feedings. Excessive quantities of milk from a free flowing breast are usually of temporary importance when the infant is nursed by the mother, but are more likely to be a factor when infants are nursed by a wetnurse, more especially when her breasts are kept active by the nursing of a second infant. Milk excessively rich in fat and sugar may lead to nutritional disturbances.

Ordinarily the stomach of a breast-fed infant empties itself in about two hours. The period between nursings during which the stomach is empty is one of considerable importance in that during this period, free hydrochloric acid is present. Besides its antiseptic properties, it assumes an important rôle in stimulating the secretion of pancreatic juice and bile, both of which have an important bearing on digestion. Too frequent nursings interfere with these normal physiologic processes. Excessive quantities of food, even at proper intervals, impose too great demands on the gastric mucosa. When the food contains excessive quantities of fat, gastric secretion becomes diminished.

#### SYMPTOMS

The earliest manifestations of overfeeding are regurgitation, anorexia, irritability and, not infrequently, diarrhea. Regurgitation occurs at first only occasionally, immediately after nursing, and without any discomfort on the part of the infant (spitting). The regurgitated fluid is often unchanged milk. This is usually the first premonitory symptom.

Diarrhea follows when overfeeding continues and regurgitation becomes insufficient to rid the body of excess food. This is especially true when the milk is



high in its fat and sugar content during the first weeks of life. The stools are more frequent than normal, and contain undigested particles of food. The irritating feces often cause intertrigo in the anogenital region.

In many cases no other symptoms develop, the condition undergoing a spontaneous cure. The breasts lessen their yield, and thus the cause of the condition disappears, or, on the other hand, the digestive power of the infant increases to such an extent as to be able to take care of the excess, if not too large. When, however, these disturbing factors are entirely neglected, the excess of the food continued, or even increased, owing to wrong interpretation of symptoms, then more serious symptoms develop.

Vomiting becomes habitual, occurring from a few minutes to half an hour after nursing. It is accompanied by visible discomfort and straining on the part of the infant. The vomitus consists of curdled milk, mucus and gastric juice. Between vomiting, there is often painful belching. The stomach shows distention, and empties itself only after three or four hours. Free hydrochloric acid is reduced or may be absent, the acid products of fermentation being present. The micro-organisms are increased in number and variety, owing to stagnation and absence of antiseptic free hydrochloric acid.

The weight early becomes stationary; in severer cases, associated with diarrhea, loss of weight becomes marked.

#### DIAGNOSIS

There is great danger of making a diagnosis of overfeeding in infants sick from other causes. As previously stated, it is, on the whole, a rare condition in normal infants. In the presence of symptoms suggestive of overfeeding, positive diagnosis is made by determining the amount of milk taken by the infant, and comparing it with amount an infant of the same age and weight should get.

If, however, the food is found to be quantitatively correct, occasionally information of value may be obtained by examining the quality of the milk chemically, especially as to its fat and sugar content. The specimen for examination should be taken under precautions pointed out under "Examination of Human Milk." By making a proper etiologic diagnosis, valuable indications for rational treatment are obtained.

#### COMPLICATIONS

Pylorospasm and gastric dilatation are not uncommon in the neglected cases.

Diarrheal disturbances are accompanied by the milder evidences of intestinal irritation, such as colic, and more or less numerous bowel movements—acid and irritating, greenish-yellow, and containing numerous curds and much mucus. The buttocks soon become reddened, and intertrigo results.

Anhydremic intoxication, complicated by acidosis, while rare in the breast-fed infant, may result when the vomiting and diarrhea are neglected. The baby becomes drowsy and stuporous, pays little attention to its surroundings, and not infrequently develops an extreme anorexia.

In simple diarrheal disturbances, the intestinal findings dominate the picture, while in intoxication they share their prominence with the added nervous symptoms.

Eczema not infrequently results from overfeeding in the breast-fed infant, and is usually seen in the fat type of infant who is otherwise healthy.

Pyelitis is a frequent complication in neglected cases of diarrhea.

#### TREATMENT

The prophylaxis of this condition is of importance, and consists in giving the mother proper instructions as to the nursing, especially as to its frequency, and seeing to it that the rules covering the interval, number of nursings and time at the breast are observed. In wet-nursing, more caution is necessary, especially in those wetnurses who have an abundance of milk, which is frequently the case in a wetnurse whose child is older than the infant nursed.

A very important point to impress both on the mother and on the wetnurse is the fact that crying of the infant is not always due to hunger, and that offering the breast should not be used as a means for quieting the child.

When the flow of milk is very free, it may be necessary to reduce the nursing period to even three to five minutes, it being a fact that most infants take about 75 per cent. of their entire meals in the first five minutes at the breast. It is always well at the beginning of such an experiment to weigh the baby after a two, three, five, ten and twenty minute period to ascertain the exact amount which the baby obtains from the particular breast which it is nursing, so that conclusions may be drawn as to the time it is to be left on each breast. If the short nursing periods with increased intervals do not result in a lessened secretion and relief of the symptoms, the milk should be expressed and fed by hand in measured quantities.

When the breast milk contains an excess of fat, this is most easily remedied by reducing the mother's diet as a whole and increasing her exercise and water intake.

When the infant shows evidence of gastric distention and retention, the treatment consists in emptying the stomach and bowels of the overload of fermenting food, and resting the digestive apparatus, both these objects being achieved by giving a bland diet, consisting of boiled water, or weak tea sweetened with saccharin, for twelve hours.

If vomiting continues, it is advisable to wash out the stomach with physiologic sodium chlorid solution or 1 per cent. sodium bicarbonate solution.

Irrigation of the bowel aids in removal of fermenting intestinal contents.

#### INTERCURRENT PARENTERAL AND ENTERAL INFECTIONS

Infections in the mother or infant may be the causative factors of nutritional disturbances. In the mother the most important are puerperal fever and sepsis, the acute infectious diseases, and local infections of the breasts. In the infant, infections outside the digestive tract, such as pharyngitis, tonsillitis, pneumonia, pyelitis and bronchitis, are classed as parenteral infections, and those of the intestinal tract as enteral infections.

#### SYMPTOMS

If the mother is ill, the clinical picture will vary, depending on whether the infant becomes infected by



the contact, or suffers only through a diminished food supply. Conditions in the mother which would justify weaning have been discussed.

In conditions following infections in the infant, the symptoms depend on whether the infection is local, systemic or confined to the intestinal tract. The clinical picture varies directly with the degree of disturbance of the metabolic function. As a rule, the enteral infections are more commonly associated with grave disturbance of the infant's nutrition. Parenteral infections also interfere with the processes of metabolism necessary to meet the nutritional needs. Undoubtedly, in many of these a secondary enteral infection results from ingestion of bacteria from the upper respiratory tract.

The diagnosis of the primary seat of infection in the infant is of considerable importance in deciding the method of treatment.

#### TREATMENT

Parenteral infections rarely call for restraint in administration of food because of the associated anorexia, and the infant should be nursed (if possible without danger to the mother) directly at the breast.

In the case of enteral infections, it may be necessary to withdraw the maternal milk and replace it by a short period of starvation, to be followed by small quantities of breast milk, taken directly from the breast during short nursings, or it may be best to feed small quantities of expressed milk to the infant at regular intervals.

Not infrequently it becomes necessary to feed these infants by catheter in order to sustain them. This method of introducing their food should be begun sufficiently early to avoid a catastrophe.

Under no circumstances should they be placed on food other than the mother's milk when the state of her health and the quality of her milk permit.

Inert fluids, such as water, weak tea, broths made from young meat and young fowls, and cereal decoctions, should be given between feedings to insure a sufficient intake of water, the infant's age permitting. A careful record should be kept of the twenty-four hour quantity of all fluids administered, in order to insure the child a sufficient water and food administration.

#### IDIOSYNCRASY TOWARD MOTHER'S MILK

The cases in which the mother's milk is totally unfit for the infant's use are exceptionally rare. More recently, considerably more attention has been given to the effect of the mother's diet on the quality and quantity of her milk secretion. The instruction so commonly given to the mother to the effect that she may eat whatever she likes has, in the light of more recent investigations, shown need for modification. The effect of the diet of the mother on the milk must be considered under two headings; first, what foods disagree with the individual mother to the extent of affecting the quantity of her milk supply. The mother will be the best judge as to what foods she herself finds it desirable to eliminate from her diet because of an undesirable effect on herself. More important, however, from the standpoint of food idiosyncrasy is the result following the eating of foods by the mother which she herself may relish, but which may have an

undesirable effect on the child. It is well known that eggs, some cereals, fish and sea foods, certain meats, chocolate, and even cow's milk proteins, when ingested by the mother, may result in a sensitization of the infant.

The more recent work of O'Keefe<sup>9</sup> demonstrated the frequency of such a sensitization in eczema. Sixty-one per cent. of forty-one cases showed a positive reaction to one of the cow's milk proteins. Forty-one per cent. showed a positive reaction to one of the egg-proteins, two cases to oats, and one to wheat. About 20 per cent. of the positive cases showed a response to both milk and egg proteins. Apparent cure in about 20 per cent. more followed the omission or limitation in the maternal diet of one or more food proteins to which the infant was sensitive.

Talbot<sup>10</sup> reports a case in which a very severe eczema cleared up on the mother's discontinuing the eating of chocolate, and recurred on her again eating that food.

By a series of experiments, Shannon<sup>11</sup> was able to demonstrate that two infants under his care, who were suffering from urticarial skin lesions, had become sensitized to egg protein ingested by the mother. He in turn sensitized a series of guinea-pigs by the injection of the breast milk from these women, and was able to precipitate anaphylactic reactions by intrathecal injection, when eggs were added to the mother's diet.

*Cases of Egg Anaphylaxis.*—The grandmother of a patient presented no idiosyncrasy following ingestion of eggs, until the time of her first pregnancy, when during the fifth month she ate eight eggs in one day. Since that time, twenty-four years ago, she never has been able to relish eggs. Her first child was unable to eat eggs or anything containing eggs during her childhood, but during her later years she has been able to eat food containing a moderate quantity of egg. She has no children. Her second child, the mother of the patient, gave the same history, stating that she could detect the smallest quantity of egg in pastry, at the first taste. The patient had been a well infant until seen at 8 months, when it was still exclusively breast-fed, and had developed a severe diarrhea. For twelve hours it was placed on barley-water, with instructions to add the white of one egg to a pint of barley water during the subsequent twelve hours. It partook of 1 ounce of this mixture of barley water and egg albumin. Within thirty minutes, it became violently ill, with vomiting and purging, and shortly thereafter developed marked edema of the entire body. This lasted for six hours, when it receded spontaneously. When a slight abrasion was made with a Pirquet scarifier, and a drop of egg albumin was applied to the abrasion, a white wheal, one-half inch in diameter, developed within six minutes, continuing to increase in size for fifteen minutes, when it was surrounded by an erythematous area, 1 inch in diameter; throughout this erythematous area, numerous pin-head sized white elevations developed. The entire reaction disappeared in one and a quarter hours.

9. O'Keefe, E. S.: Eczema in Breast-Fed Babies, Boston M. & S. J. 185: 194 (Aug.) 1921.

10. Talbot, F. B.: M. Clin. N. Am. 1: 985 (Jan.) 1918.

11. Shannon, W. R.: Demonstration of Food Proteins in Human Breast Milk by Anaphylactic Experiments on Guinea-Pigs, Am. J. Dis. Child. 22: 223 (Sept.) 1921.

**Quack Plague "Doctors."**—Some of the most noisy detractors of our work were the native quacks who persisted in beguiling the public as to their ability to cure the disease. When patients came with fever and cough, they always gave hopeful prescriptions. If the sickness was not infectious, the patient got well and the quack's reputation jumped skyward; should it turn out to be true plague, both patient and quack often died. In Harbin alone, we recorded seven deaths among the old-style practitioners; one was the "vice president of the medical research society" whose body was thrown out into the street by his wife in order to escape isolation of the family. At Dalainor one quack after catching the disease passed it on to his wife and four children. None survived. —Reports: North Manchurian Plague Prevention Service, 1918-1922.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JANUARY 27, 1923

## LEUKOCYTIC SECRETIONS

It is perhaps unfortunate that the routine counting of the colorless corpuscles of the blood, which has become an every-day procedure in clinical medicine, has tended to focus attention so effectively on the numbers of these cells and thereby to overshadow the functional importance that they unquestionably possess. The leukocytes have long been recognized as independent and structurally typical cells, which are usually very much "alive" so that they may respond to their environment with motile as well as chemical reactions. Their motility, as expressed in the familiar ameboid movements of the white cells of the blood, by virtue of which they can penetrate vascular walls and permeate various tissues, has attracted great interest, particularly in view of the fact that such corpuscles can ingest foreign particles, including bacteria. This performance is, of course, the basis of the phagocytic theory of immunity so ardently championed by Metchnikoff. In phagocytosis a single, unattached cell carries out a sort of intracellular digestion that is characteristic of the lowest forms of animal life. In the latter a single cell is obviously called on to perform all necessary functions; but, in the course of evolution, when the body becomes more and more a "community of many cells," a division of labor takes place which is expressed morphologically in the differentiation of tissues and the adaptation of certain types of tissue cells to specialized activities. Apparently, as Zinsser has pointed out, the leukocytes have retained the primitive abilities of the more independent cells of the lower forms, perhaps as a provision against certain emergencies. At any rate, it is all too rarely recalled that, in addition to ingesting and digesting bacteria, the phagocytes may help to clean up the debris of residual cells of all sorts, such as extravasations of blood that occasionally accumulate, so that it would seem as if the scavengers preserved their primitive characteristics for definite physiologic purposes, and were by no means always associated, as is often tacitly assumed, with the defense against infectious disease.

Besides removing foreign organisms and necrotic tissue by phagocytosis, the leukocytes have been charged with further responsibilities for which, however, the evidence is by no means so clearly marshaled. A generation ago it was customary to ascribe to them a function in the absorption and transport of foodstuffs from the intestine. On this basis the so-called digestive leukocytosis, or increase in the number of white cells in the blood after meals, was explained. It now seems far less likely, if not actually improbable, that fats and proteins require leukocytic intervention for their absorption. The leukocytes have also been assumed to be concerned with the supply of the plasma proteins and to take an important part in the as yet little understood mechanisms of blood coagulation. From this standpoint, as Howell<sup>1</sup> has expressed it, they might be regarded as unicellular glands, the products of their metabolism serving to maintain the normal composition of the blood plasma. The formation of granules within the substance of the eosinophils offers, he adds, a suggestive analogy to the accumulation of zymogen granules in glandular cells.

In an analogous vein, Carrel and Ebeling<sup>2</sup> have interpreted leukocytes as motile unicellular glandular structures which set free their secretions in the humors of the body. Through the splendid device of producing pure cultures of leukocytes—a procedure in which Carrel's laboratory at the Rockefeller Institute for Medical Research in New York has taken a large initiative—it has at length become possible to study the products of leukocytic metabolism with less contamination from unrelated materials than is possible when the more complex tissue extracts must be employed. Attention has already been directed to Carrel's evidence<sup>3</sup> of the presence of growth-activating substances in leukocytes, and of the setting free of these substances in the tissues and fluids in which leukocytes accumulate. Leukocyte extracts increase the rate of multiplication of fibroblasts in vitro, and this property is acquired by peritoneal exudate or connective tissue invaded by leukocytes. In this respect there is a resemblance to embryonic tissues which also yield substances that stimulate cell proliferation. Carrel and Ebeling<sup>2</sup> have even more recently found that leukocytes, cultivated in plasma, always secreted substances which increased the rate of growth of homologous cells. Less frequently, they set free substances which hemolyzed foreign erythrocytes. The latter is a typical immunity reaction. The growth-promoting substances, in the words of Carrel and Ebeling, are analogous to those contained in embryonic tissues, and probably represent some of the nutriment brought to fixed tissue cells by leukocytes. They may possess the function of rejuvenating cells which have ceased to multiply when

1. Howell, W. H.: Textbook of Physiology, Ed. 8, Philadelphia, W. B. Saunders Company, 1921, p. 442.
2. Carrel, Alexis, and Ebeling, A. H.: Leukocytic Secretions, J. Exper. Med. **36**: 645 (Dec.) 1922.
3. Carrel, Alexis: Growth Promoting Function of Leukocytes, J. Exper. Med. **36**: 385 (Oct.) 1922.



the cicatrization of a wound or the repair of a fracture requires a resumption of tissue activity. According to this hypothesis, the leukocytes brought to the surface of a wound by the process of inflammation would not only oppose bacterial invasion, but also bring to the tissue the material necessary to cell multiplication. To this extent one may follow the conclusions and analogies now demonstrated for the secretions of the leukocytes as well as for the extracts of their bodies. It calls for far greater belief, however, in accepting the further assumption, namely, that the inhibiting action of blood serum in old age may be due partly to a reduction in the amount and activity of the substances secreted by leukocytes and tissue cells in the humors of the organism.

### EFFICIENCY IN MEDICINE

In addition to the many profound changes in the living conditions of mankind which the World War served to bring about, the exigencies developed by the great conflict have helped in a large way to emphasize the possible significance of efficiency and organization in the conduct of human affairs. Prior to the war, considerable attention had already been devoted to the subject of industrial management, and the "system" introduced by Taylor and his followers had been widely introduced into the world of business. With the advent of the struggle between nations for supremacy, the need of conserving the health and workin gefficiency as well as increasing the work output of the individual was strongly emphasized. Everywhere the preservation of man power and the promotion of its functions became a part of the win-the-war program. Science was applied to the study of industry on a scale never before attempted. Industrial physiology became an expression to conjure with. Hand in hand with investigation of shop management went the examination of the hygienic conditions for work and the problems of fatigue in relation to the work output. Now that the stress of immediate need is no longer so imminent, it is becoming more evident that the welfare of the worker is involved not only in the day's work but perhaps also in the prolonged continuance of forms of labor that may alter unfavorably his physical or sociological welfare in the long run rather than for the time being.

To review the manifold questions here at stake would be tantamount to describing the entire scope of the new industrial hygiene. It was said recently that impoverished nations, of which there are today numerous instances—nations dependent on the fruits of labor rather than on the wealth of nature for their existence—are bound to promote the working capacities of their peoples in the direction of vigor and rational efficiency, in order to survive. In the attempts to promote such ends, physicians and the medical sciences have taken an important part. They have sought and taught the possible dangers to health, as, for example, in averting

occupational disease and preventing child labor; they have aimed to ascertain the personal fitness of individuals for special tasks, under the water, on land and in the air. Morbidity and mortality are only a portion of the considerations that engage the attention of the medical profession. Man is to be regarded not merely as a machine but also as a personality which must "carry on" in many directions.

It appears somewhat strange that, in this era of standardization, medicine itself has been so little altered as an art and a profession. Dürig,<sup>1</sup> the Viennese physiologist, asserts that in almost no other department of technical work have the tools been so little standardized as they have been in practical medicine. Consider, he says, the possible and impossible forms of the stethoscope; the various models of apparatus for electrotherapy and heliotherapy; the continually changing types of hemacytometer; the almost innumerable sorts of instruments for operative procedure for which every surgeon seems to delight in devising a form which no one else is trained to use; the manifold drugs of uncertain therapeutic worth. Assuredly, the waste of human energy in becoming adjusted to such a situation is not inconsiderable. Would it not be possible and even highly advantageous to adopt a greater uniformity, as happens in other vocations, without sacrifice of skill or dignity?

It shall not be denied that any tendency to detract from the possibility of individual initiative and ingenuity is to be strongly deprecated in any field of endeavor, and particularly in medicine, in which each case presents a more or less personal problem. "Leadership," Hoover<sup>2</sup> has written, "is a quality of the individual. It is the individual alone who can function in the world of intellect and in the field of leadership. . . . Salvation will not come to use out of the wreckage of individualism. What we need today is steady devotion to a better, brighter, broader individualism—an individualism that carries increasing responsibility and service to fellows."

Dürig, too, well realizes the importance of conserving the resourcefulness of the individual. The work of man must not be converted into machine-like performance. However, in the pressing daily tasks of medical practice there is much that can be and is being "standardized" with advantage rather than detriment. Conservation of time and energy through better systematized routine and equipment in office work, hospital or laboratory leaves a larger proportion of the inexhaustible twenty-four hour day at the service of the individual. Lack of orderly conduct in any vocation, disorder and chaos in professional surroundings, are not evidences of personal originality. Even the musical instruments used by great artists are standardized. The essential question is whether there is not still a

1. Dürig, A.: *Das Taylorsystem und die Medizin*, Wien. med. Wchnschr., 1922.

2. Hoover, Herbert: *American Individualism*, New York, Doubleday, Page & Co., 1922.



large opportunity for conservation through system in the work of most practitioners.

A further problem in human efficiency concerns the adaptation or adaptability of persons to the tasks set before them. It is likely, particularly with the present dearth of facilities for the education of all those who desire to embark in medical practice, that more attention will soon be devoted to the test of the fitness of each candidate for his job. There are many qualifications that characterize the ideal physician. How to discover the latent possibilities of developing them in him who seeks entrance to the profession is a pressing problem in medical education.

#### INTESTINAL WORMS AND APPENDICITIS

Although the literature on the etiology of appendicitis abounds in the names of American physicians who have contributed to an understanding of the disease, one aspect has of late received its chief emphasis from abroad. There foreign materials are believed to play a larger part in the genesis of the disorder than our clinicians are inclined to admit. There was an earlier period in the study of appendicitis when concretions, seeds, worms, bones and unnamed other foreign things were charged with responsibility in individual cases for irritative and more or less destructive effects on the mucous membrane, and thus of initiating an attack. In Germany, Rheindorf<sup>1</sup> has conducted studies leading him to the conclusion that oxyuriasis, or infestation with the common pinworm, *Oxyuris vermicularis*, assumes a by no means negligible part in the genesis of many cases clinically recognized as appendicitis. His conclusions, based to a considerable extent on histologic examination of the mucous membrane, have by no means been readily accepted.

Recently, Noack<sup>2</sup> has carefully examined the appendixes of a number of patients on whom extirpation of the organ was carried out. In nine out of fifteen cases taken at random from the experiences of a large surgical clinic, pinworms or parts of pinworms were discovered on careful microscopic examination of the removed appendix. Even when remnants of the worms were missing, it is not impossible, Noack argues, that the parasites may have had some responsibility for the attack involving a bacterial invasion of injured tissues subsequent to the disappearance of the worms themselves.

In the light of the current interest in the theory of focal infection, the return to a consideration of foreign bodies as predisposing causes of appendicitis in a larger number of cases than is now commonly assumed may not prove popular. Without presuming to guide the uncertain reader, we may nevertheless point out that,

according to Stiles of the United States Public Health Service, the pinworm is one of the most common of the intestinal worms; and a prominent parasitologist believes that there are few persons who have not harbored *Oxyuris* at one time or another in their lives.<sup>3</sup> Furthermore, a recent writer<sup>4</sup> refers to the portal of entry which intestinal worms give to bacteria and protozoa, by reminding us that we have not yet fully awakened to the prime importance of an uninjured mucosa. The relation of intestinal worms to appendicitis, he avers, is more than hypothetical, so that probably far more cases of appendicitis are the outcome of injury done by worms than is usually supposed. Shipley states that appendicitis is a commoner disease now than it was when vermifuges were more frequently given. It has been objected that very few of the thousands of appendixes removed are reported to contain parasites. Chandler points out, however, that they are seldom sought, might easily be overlooked, and might not be recognized as such if found. It is furthermore possible, he adds, that parasites which initiated the inflammation and ulceration might no longer be present in the appendix on its removal, as they are able to move about freely in the digestive tract.

#### PROBLEMS IN ANTIKETOGENESIS

The considerations of both the theory and the therapy of diabetes no longer deal solely or even preeminently with the fate of ingested carbohydrate so far as it is expressed by glycosuria. Something more than the metabolism of sugars is involved in the pathology of this disease. Second only to the occurrence of sugar in the urine or an abnormally high sugar content in the blood are the evidences of disturbance in the chemical transformation of other fragments of the foodstuffs, expressed in so-called ketosis. The elimination of acetone, acetoacetic acid or betahydroxybutyric acid is always indicative of a metabolic abnormality that of late has usually been associated with disturbances in the breakdown of fatty acids and their physiologic derivatives. It has long been known that ketosis, as expressed by ketonuria, tends to occur when sugar is not burned suitably or sufficiently in the organism. To combat ketosis, it has been customary to increase the amount of available carbohydrate. In the diabetic, this procedure tends to find its limitation, however, in the lowered carbohydrate tolerance of the individual. In a fanciful way it has often been remarked that fats burn in the flame of the carbohydrates; and Woodyatt<sup>5</sup> once added significantly that, when the proportion of fat is too great for the fire, it "smokes" with unburned fat and acetone substances. Sugars are thus antiketogenic or ketolytic in relation to the ketogenic fatty acids of the fats.

1. Rheindorf: Die Wurmfortsatzentzündung, 1920; Centralbl. f. Path. **32**, Part 4, 1921; Mitt. a. d. Grenzgeb. d. Med. u. Chir. **34**, Part 4, 1921.

2. Noack, F. K.: Appendicitis und Oxyuren, Mitt. a. d. Grenzgeb. d. Med. u. Chir. **35**: 407, 1922.

3. Stiles, C. W.: Osler's Modern Medicine **1**: 601, 1907.

4. Chandler, A. C.: Animal Parasites and Human Disease, New York, John Wiley & Sons, 1922, p. 204.

5. Woodyatt, R. T.: Acidosis in Diabetes, J. A. M. A. **66**: 1910 (June 17) 1916.



It now appears that somehow a "balance" is obtained under normal conditions between the ketogenic and the antiketogenic factors in metabolism. Shaffer<sup>6</sup> has developed the hypothesis that, in the usual routine of chemical transformations in the body, antiketogenesis, or the process by which the formation of the undesirable acetone substances is averted, consists in a reaction between acetoacetic acid, the first formed of the "acetone bodies," and a derivative of glucose (or of other antiketogenic substances), the compound being further oxidized; but that, failing to react with ketolytic substance, acetoacetic acid is resistant to oxidation, accumulates, and (after conversion in part into acetone and hydroxybutyric acid) is excreted. According to this idea, abnormal amounts of acetone bodies would appear among the metabolic products only when the rate of ketogenic catabolism exceeds the rate of anti-ketogenic (ketolytic) catabolism.

Proceeding in harmony with such a general view, several groups of investigators<sup>7</sup> have attempted to estimate the various interreacting factors supplied by the diet in cases of ketosis, in order to learn whether the facts tally with the assumptions. The proteins are potential sources of both ketolytic derivatives (sugar) and ketogenic products, the fats being primarily sources of the latter. Thus far, many data have been accumulated to show that, with dietaries in which the relative proportions of proteins, fats and carbohydrates are so selected as to produce a deficit of the ketolytic (or anti-ketogenic) groups, ketosis is bound to occur.

It is preeminently in diabetic patients, or persons with a lessened ability to utilize sugar, that the possibility of averting ketogenesis by increasing the carbohydrate intake fails. In the light of the newer studies, however, a high protein intake with its potentialities as a source of sugar in metabolism may also become objectionable, if the carbohydrate thus formed cannot be used. Obvious modes of adjustment to such a situation consist in decreasing the protein metabolism, the fat metabolism or even the total metabolism. Since protein and fat have both ketogenic and antiketogenic quotas, while carbohydrate has only the latter, the problem of securing an optimum for a person who shows both glycosuria and ketosis involves a knowledge of what he actually metabolizes rather than what he may eat. As Shaffer<sup>8</sup> has recently summarized it, interest is focused on the question: How much additional ketolytic substance, in terms of glucose or food carbohydrate, must be allowed the subject (of known size, activity and consequently energy requirements) in order to provide a safe margin over a bare ketogenic balance in his metabolic mixture? If, Shaffer adds, he

has sufficient "tolerance" to burn (utilize) such an amount, and receives it, ketosis will not appear; but if his tolerance is already lower, ketosis is unavoidable until the amount of the metabolic mixture (the total metabolism) is decreased to the point at which a ketogenic balance is attained. Many of the successful features in the modern trends in the dietotherapy of severe diabetes can be interpreted in the light of the foregoing.

## Current Comment

### INTRAPERITONEAL TRANSFUSION

In view of the seemingly miraculous results sometimes observed after the transfusion of blood in desperate cases, there can be little wonder that the procedure has acquired great prominence. Those who are accustomed to practice transfusion appreciate best what difficulties and disappointments as well as what unexpected discouragements may be involved. Aside from the problem of compatibilities of blood between donor and recipient, aside from the difficulties attending the avoidance of clotting by one method or another, there remains the equally serious feature of mastering the intravenous operative technic. Introduction of substances into the circulation or withdrawal of blood no longer appear as formidable as they did only a few years ago. Progress in therapeutic technic has involved, among other things, the acquirement of facility in the manipulation of blood vessels. Nevertheless, it would be unwarranted even today to speak of venipuncture as a simple or insignificant operation. One need only watch the conduct of this operation in every-day practice to appreciate the inelegancies or even crudeness of procedures that ought to be conducted with skill, dexterity and surgical perfection. All of the foregoing circumstances, therefore, seem to justify attempts to secure the benefits of blood transfer by methods other than those of intravenous injection. Perhaps intraperitoneal transfusion will prove to be a possible pathway to success. It might be assumed that red corpuscles thus introduced would find difficulties in reaching the circulation, where they are intended to function, out of the peritoneal cavity. Experiments recently conducted on rabbits at the University of Minnesota by Siperstein and Sansby<sup>1</sup> point interestingly to the probable rapid absorption of freshly citrated blood injected into the peritoneal cavity. That the new erythrocytes actually enter the blood stream is suggested by the rise in hemoglobin and cellular elements following transfusions in normal and anemic animals which cannot be accounted for by a mere concentration of the blood. Easily identified nucleated corpuscles of birds, when injected intraperitoneally into rabbits, can be recovered from the general circulation in fifteen minutes. After severe hemorrhage, the animals improved visibly following the transfusion. No hemoglobinuria could be demonstrated at any time. Consequently, the Minnesota investigators conclude that the intraperitoneal transfusion of freshly citrated

6. Shaffer, P. A.: Antiketogenesis, II, The Ketogenic Antiketogenic Balance in Man, *J. Biol. Chem.* **47**: 449 (July) 1921.

7. Shaffer, P. A.: *J. Biol. Chem.* **49**: 143 (Nov.) 1921. Woodyatt, R. T.: Objects and Method of Diet Adjustment in Diabetes, *Arch. Int. Med.* **28**: 125 (Aug.) 1921. Hubbard, R. S., and Wright, F. R.: *J. Biol. Chem.* **50**: 361 (Feb.) 1922.

8. Shaffer, P. A.: Antiketogenesis, IV, The Ketogenic-Antiketogenic Balance in Man and Its Significance in Diabetes, *J. Biol. Chem.* **54**: 399 (Oct.) 1922.

1. Siperstein, D. M., and Sansby, J. M.: The Intraperitoneal Transfusion of Citrated Blood, *Proc. Soc. Exper. Biol. & Med.* **20**: 111, 1922.



blood acts like a true transfusion and not like the absorption of nutrient material. Whether or not the procedure which they propose as "a therapeutic method of possible merit" is suitable for human conditions must be carefully considered by those who are expert in this field.

#### PROPOSED REORGANIZATION OF FEDERAL HEALTH ACTIVITIES

Elsewhere in *THE JOURNAL*<sup>1</sup> appears an account of a conference held in Washington last week on the proposal for a reorganization of the health activities of the federal government. The plan now submitted seems likely to receive serious consideration, as it involves no increase and no decrease in the activities of any of the agencies of the federal government affected, no changes of personnel, and no increase or decrease of appropriations. It proposes simply to assemble under one head—and that head a cabinet officer—in their present form, all of the activities of the federal government relating to health, education and social service, and also the work of the Veterans' Bureau. In the plan proposed, the affairs of each bureau will be administered by a technical head, designated as a director-general, who will be responsible to the secretary as the head of the department. The secretary of the proposed department of education, health and welfare will presumably change with the changes in the administration—just as other cabinet officers do—but this will be a matter of minor importance if competent director-generals remain in the service. Such matters of detail as the determination of just which bureaus, divisions and other agencies will be transferred to the proposed department, and to just which bureau each will be transferred, remain to be worked out. These matters, however, should not be allowed to stand in the way of the larger project. The immediate advantage of the proposed department, it is stated, lies in the fact that in it would be gathered under one responsible head a considerable group of government establishments engaged in work more or less related, and in activities which should be coordinated better than is now possible. The proposal should be given thoughtful consideration by the medical profession.

1. Reorganization of Federal Health Activities, General News, this issue, p. 262.

**National Office of Eugenics.**—A Belgian national office of eugenics has been established in the Solvay Institute of Sociology at Brussels, according to the *Eugenical News*. Dr. A. Govaerts is director of the office. An appropriation of 10,000 francs has been made by the Institute Solvay, it is stated, and Mr. Armand Solvay will make a personal gift of 7,000 francs. Among those who have been instrumental in the establishment of the office are: Dr. M. F. Boulanger, director of the School of the Feeble-minded at Waterloo and president of the Belgian Society of Eugenics; the surgeon general of the Belgian army; H. Velghe, director general of hygiene in the department of the interior; Dr. Bayet of the Royal Academy of Medicine; M. Berryer, minister of the interior and of hygiene, and senators, ministers and lawyers. At the meeting of the international commission, which was held recently in Antwerp, the mayor of the city announced that an appropriation had been made for a branch office of the national office of eugenics, to be located at Antwerp.

## Association News

### SAN FRANCISCO SESSION

#### Plan of Proposed Twenty-Five Day Tour, with Stops at Points of Interest

The secretaries of the constituent medical associations of the Eastern states have appointed a committee to arrange for a special twenty-five day tour to San Francisco for the session of the American Medical Association during the week June 25-29. The details and arrangements of the trip will be handled by an experienced tourist representative, who will accompany the party and have entire charge of the tour. In order to secure special train privileges, it will be necessary to have 125 or more persons subscribe to the tour. The committee in charge of this enterprise consists of Dr. E. Livingston Hunt, chairman, 17 West Forty-Third Street, New York; Dr. Wilbur B. Ward, 24 West Fiftieth Street, New York, and Dr. Malcolm C. Rose, 504 Knickerbocker Building, New York. The committee extends a cordial invitation to members and Fellows of the American Medical Association to join the party.

On the way to San Francisco, stops will be made at Chicago, Kansas City, Denver, Colorado Springs, Albuquerque, the Grand Canyon, San Bernardino, Riverside, Los Angeles and Yosemite National Park. On the return trip, stops will be made at Portland, Seattle, Victoria, Vancouver, Lake Louise, Banff, Winnipeg, St. Paul and Chicago. At each stopping place, visits will be made to points of interest, all details of transportation having been arranged for.

Meals will be served on the diners attached to the trains of the various railroads over which the tour will pass, except where stops of considerable length are made in a few cities, in which instances meals will be had at leading hotels. Those interested may secure complete information concerning the tour from Dr. E. Livingston Hunt, chairman of the committee in charge, 17 West Forty-Third Street, New York.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**Osteopaths Hit by Supreme Court Ruling.**—A decision rendered by the supreme court, Montgomery, January 4, in the case of the *State ex Rel. Leonora Bond v. the State Board of Medical Examiners* sets forth that osteopaths have no legal recognition in Alabama, and the state board of medical examiners cannot be forced to permit them to take the regular medical examination. The supreme court held that the state board of examiners could not be forced by mandamus to perform a function which is clearly within its own discretion.

### ARIZONA

**State Health Commissioner Named.**—Governor Hunt has appointed Dr. Frederick T. Fahlen, Phoenix, as state superintendent of public health to succeed Alexander M. Tuthill of Phoenix.

### CALIFORNIA

**Unconditional Pardon Granted Dr. Card.**—Dr. William S. Card, San Francisco, convicted of murder in the second degree in 1918 and sentenced to a minimum of ten years and a maximum of life, was recently granted a conditional pardon by Governor Stephens which made it imperative for Card to leave California on his release from San Quentin. The new governor, Friend Richardson, it is reported, has made the pardon unconditional.

### CONNECTICUT

**Yale University News.**—According to a new agreement between the board of permanent officers of the Yale Univer-



sity School of Medicine and the corresponding boards of Yale College and the Sheffield Scientific School, admission to the combined course in either graduate school will be on a competitive, instead of an automatic, basis as heretofore. Those seniors will be eligible as candidates for the course whose scholarship standing during their junior year has been 75 or above, and who have fulfilled the science and language requirements of the medical school. Their applications, which are due before July 1, following the completion of the junior year, will be considered in conjunction with all other applications, and the medical class will be chosen from the entire number of candidates. The Yale graduates who are admitted will take their entire first year medical work and receive credit for a B.A. or B.S. degree. The degree of M.D. is awarded after three years' additional study. As only sixty students are admitted each year from several hundred applicants, the decision to select all members of the first year class in the Yale Medical School on the same basis is of interest to premedical students throughout the country.

#### DISTRICT OF COLUMBIA

**Sentence Physician for Murder.**—According to reports, Dr. Herbert Bryson, Washington, convicted of second degree murder, September, 1922 (*THE JOURNAL*, Oct. 14, 1922, p. 1343), was sentenced, January 5, to serve from fourteen to eighteen years in the penitentiary. Dr. Bryson was convicted of killing a woman in Cassville, Pa., with whom he had eloped from Washington.

**Women's Welfare Association.**—January 5, the Women's Welfare Association, Washington, opened a special clinic for the treatment of both asthma and hay-fever in young people, as the first step in the antiasthma campaign for the benefit of young girls now being waged in the city. The clinic, in charge of an expert, will be held every Friday afternoon. The Women's Welfare Association had previously conducted an asthma and hay-fever clinic for adults as part of the association's clinic of applied immunology.—Under the auspices of the Woman's Welfare Association, Dr. George M. Kober, professor of hygiene and dean of the Georgetown University School of Medicine, Washington, delivered, January 14, the first of a series of public health lectures to be given semimonthly. His subject was "Progress in Health Conservation During the Last Fifty Years." The series will run through April. Subsequent speakers will be Drs. George W. McCoy, director of the U. S. Public Health Service Hygienic Laboratory; Hugh S. Cumming, surgeon general of the U. S. Public Health Service; Valeria H. Parker, director of the American Social Hygiene Association; William A. White, superintendent of St. Elizabeth's Hospital; Vernon Kellogg, secretary of the National Research Council, and Harvey W. Wiley.

#### ILLINOIS

**Free Dental Clinic for Cook County.**—It was announced at the annual meeting of the Chicago Dental Society, January 20, that a children's free dental clinic will be opened within ninety days at the Cook County Hospital in a building formerly used as a measles quarantine station, with funds from the Pageant of Progress Exhibition. It was also announced that \$3,000,000 had been given by an anonymous Chicagoan to found and maintain a large dental clinic.

**Smallpox Incidence Climbing.**—One hundred and forty-four cases of smallpox were reported to the state department of public health during the first two weeks of January as compared with 120 cases for all of December and decidedly fewer cases for the two preceding months. Counties reporting ten or more cases during the first two weeks in January were Bureau, Carroll, DeKalb, Henry, Lee and Will. Lee and Will counties reported the greatest prevalence.

#### Chicago

**Personal.**—Dr. Albert J. Ochsner spoke on "Medical Economics" at a meeting and dinner of the Will County Medical Society, at Joliet, January 10.—Dr. Frank C. Mann, Rochester, Minn., gave an address on "The Experimental Production of Peptic Ulcer" at the regular meeting of the faculty of the Laboratory of Surgical Technique of Chicago, January 26.—Dr. Joseph Welfeld, Chicago, held a skin and urologic clinic before the Kane County Medical Society at Elgin, recently.

#### INDIANA

**State Board of Medical Registration and Examination.**—At the annual meeting of the board in Indianapolis, January 10, Dr. William A. Spurgeon, Muncie, was reelected president.

All other officers were reelected as follows: Dr. Eldridge M. Shanklin, Hammond, vice president; Dr. William T. Gott, Crawfordsville, secretary, and Dr. Jesse W. Bowers, Fort Wayne, treasurer.

**Source of Smallpox Traced.**—The city health commissioner of Fort Wayne, Dr. John H. Gilpin, announced, January 9, that, following an exhaustive investigation by the board of health, the source of the recent epidemic of smallpox in the city had been determined. The disease was brought to Fort Wayne through two Harlan men who worked in the Pennsylvania shops and returned to their homes each evening. Several cases of smallpox developed in the families of these men. Ten cases occurred in the city, and following the development of several cases in the South Side High School, that institution was closed. More than 500 children were vaccinated at the board of health office, January 8 and 9.

#### IOWA

**Clinic Week.**—The twelfth annual clinic of the State University of Iowa College of Medicine, Iowa City, was held, January 16-17. Prof. John Whitbridge Williams, Baltimore, was the principal speaker. Dr. Lee W. Dean, dean of the college of medicine, and Walter A. Jessup, Ph.D., president of the university, also gave addresses.

#### KENTUCKY

**Health Surveys.**—A survey of the diet and care of Southern mountain children, by the children's bureau of the U. S. Department of Labor disclosed that only 16 per cent. of the children studied belonged to families which were able to provide the modest requirements of adequate living. Nearly half the children were living in homes in which the family income was so small as to make a minimum standard of care appear impossible. The children living on a diet consisting of milk and unbolted corn meal were found, to be well nourished. The other foods available in the community, such as corn bread and sorghum, dried beans and fat salt "middlings" so failed to supply the essentials of growth that undernourishment resulted when the dietary was composed chiefly of these foods. This survey was undertaken at the request of the Kentucky State Board of Health, to discover "why a state famous the world over for its prosperity should turn out so large a percentage of physically defective men as the draft record showed," and its findings have just been published under the title "The Nutrition and Care of Children in a Mountain County of Kentucky."—Dr. Thomas Haines, representing the National Committee for Mental Hygiene, is in Kentucky directing a mental hygiene survey in the rural schools of the state. He will also visit the eleemosynary institutions on invitation of the state board of charities and corrections to make a mental and conditional survey of their inmates. This work is the result of a resolution passed at the last session of the state legislature, inviting the committee to visit Kentucky.

#### MARYLAND

**Public Health Association Formed.**—At a meeting held in Lonaconing, January 8, the Allegany County Public Health Association was organized by Drs. Champe C. McCulloch, county health officer, Ralph Barnes, medical director of the Maryland Tuberculosis Association, and Harvey H. Weiss, city health officer of Cumberland. The purpose of the association is to assist in all public health activities in the county and finance a public health nurse for the county outside of Cumberland.

**Personal.**—Dr. William S. McCann, associate professor of medicine at Johns Hopkins University, Baltimore, has been appointed professor of medicine at the University of Rochester (N. Y.) Medical School. Dr. McCann was at one time Arthur Tracy Cabot fellow at Harvard University School of Medicine, Boston, and instructor of medicine at Cornell University Medical College, New York.—Dr. Karl M. Wilson, associate in clinical obstetrics at Johns Hopkins University, has been appointed professor of obstetrics at the University of Rochester Medical School.—Dr. Florence R. Sabin, Johns Hopkins Medical School, Baltimore, addressed the Physiological Society of Philadelphia, at its stated meeting, January 15, on the subject of "Recent Studies on Blood and Bone Marrow."

#### MASSACHUSETTS

**Boston Medical History Club.**—At the meeting held at the medical library, December 18, it was voted to change the constitution so that the annual meeting will be held in April



instead of December. Dr. Robert M. Green read a paper on "The Early History of Medical Journalism in New England," and Dr. Harvey Cushing spoke on "Pasteur."

**Personal.**—Dr. Francis H. McCrudden, chief of the medical service of the Robert Brigham Hospital, Boston, while it was operated by the U. S. Veterans' Bureau, has been made chief of the medical service of the U. S. Public Health Service Hospital, Washington, D. C. Dr. McCrudden is professor of therapeutics at Tufts Medical School, Boston.—Dr. Howard L. Quimby has been appointed city physician of Gloucester, and Dr. Philip P. Moore has been appointed a member of the Gloucester Board of Health.—Dr. Paul H. Provandie was recently elected mayor of Melrose.—Dr. William O. Hewitt was named health officer of Attleboro recently, to succeed Dr. Ralph P. Kent, who had held the position for eight years.—Dr. A. F. Budreski has been appointed city physician of Brockton.—Dr. Michael R. Donovan, health officer of Lynn, fell recently, and fractured his shoulder blade.—Dr. John I. McNamara has been elected a member of the board of health of Taunton.—Dr. F. DeBorgia Bergeron has been elected assistant city physician of Fall River.

**Harvard University News.**—The following changes in the faculty of the Harvard Medical School have recently been announced: Dr. Francis Howard Lahey, professor of surgery at Tufts College Medical School, Boston, has been appointed professor of clinical surgery; Dr. Charles Allen Porter has been promoted to the Homans professorship of clinical surgery; Dr. David Cheever, to an associate professorship of surgery, and Dr. Howard A. Lathrop, to the position of acting professor of clinical surgery during 1923. Dr. George P. Denny has been made director of appointments for medical alumni during the present year.—The university has received a payment of \$100,000 on account of the \$200,000 legacy left for cancer research under the will of the late Hiram F. Mills of Quincy, who died in October, 1921. The bequest was made to the medical school for the establishment of the Elizabeth Worcester Mills Fund, the income "to be devoted to the investigation of the origin and cure of cancer," in memory of his wife.—A fund of \$28,000 has also been received by the university by the bequest of the late Miss L. W. Walker of Boston, to establish scholarships at the Harvard Medical School "for the benefit of four needy and deserving students."—Mr. and Mrs. McKinlock of Chicago have donated the sum of \$500,000 to the university, for the erection of a freshman dormitory in memory of their son who was killed in action in France during the World War.

#### MICHIGAN

**Personal.**—Dr. George G. Barnett has been appointed full-time health officer of Ishpeming to fill out the unexpired term of Dr. David Littlejohn, who resigned recently.—Dr. A. H. Horn, formerly on the staff of the Michigan Home and Training School for the Feeble-minded, Lapeer, has been appointed assistant superintendent of State Hospital No. 1, Fulton, Mo.—Dr. F. J. Banting of Toronto, Canada, gave a lecture on "Insulin" before the Bay County Medical Society at Bay City, January 21.—Dr. Reuben J. Harrington has been appointed health officer of Muskegon, to succeed Dr. Charles F. Smith, who has resumed private practice. Dr. Eugene S. Thornton was reelected chairman of the board of health.—Drs. E. C. Warren and L. Fernald Foster were recently elected president and secretary, respectively, of the Bay County Medical Society.—Dr. Worth Ross has resigned as director of the division of child hygiene of the health department of Detroit, following twelve years' service. Dr. Earl W. May, Detroit, has succeeded him.

#### MINNESOTA

**Dr. Scofield Reelected.**—At the annual meeting of the Minnesota State Board of Health, Dr. Charles L. Scofield, Benson, was reelected president of the board.

**Society News.**—The Ramsey County Medical Society held its third annual clinic week, January 9-12, at St. Paul. Dr. Vilray P. Blair, associate in surgery, Washington University School of Medicine, and professor of oral surgery, Washington University Dental Department, St. Louis, gave an address on "Repair of Defects of the Face; Congenital and Acquired."—The annual meeting of the Northwestern Medical Officers' Association of the World War was also held at St. Paul, January 9.—The annual banquet of the Minnesota Academy of Ophthalmology and Otolaryngology was given, January 11, in conjunction with the clinic week of the county medical

society, and all the visiting physicians attending congresses in St. Paul were invited to attend. Dr. Meyer Wiener, St. Louis, gave an address. Another banquet was given, January 10, at the St. Paul Hotel, at which Dr. Dean Lewis of Chicago, professor of surgery at Rush Medical College, spoke on "Treatment of Fractures and Their Complications."

#### MISSISSIPPI

**Society News.**—At the annual meeting and banquet of the Central Medical Society held at Jackson, Dr. John H. McLain was elected president and Dr. Roland W. Hall, secretary-treasurer. A vice president was elected from each of the counties of Yazoo, Smith, Madison, Rankin, Hinds and Simpson, which constitute the society. Dr. James B. McElroy, Memphis, Tenn., gave an address on "Syphilis of the Aorta."—At the annual meeting of the South Mississippi Medical Association in Laurel, Dr. John R. DeVelling, Laurel, was elected president and Dr. Joseph S. Gatlin, Laurel, secretary-treasurer. Dr. Walter S. Leathers, state health commissioner, spoke on "Medical Progress and Its Economic Benefit to the State."

#### MISSOURI

**Missouri State Board of Health.**—At the annual meeting of the state board of health in Jefferson City, January 10, Dr. Emmett P. North, St. Louis, was elected president; Dr. Rudolph S. Vitt, St. Louis, vice president, and Dr. Cortez F. Enloe, Jefferson City, secretary and state health commissioner.

#### NEW YORK

**Physicians Will Not Protest Registry Measure.**—An attempt by a minority group of physicians to have the Kings County Medical Society hold a mass meeting to protest against the alleged endorsement by the New York State Medical Society of a bill providing for the annual reregistration of physicians throughout the state was defeated at the monthly meeting of the county society in Brooklyn, January 16. Dr. James Vanderveer, chairman of the legislative committee of the state society, went down from Albany to address the meeting on the subject. He stated that the measure was for the protection of the physicians and to weed out the men practicing medicine on the diplomas of dead physicians or on purchased or stolen diplomas, of which there were many in the state.

**Health Drive to Open in Syracuse.**—Syracuse has been selected as the up-state industrial city area for one of the three health and tuberculosis demonstrations to be made in New York with the aid of the Milbank Memorial Fund. The purpose of the demonstrations is to bring all the resources of science and of public and private agencies together in an intensive campaign to show the practicability of preventing tuberculosis and sickness. The demonstration will be carried on for five years, and it is estimated that the total expenditures will be between \$1,500,000 and \$2,000,000. Cattaraugus has been chosen by the administrators of the fund for a demonstration of what can be accomplished in a rural county in a health campaign. Both areas were selected on the recommendation of the executive committee of the tuberculosis and public health committee of the State Charities Aid Association, with the approval of the technical board of the Milbank Memorial Fund. The Milbank fund was created by the late Mrs. Elizabeth Milbank Anderson, in memory of her father and mother, Mr. and Mrs. Jeremiah Milbank, and the demonstrations will be in the nature of a memorial to Mrs. Anderson.

#### New York City

**Harvey Society Lecture.**—Dr. Philip A. Shaffer, professor of biologic chemistry, Washington University Medical School, St. Louis, will deliver the sixth Harvey Society lecture at the New York Academy of Medicine, February 10. His subject will be "Antiketogenesis: Its Mechanism and Significance."

**Association of the Alumni of the College of Physicians and Surgeons.**—The annual meeting of the association will be held, January 30, at the Columbia University Club, New York. Prof. Walter W. Palmer, Bard professor of the practice of medicine of Columbia University, will read a paper on "The Development of the Department of Medicine." A dinner will follow the meeting.

**Academy of Medicine to Expand.**—At a special meeting of the New York Academy of Medicine held, January 15, resolutions were presented which were adopted at the stated meeting, January 18, whereby the trustees of the academy have been empowered to sell the present property of the Academy



at 17 West Forty-Third Street at the time and on the terms that they may deem for the best interests of the academy. The trustees were further empowered to use, for the purchase of a new site for the academy building, the proceeds of the sale and also to sell any other property which the academy can properly dispose of, for this purpose. It is reported that the trustees have an option on a site for a new building at Sixtieth Street and Park Avenue.

#### NORTH CAROLINA

**Physicians to Charge Insurance Companies.**—At a meeting of the Guilford County Medical Society, in Greensboro, January 4, a resolution was unanimously passed to the effect that physicians of the county should in future charge a stipulated fee to insurance companies for giving information regarding some one of their patients. It was stated that a physician by giving information to an insurance company without written evidence that the patient was willing for the physician to give the information risked being sued for damages. A committee will be appointed by the medical society to confer with the several insurance companies on fixing a minimum charge for this service.

#### OREGON

**State Board of Health Elects.**—Dr. John H. Rosenberg, Prineville, has been elected president of the Oregon State Board of Health to succeed Dr. Charles J. Smith of Portland. Dr. Frederick D. Stricker, Portland, was reelected secretary of the board.

**University Dedicates Medical Building.**—On January 13 the new University of Oregon medical school building on the campus in Portland was dedicated and named Mackenzie Hall in memory of the late Dr. Kenneth A. J. Mackenzie who, until his death, was dean. More than a 1,000 guests assembled in the lobby of the new building and the dedication exercises were followed by an inspection of the plant by those attending. The new building is a four story, reinforced concrete structure which embodies the latest development in medical school construction. It houses the administrative offices, the library, the departments of bacteriology, pathology, experimental biology and a portion of the department of physiology, and also research laboratories for the clinical departments. The building cost \$226,000, one half of which was appropriated by the General Education Board and the other half by the state legislature. The General Education Board in addition appropriated \$50,000 for equipment. The new building trebles the size of the medical school plant and enables an increase in the student body to a total of 280 students or seventy in each of the four years.

#### PENNSYLVANIA

**Declines State Health Job.**—Governor Pinchot announced, January 19, that Dr. Victor G. Heiser, New York, had declined the offer of the post of state commissioner of health of Pennsylvania to succeed Dr. Edward Martin.

**Loving Cup for Dr. Martin.**—On his retirement as state health commissioner, Dr. Edward Martin was presented with a loving cup by Colonel John D. McLean, deputy health commissioner, on behalf of the employees of the department.

**Medical Club of Philadelphia.**—Dr. John G. Clark was elected president of the club at the annual meeting; Drs. Albert E. Roussel and Alexander MacAlister, vice presidents, and Dr. William S. Wray, secretary. Dr. George A. Knowles will succeed Dr. Lewis Adler, Jr., who resigned after seventeen years of service as treasurer.

#### TENNESSEE

**Personal.**—Dr. John F. Binkley, Nashville, has been appointed director of rural sanitation to succeed Dr. Eugene L. Bishop, who has been granted leave of absence to study at Johns Hopkins University, Baltimore.—Dr. James B. McElroy, acting dean of the University of Tennessee College of Medicine, Memphis, was recently elected president of the Memphis and Shelby County Medical Society at the annual banquet, to succeed Dr. Frank D. Smythe.—Dr. William E. McGaha, who with Dr. Harry J. Lemmon, has been operating the Church Street Hospital, Newport, has retired from the corporation and Dr. Lemmon is now the sole owner, it was recently announced.

#### VIRGINIA

**Public Health Course.**—To meet the need of trained health workers in the state, courses in public health work and

sanitary inspection are offered by the University of Virginia, under the direction of Dr. William S. Keister, health officer of Charlottesville, in cooperation with the state board of health. These courses began January 3, and those who apply to the department of medicine may be admitted at any season of the year. One course is arranged for medical graduates, who will receive twelve weeks' of intensive practical training in field and office work, and the other course is arranged for the training of sanitary inspectors, who will receive ten weeks of field work under the supervision of health officers. Those who complete the course will be certified by the university authorities.

#### WEST VIRGINIA

**New Hospital Opened.**—The Guyan Valley Hospital will be opened at Logan, March 15, it was recently announced. The institution contains ninety beds. The superintendent has not yet been appointed.

#### WISCONSIN

**County Medical Meetings.**—At the annual meeting of the Fond du Lac County Medical Society, Dr. John J. Rehorst was elected president and Drs. David N. Walters and D. John Twohig, were reelected secretary and treasurer, respectively.—Drs. Guerdon C. Buck, Platteville, and Dr. Carlton H. Andrew, Platteville, were elected president and secretary-treasurer, respectively, of the Grant County Medical Society at the annual meeting in Lancaster, December 22.—The Sheboygan County Medical Society elected Drs. Joseph C. Elfers and Gustav J. Hildebrand, president and secretary-treasurer, respectively, for 1923.

#### CANADA

**University News.**—That the University of Toronto is in urgent need of \$60,000 to purchase "Insulin" for treatment of the thousands of people suffering from diabetes who are daily applying for treatment was the information given out by Col. A. E. Gooderham, chairman of the university committee on Insulin, recently. According to Colonel Gooderham, the problem of funds for the purchase of Insulin is one that should be settled by the provincial government. At present, only about twenty patients can be treated each day.

**Public Health News.**—Dr. Gordon Bates, Toronto, and Dr. J. J. Hagerty of the Dominion Department of Health, Ottawa, recently left for New Brunswick, where they will address a series of public meetings on social hygiene, and form a number of new social hygiene councils. Dr. William F. Roberts, minister of health for New Brunswick, is arranging an itinerary, which will include the larger cities of the province.—The Manitoba Social Hygiene Council is asking the provincial government to make a certificate of health necessary for the securing of a marriage license, so as to bar the marriage of those suffering from social diseases.

#### GENERAL

**Influenza.**—An apparently mild form of influenza is prevalent in several states. According to *Public Health Reports*, Mississippi reported 3,048 cases for the three weeks ending January 6; North Carolina, 2,277; West Virginia, 959; Georgia, 872, and Alabama, 503. In the fifth week of 1920, Illinois reported 30,330 cases, and in 1922 New York alone reported 5,731 cases for the week ending February 4.

**American Legionaries Elect.**—The annual dinner of the Caduceus Post 818, American Legion, was held at the Harvard Club, New York, January 11. This post represents a membership of 400 ex-service men who have been connected with the medical, dental or sanitary corps. Dr. Henry C. Coe was elected commander for the ensuing year; Drs. S. W. Wadham, W. C. Fisher and Mr. Gerstner, vice commanders, and the Rev. Herbert Shipman, treasurer. Dr. DeWitt Stetten and Dr. Royal S. Copeland gave addresses, following the dinner.

**Physicians' Prescriptions to Be Protected.**—Orders have been issued by the internal revenue commissioner at Washington, D. C., to bottle all bulk liquors now held in bond and to guarantee them as to proof and quality, in order to protect the public from poisonous whisky bought at drug stores on prescriptions. In an effort to curb dealings in denatured and industrial alcohol, the federal prohibition authorities have issued orders for the revocation of scores of dealers' permits, among these being that issued to one of the largest alcohol producing plants in the country, it is stated.



**The Atlantic Medical Monthly.**—About a year ago, Dr. Alexander R. Craig, late secretary of the American Medical Association, suggested to the Board of Trustees of the Pennsylvania Medical Society that a consolidation of the medical journals of Delaware, Maryland and Pennsylvania would centralize medical thought and purpose. A favorable impression was made, and Dr. Craig was authorized to present the suggestion in an unofficial capacity to the other two state societies. The Medical Society of Delaware was receptive, and at a conference of the publication committees a tentative agreement was made. After passing through the usual official channels, the suggestion will appear in concrete form in April, as the *Atlantic Medical Monthly*. The new journal will represent the combined journals of Pennsylvania and Delaware, and will be a successor to the *Pennsylvania Medical Journal*. The *Atlantic Medical Monthly* will bring closer together the physicians in these neighboring states, and will be a monument to one whose life was devoted to the medical profession.

**Proposed Bill for Narcotic Control.**—Senator France introduced in the Senate a measure providing for financial aid from the United States for the states in the prevention of drug addiction and for the care and treatment of drug addicts. The bill appropriates \$3,000,000 for the fiscal year ending June 30, 1920, and \$2,000,000 for the fiscal year ending June 30, 1921. The Secretary of the Treasury is authorized to cooperate with the states, through their respective state boards or departments of health, narcotic commissions or other state or municipal officers in charge of the control of the production or distribution of narcotics and habit-forming drugs, or in charge of the care and treatment of drug addicts resident within the confines of their states. He is empowered to allot among the states appropriations of federal money for this purpose to an amount not to exceed the sum appropriated by the state for the same purpose. The Secretary of the Treasury may also permit the use by any state or municipality of any hospital or other building, equipment and medical supplies, including any narcotic drugs, in the possession of and under the control of the U. S. Public Health Service.

**Narcotic Regulations Modified.**—Regulations governing the prescribing of narcotics in the treatment of incurable diseases and for aged and infirm addicts whose physical collapse from the withdrawal of the drug might be fatal have been modified by the Commissioner of Internal Revenue, with a view to preserving as far as possible professional secrecy with respect to such cases. The commissioner has heretofore ruled that an order purporting to be a prescription, issued to an addict or habitual user of narcotics, not in the course of professional treatment in an attempted cure of the patient but for the purpose of providing narcotics to keep him comfortable by maintaining his customary use, is not a lawful prescription; and that persons filling and receiving drugs under such an order, and the person issuing it, shall be regarded as guilty of violation of the law. Exceptions have been recognized, however, in the treatment of incurable diseases and of aged and infirm addicts. In the treatment of incurable diseases, it has been required that it be endorsed on the prescription that the drug is dispensed in the treatment of an incurable disease; under the treasury decision just issued, the physician may endorse the prescription in that manner, or endorse simply, "Exception (1) Art. 117." In the treatment of aged and infirm addicts, the physician has heretofore been required to endorse on the prescription that the patient is aged and infirm, giving age, and that the drug is necessary to sustain life; under the recent decision, the physician may endorse his prescription as heretofore, or he may endorse it, "Exception (2) Art. 117." By using either of the cryptic alternatives now allowed, a physician may limit the chances of undesirable disclosures of the patient's condition. The druggist who fills a prescription is no longer required to obtain on the back of it the signature of the person who secures the drug prescription. It is sufficient that the name of such person appear.

**Reorganization of Federal Health Activities.**—On Wednesday, January 17, a conference was held in the office of Brig.-Gen. C. E. Sawyer, physician to President Harding and chief coordinator of the federal Board of Hospitalization, to consider plans for the coordination of the health activities of the federal government. In addition to General Sawyer and the Surgeon-Generals of the Army, the Navy and the Public Health Service, there were present Dr. A. W. Belting, president Eastern Homeopathic Medical Association, Trenton, N. J.; Lieut.-Commander J. T. Boone, Medical Corps, U. S. Navy; Dr. Claude A. Burrett, Rochester, N. Y.; Dr. Gilbert

Fitzpatrick, chairman, Executive Committee, American Institute of Homeopathy, Chicago; Dr. C. W. Garrison, executive secretary and state health officer, state board of health, Little Rock, Ark.; Dr. James A. Hayne, secretary and state health officer, state board of health, Columbia, S. C.; Dr. A. T. McCormack, president, Conference of State and Provincial Health Authorities of North America, and secretary, state board of health, Louisville, Ky.; Dr. R. M. Olin, state health commissioner, Lansing, Mich.; Col. W. O. Owen, Washington, D. C.; Dr. W. A. Pearson, dean, the Hahnemann Medical College and Hospital, Philadelphia; Dr. Ennion G. Williams, state health commissioner, Richmond, Va., and Dr. William C. Woodward, executive secretary, Bureau of Legal Medicine and Legislation, American Medical Association. Explaining the purposes of the meeting, General Sawyer said:

For some time there has been a plan on foot for the development of a Department of Public Welfare. The Reorganization Committee of the government has agreed that it is essential that such a department be created, and since there is likely to be early preliminary action on this subject, I deem it advisable that the medical profession should be informed as to a tentative plan now under consideration, to be presented to Congress, which affects the Public Health Service of the United States. After a careful study of the necessity of a Department of Public Welfare, it has been concluded that such a department should be organized, incorporating in its scope, education, public health, social service and the Veterans' Bureau. This department would be conducted under a new cabinet officer, with an assistant secretary, and one director-general for each of the subdivisions of the department, the subdivisions to be sectionized as found necessary in the fulfillment of the completed plan.

According to the plan submitted by General Sawyer, the proposed department will be known as the Department of Education, Health and Welfare, with a secretary who is to be a cabinet officer at its head, and an assistant secretary. The plan calls for the creation of a bureau of education, a bureau of health, a bureau of social service, and the Veterans' Bureau, each with a director-general at its head. It is to be expected, of course, that the secretary, and possibly the officer next in rank, the assistant secretary, will, because of their rank and their relation to the determination of the policies of the government, change with each administration. The several director-generals, however, are to be the technical heads of the bureaus, and as more or less permanent officers to preserve continuity of policy and administration. The plan calls for no enlargement or reduction in the activities of the several branches of the federal government now engaged in work in the lines of activities to be incorporated in the new department. It is proposed that the various agencies of the federal government (except those within the army and navy) relating to health, education, social service and the rehabilitation of veterans be transferred to the new executive department, each to carry with it its present powers, appropriations and personnel, intact. It was suggested that the prospect was never better than now for the establishment of medicine as a fixed unit, associated with other departments of the government, providing in a most satisfactory and effective way for carrying out the highest ideals of modern medicine. An executive committee to carry forward the work of the conference was appointed by the chairman, consisting of Drs. Fitzpatrick, Olin and Woodward.

## LATIN AMERICA

**Further Restrictions on Foreign Physicians in Mexico.**—According to a presidential decree of Dec. 23, 1922, validation of foreign diplomas in Mexico will hereafter be governed by regulations issued by the National University of Mexico City. According to these regulations, foreign diplomas will be revalidated in Mexico by the National University only when reciprocity agreements exist (Mexico has such a treaty only with Japan) and the foreign diploma has been issued by an acceptable institution. Foreign physicians must otherwise submit to a general examination in Spanish. It is believed that these requirements, if enforced, would disqualify the majority of American physicians in Mexico now practicing by sufferance or by verbal agreement.

**Personal.**—The two prizes offered by the Sociedad Médico Quirúrgica of Guayaquil for the best reviews of the work of Pasteur were awarded to Dr. F. López of Quito and Dr. Luis Espinosa Tamayo of Guayaquil. A silver tablet with inscription was the first prize. Both articles are to be published in the *Anales* of the society.—Dr. Nin Posadas of Buenos Aires has been elected foreign corresponding member by the newly reorganized Italian Urologic Society.—Drs. Carlos A. Arteta and A. J. Valenzuela have returned to Guayaquil from their trip to Cuba. They were the official delegates from Ecuador to the recent Latin-American Medical Congress at Havana.—Dr. J. M. Estrada Coello was



the official delegate from Ecuador at the Third American Child Welfare Congress held recently at Rio. He is one of the five editors of the *Anales*, the organ published by the Sociedad Médico Quirúrgica of Guayaquil.—At the time of the Brazilian centennial celebration, the president of Portugal, Dr. Antonio José de Almeida, who is a retired physician, was one of the guests. The National Academy of Medicine held a special meeting in his honor, and elected him to honorary membership.

#### FOREIGN

**Chair of Alcohol Research Established.**—A foundation has been established by a retired merchant of Osaka, Japan, and the sum of 100,000 yen (\$50,000) has been granted for placing in one of the universities of Japan a chair of alcohol research, with the object of putting temperance work in that country on a sounder basis. This decision results, it is stated, from efforts of the American Association for Alcohol Research, founded in 1921 by Capt. Richmond Hobson, now seeking a similar endowment for a chair of alcohol research in an American university.

**Medical News from China.**—The China Medical Board of the Rockefeller Foundation has made a conditional gift of \$75,000 in gold to the Peking Union Medical College for the erection of one of the two science halls which are provided for in the plans for a group of buildings to be erected on a 300 acre site. The gift is contingent on the raising of an equal amount for the erection of the other science hall. A campaign to raise the \$1,000,000 necessary for the erection of the new buildings was recently launched by L. Leighton Stewart, president of the university.—The revised English edition of "Infant Care," a publication of the federal children's bureau, is being translated into Chinese and adapted to Chinese conditions by Dr. Vivian S. Appleton, associate secretary of the Council on Health Education, Shanghai, and Mrs. Chen.

**American Women Establish Quarantine Station in Greece.**—Dr. Mabel Elliott, formerly of Benton Harbor, Mich., recently arranged with the Greek government to take over the entire island of Macronisi, in the Grecian Archipelago, 30 miles south of Athens, and equip it with facilities for handling 10,000 refugees at one time, in an effort to cope with the unprecedented outbreak of disease among the Near East refugees in Greece. Dr. Olga F. Stastny of Wilber, Neb., will be in charge of the station and will have a staff of forty Greek physicians and nurses. The cost of the project is estimated at \$10,000, which will be entirely defrayed by the American Women's Hospital Association, of which Dr. Elliott is director. The island, which is 8 miles long and 2 miles wide, is uninhabited.—Dr. Esther Lovejoy, New York, president of the American Medical Women's International Association, has just returned to Greece to continue her relief work among the refugees.

#### Deaths in Other Countries

**Dr. Kenneth Macleod** at Southampton, December 17, aged 79. Dr. Macleod formerly served in the Indian Medical Service and for many years was professor of surgery at Calcutta Medical College and health officer of Calcutta; founder, and at one time president, of the Calcutta Medical Society; later he was appointed professor of military medicine at the army medical school, Netley, England, and was president of the section on tropical medicine of the British Medical Association. For twenty years, he edited the *Indian Medical Gazette*, and he was the author of many well known medical works.—**Dr. Max Nordau**, at Paris, aged 74. He was born at Budapest but practiced medicine at Paris, where he wrote the iconoclastic works, "Conventional Lies" and others that have made his name well known and helped to break the spell of *Gottesgnadenthum*. He spent the years of the war in Spain.—**Dr. A. Bonome**, professor of pathologic anatomy and bacteriology at the University of Padua, aged 66.—**Dr. Erico Coelho**, professor of obstetrics at the University of Rio de Janeiro, senator, and author of numerous scientific and literary works.—**Dr. V. Godinho** of S. Paulo, Brazil, author of a textbook on microbiology.—**Dr. L. Dedet**, at Paris, a retired naval medical officer.—**Dr. G. Domenech y Lorda**, Villaclara, Cuba, public health inspector for the province.—**Dr. Herman Legrand**, the public health official for France at Alexandria, and physician to the European Hospital.—**Dr. Mario Studart** of Rio de Janeiro.—The *Archivos Brasileiros de Medicina* reports the death of **Dr. T. Pimentel de Ulhoa** of Uberaba, and of **Dr. J. Hardmann**, prominent in the public health and hospital service of the state of Parahyba.

#### CORRECTION

**The Names of Proprietary Preparations.**—In the letter by Dr. Oliver T. Osborne, *THE JOURNAL*, January 13, page 127, the first sentence should read "It should not be suggested," the word "not" having been omitted.

### Government Services

#### School of Neuropsychiatry in Veterans' Bureau

A school of neuropsychiatry has been established at St. Elizabeth's Hospital, Washington, D. C., by the U. S. Veterans' Bureau. The difficulty of obtaining physicians experienced in the treatment of patients with mental and nervous troubles made it desirable for the Veterans' Bureau to establish this special school to train physicians to care for such cases.

The school will be under the direct charge of Dr. Frank F. Hutchins, clinical director of neuropsychiatry, U. S. Veterans' Bureau, and professor of mental and nervous diseases, University of Indiana. The present class attending the school is composed of fifty graduate physicians, all ex-service men, carefully selected from 1,200 applicants. These physicians, on satisfactory graduation from the course, have guaranteed to give at least two years' continuous professional service to the beneficiaries of the U. S. Veterans' Bureau. Each course will extend over a period of about four months. There will probably be not more than two courses annually. Courses will be offered as long as it appears necessary in order to meet bureau requirements. Instruction will cover the necessary reviews of the fundamentals, followed by clinics and lectures on the various forms of nervous and mental diseases, including endocrinology. Special attention will be devoted to diagnostic methods, general care of patients and methods of treatment. Students will have actual experience in practical work. General problems of hospital administration, medicolegal questions, rehabilitation methods, psychometric examinations and other related matters will be adequately dealt with. The entire course covers a period of four months. It consists of 176 lectures and approximately 500 hours of laboratory work.

The main part of the course will be given at St. Elizabeth's Hospital, a government institution for the insane, at Washington, D. C., which offers unusual and unexcelled facilities for such work. There are nearly 4,000 patients and case histories of more than 20,000 discharged patients immediately available for study. Here are all classes of nervous and psychotic diseases, while other public hospitals in Washington will provide abundant clinics in so-called functional diseases, borderline cases and the milder types.

The teaching staff that has been selected to give this course in neuropsychiatry is significant. A number of America's most eminent neurologists and psychiatrists will come to deliver lectures on special topics, and members of the staff at St. Elizabeth's will include lecturers and members of the medical departments of the Army, the Navy, the Public Health Service, the United States Veterans' Bureau and the U. S. Department of Agriculture.

#### Federal Hospitalization Plan

The seven or more departments of the government operating federal hospitals in different parts of the country will be consolidated under one responsible head, according to plans of the Secretary of the Treasury, who will probably make such recommendation to Congress within a short time. The Secretary is planning to submit to Congress a special report now being drawn up by the chairman of the Treasury Consultants on Hospitalization, Dr. W. A. White, which proposes a federal unification of hospitalization. At present, the government is operating hospitals located all over the United States under numerous and dissociated control, including the Army, Navy, U. S. Public Health Service, the Interior Department, the U. S. Veterans' Bureau and others. These authorities should be centralized, according to the report being prepared by Dr. White and his committee of physicians and surgeons, who have been serving the government without pay. A federal plan for hospitalization should be carried forward with an eye not only to the present, but



also to the future, the report will point out, taking into consideration the need for old soldiers' homes as veterans of the World War grow old, and the possible need for marine hospitals in case the projected merchant marine develops as expected. The idea of such a federal plan is approved by Brig.-Gen. Charles E. Sawyer, chief coordinator of the federal Board of Hospitalization. This board, while performing some of the functions of a central head for the various hospital agencies of the government, does not have enough power to handle a program of widespread control, lacking sufficient authority from Congress. One of the difficulties in the administration of the present hospital program has been the zeal of the various department heads to forward their own particular organizations. The federal Board of Hospitalization, which acts as official adviser to the President in all hospital matters, consists of the present officials in charge of dissociated control: Brigadier-General Sawyer, chief coordinator; Col. Charles E. Forbes, director of the U. S. Veterans' Bureau; Dr. W. A. White, chairman of the Treasury consultants; Surgeon-General Ireland of the United States Army; Surgeon-General Stitt of the United States Navy; Surgeon-General Cumming of the U. S. Public Health Service; Gen. George H. Wood of the National Homes of Disabled Volunteer Soldiers, and Charles M. Burke, commissioner of Indian affairs.

The White committee report on a comprehensive federal plan for hospital management will not only outline, in general, what such a reorganization would be able to do for the future of government hospitals and government beneficiaries of all kinds, but will also be backed by a mass of documentary evidence collected by the committee in its extensive study of the problem since March, 1921, when the committee was named by Secretary of the Treasury Mellon. The report will give a list of the hospitals built by the committee in cooperation with the supervising architect's office, under Assistant Secretary of the Treasury Clifford, in the construction of which the committee expended \$18,600,000, appropriated under the so-called Langley bill. Another part of the White report bearing directly on the necessity of a centralized federal hospitalization plan will include the studies which the consultants made preliminary to giving their advice on the location, site and character of these hospitals. Not only will this federal centralization be recommended, but the report will also propose cooperation of the states in the matter of hospitals.

#### Withdrawal of Army Officers from Veterans' Bureau

Regular Army officers on duty with the U. S. Veterans' Bureau have been withdrawn by order of Secretary of War Weeks. Four of these officers will be relieved immediately, while the others will be permitted to remain with the Veterans' Bureau until several weeks have elapsed. Those officers who will be relieved immediately are: Lieut.-Col. Roger Brooke, chief of consultants; Lieut.-Col. Paul S. Halloran, in charge of inspection section, medical division; Major Raymond W. Bliss, assistant chief, hospital division, all three of whom are medical officers; and Major George P. Ahern of the employment service, rehabilitation division. The following officers will remain on duty for a short time with the U. S. Veterans' Bureau, although they will be withdrawn under Secretary of War Weeks' order: Lieut.-Col. R. L. Reeves, assistant director in charge of rehabilitation; Lieut.-Col. R. U. Patterson, Medical Corps, in charge of the medical division, and Major John G. MacDonnell, who has been liaison officer between the War Department and the Veterans' Bureau.

#### Changes in Veterans' Bureau

Reorganization of the administration of the U. S. Veterans' Bureau was effected by Col. Charles R. Forbes this week through changes in many of the important executive posts. Col. George E. Ijams of Baltimore was named executive officer of the bureau to succeed Dr. T. Hugh Scott, who, at his own request, was transferred to be commanding officer of the Muskogee, Okla., hospital. Colonel Ijams has been chief of the district organizations in the bureau. His successor has not yet been named. To succeed Col. Robert U. Patterson, who has been withdrawn from the bureau to his duties in the regular Army, Dr. L. B. Rogers, who is now inspecting hospitals in the Philippines, was appointed as assistant director in charge of the medical division. Dr. P. C. Rawles of the medical service, Dr. B. C. MacNeil of the inspection service and Dr. E. A. Turner of the administrative force of the medical division were assigned to service in the field.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Jan. 1, 1923.

#### The Increase of Cancer

All statistics seem to show an apparent increase of cancer. The recently issued report of the registrar-general for Scotland for the year 1921 gives the mortality due to cancer as 122 for each hundred thousand of the population, a rate higher than that of any previous year. The health officer of Kent also states that in 1921 the death rate from cancer was the highest on record in the county, 133 for each hundred thousand. In 1910, the rate was 90, so that possibly an increase of nearly 50 per cent. has taken place. In both Scotland and Kent, cancer caused a higher mortality than any other disease excepting heart disease, and in the former country the rate exceeded that of tuberculosis by 50 per cent. The usual factors controlling reports of cancer deaths should, of course, be taken into consideration.

#### Research in Diabetes

The directors of a business firm (Ashton & Parsons) have made a gift of \$13,000, to be paid in instalments of \$2,000 a year over a period of six and one-half years to Guy's Hospital, to be spent in research into diabetes mellitus and other related diseases of metabolism. The money will be used to provide for the services of an additional worker in the hospital, to aid the investigations into the preparation and use of "insulin," the substance discovered by Banting and Best at Toronto University.

#### Milk Regulations

The ministry of health has issued regulations prescribing conditions under which milk may be sold, under four special designations. In the production of "Grade A milk" the herd must be kept separate from all other animals, marked for identification and registered. Every animal must be examined once every three months by a veterinary surgeon approved by the ministry. If an animal shows any evidence of disease likely to affect the milk, it must be removed from the herd. If tubercle bacilli are found in the milk, the producer must take all the necessary steps to ascertain which animals are diseased, and remove them from the herd. The milk must either be bottled at the dairy farm or be consigned from the dairy in an unventilated sealed container, with the address of the dairy on it, the day of production, and the words "Grade A milk." The milk must be delivered to the consumer either (a) in bottles with a tightly fitting disk and a cap overlapping the lip, so fastened as to form a complete seal; or (b) in containers of no less capacity than 2 gallons, closed with a tightly fitting cover and sealed. The milk must not be treated with heat at any stage.

"Grade A (tuberculin tested) milk" must be produced under the same conditions, with the additional regulation that every animal in the herd must be tested with tuberculin at intervals of six months. No animal must be added to the herd without having been tested with tuberculin in the preceding three months. Reactors are to be removed from the herd forthwith.

"Certified milk" is the highest grade. It is produced subject to all the foregoing conditions with the additional regulation that all the milk is to be bottled on the farm immediately after production in the manner described above.

"Pasteurized milk" must be produced by means of approved apparatus and methods; the milk is to be retained at a temperature of from 145 to 150 F., for at least half an hour and immediately cooled to 55 F. or lower. It is not to be



heated more than once or otherwise treated. "Flash" methods are not allowed.

The bacteriologic standards required are that at no time before delivery to the consumer shall these standards be infringed:

	Maximum Number of Bacilli for Each C.c.	B. Coli Ab- sent in
Grade A.....	200,000	0.01 c.c.
Certified .....	30,000	0.10 c.c.
Pasteurized .....	30,000	0.10 c.c.

In instructions to the licensing authorities, the ministry suggests that samples for bacteriologic examination shall usually be taken about once a month. Producers of the specially designated milk must be licensed and the licenses may be revoked because of unfavorable reports.

## PARIS

(From Our Regular Correspondent)

Dec. 29, 1922.

### The Centenary of Pasteur

Many ceremonies have marked the celebration of the centenary of Pasteur, but the three most significant in this country were those that took place at the Academy of Medicine, the Pasteur Institute and the Sorbonne.

At the Pasteur Institute were gathered the relatives and the pupils of the great scientist; also the delegates of all the societies to which he belonged. Arrangements for the celebration that was held at the Sorbonne were made by the Association générale des étudiants de Paris, under the chairmanship of M. Léon Bérard, minister of public instruction, and of M. Paul Strauss, minister of public health. Many delegates from schools and colleges—also several foreign delegates, were present.

At the Academy of Medicine addresses were delivered by the president, Professor Béhal, and by Professors Delezenne, Widal, Delbet, Wallich, Barrier and Calmette.

### PASTEUR'S CONTRIBUTIONS TO BIOLOGY

As well expressed by Professor Delezenne, never has biology undergone so decided a revolutionary process as that which marks the advent of Pasteur. He delved into the infinitesimally small things of life, and his researches shed new light on the constitution of matter, and even extended to the limits of the great problem concerning the origin of living matter, the fundamental characteristics of which he associated with molecular dissymmetry and the subtle modifications that Nature so readily accomplishes but which the chemist can never produce. If Pasteur's life work may be said to have won the admiration of men because of the many blessings that it has brought to humanity, it is perhaps in the field of general biology that we can best measure its amplitude; for its scope and its practical value are, to a great extent, dependent on the light it has shed on the most essential problems of life.

### PASTEUR'S CONTRIBUTION TO MEDICINE

In his discourse, Professor Widal pointed out the profound transformation that the discoveries of the great scientist had brought about in medicine. "All was obscurity and confusion as to the origin of transmissible diseases, when suddenly all became clarified through the light of his genius." The science of medicine is indebted to Pasteur for methods and technical procedures which are so exact and so perfect that nothing is done in any branch of bacteriology, which does not seem like a ritual repetition of Pasteurian procedures. Sterilization of material for study, cultivation of bacteria in culture mediums, isolation of micro-organisms in pure culture, differentiation of anaerobic and aerobic species, and reproduction of diseases by the inoculation of animals, are some of the methods which Pasteur created and which have transformed our methods of medical research.

### PASTEUR'S CONTRIBUTIONS TO SURGERY

According to the idea brought out by Professor Delbet, Pasteur gave to surgery the most splendid gift that it has ever received; namely, operative safety. The conquests of modern surgery have become possible through the work of Pasteur. But Delbet pointed out that the endeavor to combat infection by means of antiseptics is not based on a genuine Pasteurian doctrine; for, though Pasteur at first attached great importance to contamination through the air, he very soon found that the air contains few bacteria, and he reached the conclusion that infection is transmitted mainly by contact. It was in the direction of asepsis—sterilization by means of heat—that Pasteur hoped to see surgery develop. Delbet quotes these words of Pasteur to show how the scientist outlined the program of the surgeon:

If I had the honor of being a surgeon, convinced as I am of the dangers to which the germs that are found on the surface of all objects expose us—more particularly in the hospitals—not only would I take care to use only instruments that are perfectly clean, but, after having subjected them to a rapid flaming, I would use only lint, bandages and sponges that had previously been exposed to hot air of a temperature from 130 to 150 C., and I would use only water that had been subjected to a temperature of from 110 to 120 C.

By his remarkable intuition, Pasteur had caught a glimpse of the rôle of devitalized tissues, which, at a later period (during the World War), was to attract the attention of surgeons. In speaking of wounds infected with *Vibrio septicus*, Pasteur wrote:

But if, under such conditions, a single blood clot or a single fragment of dead tissue remains in some recess of the wound, . . . immediately the septic germs will give rise, in less than twenty-four hours, to an infinite number of vibrios through multiplication by cell division, which are capable of producing a fatal septicemia in a short time.

It was not until the middle of 1915 that surgeons began to carry out, in the treatment of wounds, the systematic resection of devitalized tissues, and this marked a veritable transformation in the evolution of wound treatment. Lesions which, at the beginning of the war, without being cleansed or having the dead tissue removed, were treated with an antiseptic, dragged along, if death did not result, for weeks and months, leaving fistulas and weakness in their train, whereas they healed in from ten to twelve days when treated by resection of dead tissue, and no sequels resulted. Five hundred thousand men, wounded in 1918, returned to the front before the declaration of the armistice. Here, as well, the surgeons simply learned to apply the teachings of Pasteur.

### PASTEUR IN RELATION TO OBSTETRICS

In obstetrics, as in medicine and in surgery, the discoveries of Pasteur mark the beginning of a new era. As early as 1847, it is true, Semmelweis had recommended that the physician attending in childbirth should wash his hands with chlorinated lime before touching his patient, and as the result of this precaution the mortality from puerperal fever had dropped to around 1 per cent. But this discovery had no echo, unless it was at Edinburgh, where Simpson followed this example. It was not until twenty years later that Pasteur, by teaching a more accurate conception of the etiology of puerperal fever, brought about radical changes in the treatment of puerperants and made almost negligible the mortality from puerperal infection, which had formerly ranged from 25 to 50 per cent.

### PASTEUR'S INFLUENCE ON PUBLIC HEALTH IN GENERAL

In 1879, Pasteur took up, in his vineyard at Arbois, a study of the origin of yeasts that cause the fermentation of grape juice. By covering the grapes with cotton, for some time before they mature, or by protecting them with glass, he found that he could prevent the introduction of yeast spores by the air, the wind and insects, and the juice of these grapes did not ferment, whereas the juice of grapes ripened in the



open air ferments soon after it is extracted. From this observation he drew at once the following conclusion:

Are we not justified in believing, by analogy, that the day will come when preventive measures, easy of application, will put an end to these scourges which, appearing suddenly, bring terror and sadness to a whole people, such as yellow fever and bubonic plague?

Calmette rightly designates this prophecy as wonderful; for, less than a quarter of a century later, yellow fever and the bubonic plague ceased to be, along with cholera, dread-inspiring experiences of humanity.

It was these studies on fermentations, on so-called spontaneous generation, and on the diseases of silkworms that enabled Pasteur to establish the bases of his germ theory, which has been so fruitful of results; for, with the discovery of the attenuation of virus, vaccination against chicken cholera, anthrax, swine erysipelas and rabies, it was destined, from 1885 on, to overthrow all old medical theories and to put on a solid foundation the prophylaxis of transmissible diseases, thus giving a more permanent basis to public health administration.

Calmette states, not without a certain bitterness, that the notion of contagion, enunciated in England by the Public Health Act of 1875, did not receive official recognition in France until the passage of the sanitary act of Feb. 15, 1902. It is regrettable that Pasteur's own country was not the first to profit by the beneficent results of his researches. Calmette therefore expresses the hope that the hundredth anniversary of the birth of the founder of modern hygiene may become for the people of France a time for the taking of an inventory of stock, as it were, in order to ascertain how the work of France to safeguard the public health compares with what has been done by other nations which are not so neglectful of their human capital and of human welfare.

#### THE COUNTRYSIDE WHERE PASTEUR WAS BORN AND REARED

The department of Doubs, in which Pasteur was born, celebrated the centenary of its most illustrious son by ceremonies which took place at Arbois, Dôle and Besançon. At 5 o'clock, on the evening of December 27, from all the bell-fries of the department burst forth loud and reverberating peals in tribute to the memory of Pasteur, born just one hundred years before. Many people from the countryside, joined by strangers from a distance, flocked to Dôle to pay a visit to the old home and birthplace of the great scientist.

#### The Publication of Pasteur's Works

Until recently, the works of Pasteur were scattered through the reports of proceedings of the Academy of Sciences and of the Academy of Medicine or were found in reviews and scientific journals. Dr. Pasteur Vallery-Radot, physician to the hospitals of Paris and grandson of the famous scientist, has now collected them, and the world is greatly indebted to him for his enterprise. Pasteur's complete works will constitute seven volumes. The first two volumes have just appeared in a magnificent edition published by Masson et Cie. Volume I comprises the treatises on chemistry and physics, and also the articles on crystallography, which mark Pasteur's entrance into the scientific world. These are the studies which led him to investigate the subject of fermentations and which formed the basis of his later discoveries; for all of his studies seem to be linked together, and, as has been well expressed by Roux, "Pasteur had already revolutionized medicine without having made a special study of any disease." We can also feel grateful to Dr. Pasteur Vallery-Radot for having adopted the chronological order in the publication of each series of works of his illustrious grandfather, for this permits us to follow very exactly the evolution of Pasteur's thought. Thus, in reading Volume II, which is devoted to his researches on fermentations and on so-called spontaneous generation, we can see how, by his

investigations on molecular dissymmetry, Pasteur was led to the study of fermentation, and how, at a later period, his researches on so-called spontaneous generation were, as he himself stated, only a "necessary digression" from his work on ferments. Vallery-Radot truly says that the reader is spellbound by the wealth of induction and deduction, which is peculiar to Pasteur's genius.

#### The Future Pasteur Museum

In connection with the ceremonies held, December 27, at the Pasteur Institute, visitors were accorded permission to inspect the apartment that the scientist occupied on the ground-floor of his residence. In the drawing room, a museum, or, rather, the beginnings of a museum, could be found, for it is the intention of the relatives and pupils of Pasteur to restore ultimately all the furniture to the position that it formerly occupied. Later, therefore, a visit to this apartment will enable one to gain a retrospective view of Pasteur's work as it actually developed. Even at present, we find in this collection enclosed in glass cases interesting evidences of the studies of the master. We see the models carved in wood by Pasteur himself to illustrate his work in crystallography; also retorts, cylinders, mortars and flasks used in demonstrating the nonexistence of spontaneous generation. In some of these were found—intact and still sterile—the solutions just as Pasteur had left them. Here we see the microscopes that he used, and there, photographic copies of pages of his notebooks in which he had jotted down his observations.

#### PRAGUE

(From Our Regular Correspondent)

Dec. 20, 1922.

#### Institute of Hygiene

Dr. Pavel Kucera, formerly professor of hygiene at the universities of Cracow and Brno, delivered a lecture on the organization of the institute of hygiene before the medical society in Prague, December 11. Professor Kucera was designated director of this institute, which the Czechoslovak government is building, with the help of the International Health Board of the Rockefeller Foundation. The institute of hygiene, the construction of which must be completed before the end of the year 1926, according to the contract between the Rockefeller Foundation and the government, will not only be a service laboratory for the health service of the country, but will also serve as a teaching center for the education of all members of public health personnel, primarily of health officers. The construction of the first half of the institute was started this fall. It will contain institutes for the production of serums, Pasteur vaccine for rabies and smallpox vaccine. The buildings will be completed before next winter, and the institutes will be transferred into the permanent buildings from the temporary quarters that they are now occupying. After the first half of the institute has been put into operation, the construction of the second half will be started, in order not to exceed the time limit given in the contract. After its completion, the institute will comprise eleven departments, including a bacteriologic, food and drugs laboratory, and departments of school hygiene, industrial hygiene and housing.

The medical profession is following the plans for the construction of the institute of hygiene with keen interest. The only objection comes from the medical faculties, which see an important medical institution growing beside the university and claiming for itself a rôle which up to the present time was fulfilled by the medical faculty; namely, the education of health officers. Although it is anticipated that the organization of a school of hygiene in the institute of hygiene will meet opposition on the part of the university professors, the



ministry of health, under whose auspices the institute is being built, has resolved to put its cause through in the interest of an advance in the education of public health officers. The personnel for the institute of hygiene is being trained largely in the United States, because scholarships have been granted by the Rockefeller Foundation to the Czechoslovak government for this purpose.

#### Public Health Education

A subdivision of public health education will be created in the ministry of health and physical education, beginning Jan. 1, 1923. Czechoslovakia will be the second country on the European continent to have such a subdivision established in connection with the health service, Yugoslavia being the first. Dr. Charles Driml, who will be appointed chief of the subdivision, has studied the methods of public health education in the United States. Since his return to this country, he has organized several popular exhibits, and has written public health educational pamphlets. One of the most effective means for the education of schoolchildren in public health matters is plays with marionettes, which are very popular in this country. Dr. Driml conceived the idea of approaching the schoolchildren in this way for the purpose of improving their health habits. The plays are being translated into English by the Junior Red Cross, and parts of them have already been published in Canadian magazines.

#### Control of Venereal Diseases

The ministry of health started organizing social and health centers in larger cities two years ago. It was the intention of the ministry to create institutions that would become its tools for the eradication of the social diseases. The character of these institutions was preventive, as it was conceived by the originator of the idea, Dr. Francis Hamza, who is now professor of social medicine in Brno. The centers were started as tuberculosis dispensaries, and, owing to the activities of the American Red Cross, twenty cities have added preventive child welfare stations. Three of them have opened also venereal disease dispensaries. It has been very difficult since the beginning to limit the functions of these centers entirely to the prevention of disease. The physicians who were appointed as chiefs of the centers were educated as practitioners of curative medicine, and, naturally, began to treat disease in the centers. This, of course, made the medical profession antagonistic to the centers in many places. This was especially true in the tuberculosis clinics, where the tuberculin treatment was administered. But the relationship of the medical profession and the tuberculosis dispensaries is improving, because the physicians in the dispensaries limit their functions chiefly to prevention; and slowly the questions of social medicine are being made understandable to the medical profession through the committee on social medicine, which is a very active body, composed largely from young physicians.

The activities of the child welfare centers since the beginning have been limited to medical control and supervision of the children, and therefore did not arouse the antagonism of the medical profession. The question was much more complicated with the venereal disease dispensaries, where it is very difficult to perform merely preventive functions in the station. The ministry of health has prepared a tentative program for these stations, which is built on the experiences of Germany. It is the intention to conduct these venereal disease stations as institutions for the control of venereal patients, who are forced to continue treatment under the new venereal disease law until they are declared free from infection by the physician. The functions of the dispensary will be limited only to the control of the patients, and no treatment will be given. If his case comes under the insurance

act, the patient will be sent to the insurance practitioner of the club to which he or she belongs. If there is no one who can assume the expenses of the treatment, the dispensary will send the patient to a medical practitioner, who will receive from the funds of the dispensary the fees for the treatment of the patient, according to the scale of the insurance.

The ministry plans to open such a dispensary in Moravska Ostrava, which is a big industrial city, and it wishes to use the experience gained in this city in the erection of similar dispensaries in other large cities. In this way, the health centers will be brought in closer contact with sickness insurance, and at the same time machinery will be created for the execution of the new venereal disease law, for which the routine public health administration is too cumbersome. These social and health centers are financed through subsidies from the ministry, with contributions from local funds. It is planned to transfer the expenses for maintenance of these centers to the counties, after the reorganization of the administration of the country has been completed.

#### BERLIN

(From Our Regular Correspondent)

Dec. 30, 1922.

#### Racial Physiognomy

Last month, Professor Hellpach, instructor in psychology at the polytechnic in Karlsruhe, and now minister of public instruction in Baden, delivered an address before the Heidelberg Naturhistorisch-medizinische Verein on the influence of heredity and environment on physiognomy or facial expression. As distinct from the inherited manifestations and qualities of constitution and race, which are comprised under the term "genotype," Hellpach distinguishes a "phenotype," which is characteristic of the tribe or clan. Marks of the phenotype become stamped on the face at about the fifteenth year of age, and are dependent on the place of residence or the environment. The influence of the genotype breaks its way through and manifests itself also in children born in the new environment of parents of a different stock or even in children who were brought to a new region in their early childhood. Hellpach referred to statues of German painters (using for the Franconian face Albrecht Dürer and for the Swabian-Alemannic type, Hodler and Hans Thoma) and also to photographs to illustrate the phenotypes of the two ancient tribes that form the population of Baden. He called attention in the Franconians of the old Palatinate in northern Baden to the triangular shape of the face, the pointed chin, the long nose, the protruding cheek bones and the correspondingly marked "zygomatic shadow," giving rise, if the soft parts are well developed, to a heart shape or to an oval form with the smaller end of the oval projected downward, whereas, among the Swabian Alemannians in southern Baden, a broad chin and flat cheeks, rising perpendicularly, give the face a square-set or rectangular appearance; or, if the soft parts are more fully developed, a full-moon face, so-called, results. Hellpach thinks that the cause for a phenotype existing in a pure form for centuries lies in the peculiarities of the dialect; or, not so much in the dialect as such, as in the accentuation and the dynamics of the spoken language. The position of the accent, the type of the accent, and the mode of speaking (whether rapid or slow), occasion in the various dialects a different type of "mimokinetics" (play of the features) and a varying innervation of the organs of speech, all of which factors, in turn, serve to model the face accordingly, a more lively motion of the lips being characteristic of the more "labial" dialect of the old Palatinate, and a more set and fixed expression about the mouth being typical of the predominantly guttural Alemannic dialect. Simultaneous with the adoption of the dialect, there is an habitua-



tion to the tribal temperament or disposition going on, whereby an inborn or hereditary temperament may likewise be transformed. The effects of imitation and adaptation, which are such significant factors in human life, serve to explain the fact that the phenotype of the tribe prevails and appears even in the children of immigrants of different tribal origin. This assimilation of immigrants by the old native stock is, in Hellsbach's opinion, the explanation of the riddle why, in spite of wars, revolutions and marked shiftings of the population, the ethnical boundaries of the old German tribes have remained essentially the same for a thousand years. It would appear, therefore, that tribal instincts and tribal peculiarities are not so much a physical as they are a mental product, and we find herein a confirmation of the words of the poet that it is the mind that molds the body.

**The Wretched Living Conditions Among the German People**

December 15, the physicians of Berlin, with numerous representatives from all parts of the country, held a special meeting, under the chairmanship of Geheimrat Rubner, at which attention was directed to the grave damage to health that has already been caused or is imminently impending as the result of the increasing poverty of the people. Professor His, an ordinarius of the medical faculty, delivered an address on "The Marked Decline in the Standards of Living Among the German People," while Dr. Dippe, the chairman of the Deutsche Aerztereinebund, spoke on the subject of "The German Physicians at the Bedside of the German People." The social hygienist Professor Krautwig, who is a member of the city council of Cologne, addressed the assembly on the theme, "German Children in Need; What Is to Be the Fate of the German People?"

**Age Distribution of the Population of Bavaria**

Recent statistics published by the public health department of Bavaria give a clear conception of the markedly changed age distribution of the population as caused by the large number of men killed in the war and the decrease in the birth rate. The influence of the decline in the birth rate on the age distribution is so great that the loss of men in the war has affected, for the most part, only the relationship of the sexes for the age group 15 to 30. A long time will elapse before normal conditions are restored.

AGE DISTRIBUTION OF MEN AND WOMEN  
(1,000 BASIS)

Age Group	German Empire, 1910		Bavaria, 1914		Bavaria, 1919	
	Men	Women	Men	Women	Men	Women
0-1	26.3	25.0	26.8	25.7	14.2	12.5
1-15	322.0	311.1	324.8	314.2	294.7	267.6
15-30	263.8	256.8	249.2	246.6	263.7	280.7
30-60	317.6	321.3	320.9	323.3	342.9	347.9
60-70	45.9	54.6	51.1	58.1	55.2	57.7
Over 70	24.4	31.2	27.2	32.1	29.3	33.6
	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)	(1,000.0)

**Personal**

Prof. Dr. Alt, chairman of the *Aerztekammer* (chamber of physicians) of the province of Saxony, for many years the director of the Landes-Heil- und Pflegeanstalt in Uchtspringe, died in Magdeburg, December 28, at the age of 62.

In honor of the seventy-fifth birthday of Professor Flügge, who was for many years the director of the Hygienische Institut in Berlin, Professor Kayserling, the tuberculosis expert of Berlin, who is connected with the Robert Koch Foundation for Combating Tuberculosis, has founded a Flügge Fund for tuberculosis research, with an initial subscription of 100,000 marks.

April 1, Professor Küstner, director of the University Women's Hospital in Breslau, will retire from active service, in conformity with the provisions of the old age pension law. Prof. L. Fraenkel of Breslau has been called to succeed him.

**MEXICO CITY**

(From Our Regular Correspondent)

Jan. 11, 1923.

**Yellow Fever**

During the year 1922, forty-one cases of yellow fever were reported in Mexico, as compared with 115 in 1921 and 505 in 1920. Besides the decrease in the number of cases reported, which, of course, does not represent the full number of cases, the decrease in the area where the disease prevailed must be considered. In 1920, many cases occurred in towns both on the Atlantic and on the Pacific coasts; in 1921, there were outbreaks in several towns on the Eastern coast, while in 1922, there were only three cases at Puerto Villarta, on the Pacific coast, and the remainder at Pánuco, Tampico and Tuxpam, on the Gulf coast. Not one indigenous case was reported from Vera Cruz, for many years a noted yellow fever focus.

**Child Welfare Congress**

Early this month the second Congreso Mexicano del Niño was held in Mexico City. Because of the number and the contents of the papers submitted and the interest in its transactions, the congress proved a great success. The third congress will be held in Mexico City in 1925. The civil engineer Félix F. Palavicini was appointed president and Dr. Salvador Uribe y Rivera, secretary. His address is 1 Calle de Iturbide, No. 11, Mexico City.

**Mexican Medical Association**

The Mexican Medical Association has just held its first scientific meeting with a fair degree of success. An encouraging feature was the attendance of several physicians from other states who had stayed away from previous meetings. The present session was devoted to a celebration of Pasteur's centennial. The ceremonies were in charge of Drs. Ramón Icaza and D. M. Vélez, president and vice president, respectively, of the association. New officers were appointed. The president-elect for the next two-year term is Dr. Fernando Zárraga.

**Personal**

Dr. Fernando Ocaranza, former president of the Mexican Society of Biology, has been appointed corresponding member of the Buenos Aires Biologic Society, a branch of the Argentine Medical Association.—A banquet was recently tendered Drs. Ulises Valdés and Gabriel Malda, by a number of local physicians.

**Marriages**

VERNE CARLTON HUNT, Rochester, Minn., to Miss Mona Sibeck of Little Rock, Ark., December 28.

GLENN ROBERT CUTTER to Miss Josephine Gage, both of Council Bluffs, Iowa, at Sabula, recently.

PAUL N. JEPSON, Rochester, Minn., to Miss Dorothy Cannon of Haddenfield, N. J., December 28.

MICHAEL S. MCGAURAN to Miss Catherine T. Reardon, both of Lawrence, Mass., December 26.

CHARLES GOLDMAN, Brooklyn, to Miss Helen Louise Goodman of Waco, Texas, December 3.

HELMER ENGH, Gillespie, Ill., to Miss Helen Runnestrand of Hettick, Wis., November 30.

JOHN MILTON DODSON, Chicago, to Mrs. Mary Hyde Webb of Detroit, January 17.

ALBERT C. LUCAS, Castle, Okla., to Miss Grace Philpots of Okemah, November 20.

OTTO FRENZEL to Miss Matilda Myers, both of Pigeon, Mich., January 14.

WILBERT HALL to Miss Lillian May, both of Mitchell, Canada, recently.

VICTOR R. LAPP, Hamilton, Canada, to Miss Edna Ward of Toronto, recently.



## Deaths

**Herbert Clark Emerson**, Springfield, Mass.; Medical School of Harvard University, Boston, 1893; at one time city bacteriologist; for eight years served as city physician and member of the board of health; president of the Springfield Hospital; member of the Massachusetts Medical Society; formerly president of the Engineering Society of Western Massachusetts, the Hampden County Tuberculosis and the Hampden County Public Health associations; chairman of the Connecticut Valley section of the American Chemical Society; for nearly twenty years maintained an analytic and consulting laboratory in the city; aged 57; died, December 6, from pulmonary congestion.

**James D. Hillis**, Lafayette, Ind.; University of Michigan Medical School, Ann Arbor, 1880; member of the Indiana State Medical Association; formerly professor of electrotherapeutics at Purdue University School of Medicine, Indianapolis; secretary of the city board of health and past president of the Tippecanoe County Medical Society; aged 69; died, January 4, at the Albert E. Stern Sanatorium, Indianapolis, from cerebral hemorrhage.

**Robert P. Bush**, Horseheads, N. Y.; University of Buffalo (N. Y.) Department of Medicine, 1874; member of the Medical Society of the State of New York; Civil War veteran; formerly member of the state legislature; at one time member of the board of education, school commissioner, and county coroner; aged 80; died, January 8, in a hospital at Elmira, from pneumonia.

**Versile Mornington Gates**, Elk Rapids, Mich.; Detroit College of Medicine and Surgery, Detroit, 1910; member of the Michigan State Medical Society; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 36; shot himself while suffering from melancholia, December 29.

**Edward Mercur Williams** ♂ Sioux City, Iowa; University of Pennsylvania School of Medicine, Philadelphia, 1905; member of the Philadelphia Neurological Society, American Neurological Association and the American College of Physicians; aged 41; died, January 8, from pneumonia.

**Joseph Pettit**, Philadelphia; Jefferson Medical College of Philadelphia, 1890; formerly secretary of the Pennsylvania College of Dental Surgery; practiced dentistry in Philadelphia for more than a half a century; aged 73; died suddenly, December 31, from heart disease.

**Edgar Clarence Cowles**, Cleveland; Cleveland University of Medicine and Surgery, 1897; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 47; died, January 1, from accidental asphyxiation while repairing his automobile.

**Aaron W. Cooper**, Fowlerville, Mich.; University of Michigan Medical School, Ann Arbor, 1868; Civil War veteran; for seventeen years postmaster of Fowlerville; aged 82; died, December 7, from injuries received when he was knocked down by an automobile.

**Charles P. Cook** New Albany, Ind.; Medical Department University of Louisville, Louisville, Ky., 1883; member of the Indiana State Medical Association; formerly surgeon to St. Edward's Hospital; aged 64; died suddenly, January 7, from heart disease.

**Delmer Neil Hayden**, Fossil, Ore.; Willamette University Medical Department, Salem, 1913; served in the M. C., U. S. Navy, during the World War; aged 36; was found dead in bed, January 7, with a handkerchief saturated with chloroform on his face.

**Henri Louis Pache** ♂ Burlington, Vt.; University of Vermont College of Medicine, Burlington, Vt., 1900; epidemiologist and head of the venereal disease department of the state board of health; aged 48; died, January 7, following a long illness.

**Luther Jackson Weldon** ♂ Denver; Denver and Gross College of Medicine, Medical Department University of Denver, 1905; on the staffs of St. Luke's, St. Anthony's and the County hospitals; aged 46; died, January 8, from angina pectoris.

**Albert Shelley**, Baltimore; Jefferson Medical College of Philadelphia, 1895; member of the Medical Society of the State of Pennsylvania; served in the M. C., U. S. Army, during the World War; aged 56; died, January 6.

**John Saunders Carter**, Dallas, Texas; University of the South Medical Department (Sewanee Medical College),

Sewanee, Tenn., 1906; member of the State Medical Association of Texas; aged 49; died, January 7.

**Frederick W. Beilstein**, Chicago; Northwestern University Medical School, Chicago, 1900; member of the Illinois State Medical Society; aged 45; died, January 17, at the Wesley Memorial Hospital, from peritonitis.

**Edmund Lawrence Maurer**, Brownston, Minn.; University of Minnesota Medical School, Minneapolis, 1904; member of the Minnesota State Medical Association; aged 44; died recently, in a Minneapolis hospital.

**William Ezra Graham**, Calgary, Alta., Canada; Trinity Medical College, Toronto, Ont., 1897; M.R.C.S., England, and L.R.C.P., London, 1901; F.R.C.S., Edinburgh, 1907; aged 47; died, November 12, from carcinoma.

**Morris Edwin Derfler**, Novinger, Mo.; Washington University Medical School, St. Louis, 1909; member of the Missouri State Medical Association; aged 50; died, October 30, from chronic nephritis.

**Michael Edward Connell**, Oshkosh, Wis.; Rush Medical College, Chicago, 1881; formerly superintendent of the Milwaukee County Hospital, Wauwatosa; died, January 8, from cerebral hemorrhage.

**Edwin Guilford Annable**, Concord, N. H.; University of Vermont College of Medicine, Burlington, 1880; member of the New Hampshire Medical Society; aged 82; died, November 12, from senility.

**Christopher C. Bippus**, Pittsburgh; Jefferson Medical College of Philadelphia, 1889; member of the board of education; aged 57; died suddenly, January 7, from heart disease, at Shelbyville, Ind.

**Helen B. Carpenter**, Seattle; Woman's Medical College of New York Infirmary for Women and Children, 1886; formerly practitioner in Boston; died in December, aged 62, from heart disease.

**John Henry Thornton** ♂ Lansing, Iowa; Rush Medical College, Chicago, 1879; local surgeon for the Chicago, Milwaukee and St. Paul Railroad; died, January 1, from cerebral hemorrhage.

**Andrew Jackson Deas**, Augusta, Ga.; Medical College of Georgia, Augusta, 1893; member of the Medical Association of Georgia; aged 59; died, October 30, following a prostatectomy.

**George Chandler Bassett**, Detroit; Detroit College of Medicine and Surgery, 1895; member of the Michigan State Medical Society; aged 48; died, December 17, from acute endocarditis.

**Robert H. De Lap**, Richland Center, Wis.; College of Physicians and Surgeons, Keokuk, Iowa, 1882; member of the State Medical Association of Wisconsin; aged 76; died, October 30.

**Margaret Elizabeth Clarke**, Brooklyn; New York Medical College and Hospital for Women, New York, 1881; aged 79; died, December 22, at the Peck Memorial Hospital, from carcinoma.

**Frank H. Ruhl** ♂ Lansdowne, Md.; Baltimore University School of Medicine, 1892; formerly health officer of the Thirteenth District (Baltimore County); aged 60; died, January 6.

**Timothy D. Beach**, London, Ohio; Starling Medical College, Columbus, 1873; Bellevue Hospital Medical College, New York, 1875; aged 80; died, December 29, from heart disease.

**Charles H. Emig**, Melrose, Mass.; St. Louis College of Physicians and Surgeons, 1899; for twenty-five years a Methodist minister; aged 70; died suddenly, January 6, from heart disease.

**Thomas Purcell**, Erie, Pa.; University of Buffalo (N. Y.) Department of Medicine, 1888; member of the Medical Society of the State of Pennsylvania; aged 71; died, December 8.

**Nathaniel Joseph Minter**, Chattanooga, Tenn.; Tennessee Medical College, Knoxville, 1895; member of the Tennessee State Medical Association; aged 59; died, December 30.

**Andrew J. Cavender**, Murrayville, Ga.; Atlanta Medical College, 1893; aged 63; died, December 27, at the home of his daughter in Gainesville, from cerebral hemorrhage.

**Thomas B. Hammer**, Des Moines, Iowa; Physio-Medical College of Indiana, Indianapolis, 1881; aged 74; died, December 28, from injuries received when he fell on the ice.



Edmund A. Boas, Chicago; Rush Medical College, Chicago, 1884; member of the Illinois State Medical Society; aged 60; died, January 17, from chronic nephritis.

Samuel Stewart Snarr, Mount Jackson, Va.; Maryland Medical College, Baltimore, 1909; member of the Medical Society of Virginia; aged 42; died, December 12.

Katherine W. Corcoran ⊕ Chicago; College of Physicians and Surgeons, Chicago, 1902; aged 52; died, January 17, at the West Side Hospital, from diabetes mellitus.

Tryon Y. Howard, Niagara, Ky.; Medical Department University of Louisville, 1867; Civil War veteran; aged 84; died, January 4, from carcinoma of the stomach.

Hugh J. Death ⊕ Franklin, Ohio; Medical College of Ohio, Cincinnati, 1881; aged 65; died, January 7, at the Miami Valley Hospital, Dayton, from cholelithiasis.

John Newton Chism, Jamestown, Tenn.; Vanderbilt University Medical Department, Nashville, 1891; aged 68; died, December 5, from uremia, at Nashville.

John Andrew Brown, Sparta, Ga.; University of Georgia Medical Department, Augusta, 1908; aged 36; died, January 6, from pneumonia, following influenza.

Peter Alexander McDougall, Ottawa, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1864; aged 83; died, December 11, from senility.

Sarah W. Devoll, Portland, Me.; New England Female Medical College, Boston, 1872; aged 87; died, October 30, in Boston, from pneumonia.

Armistead Green Taylor, Amelia, Va.; Medical College of Virginia, Richmond, 1867; Civil War veteran; aged 81; died, January 2, from senility.

William Alfred Jones, Kingston, Ont., Canada; Western University Faculty of Medicine, London, 1914; aged 30; died, November 27, in Toronto.

Otho Pierce Franks, Churubusco, Ind.; Fort Wayne College of Medicine, 1904; aged 48; died suddenly, January 2, from heart disease.

Frank H. Thomas, Belle Center, Ohio; Pulte Medical College, Cincinnati, 1898; aged 60; died suddenly, December 29, from heart disease.

John Joseph Egan ⊕ Chicago; College of Physicians and Surgeons, Chicago, 1905; aged 44; died, January 11, from angina pectoris.

James Applebee, Parry Sound, Ont., Canada; Victoria University Medical Department, Toronto, 1887; aged 66; died, December 11.

John W. B. Scott, Hamilton, Ohio; Physio-Medical Institute, Cincinnati, 1874; aged 73; died, January 5, from cerebral hemorrhage.

William J. Heizer ⊕ Lebanon Junction, Ky.; Medical Department University of Louisville, 1883; aged 72; died in November.

Frank W. Hess, Estelline, S. D.; Detroit Medical College, 1880; Civil War veteran; aged 72; died, December 25, from carcinoma.

William Wylie Hunter ⊕ Anamosa, Iowa; State University of Iowa College of Medicine, Iowa City, 1886; aged 64; died, January 8.

Ernest B. Boyes San Francisco; Trinity Medical College, Toronto, Ont., Canada, 1896; aged 49; died, November 7, at Denver.

Robert Harry Tatum, Chattanooga, Tenn.; Chattanooga Medical College, 1899; aged 48; died, December 7, from influenza.

Andrew Marshall, Chillicothe, Mo.; Miami Medical College, Cincinnati, 1876; aged 86; died, November 9, from senility.

Elmer Ellsworth Wilson, Hayt Corners, N. Y.; Jefferson Medical College of Philadelphia, 1888; died suddenly, January 3.

Edward Alexander Holland, San Antonio, Texas; Rush Medical College, Chicago, 1884; aged 62; died, November 2.

Edmund S. Fessenden, Albany, Wis. (licensed, years of practice); aged 87; died, December 15, from senility.

George H. Mehald, Wampum, Pa.; Jefferson Medical College of Philadelphia, 1882; aged 65; died, January 5.

John Edwin Barringer, Armada, Mich. (licensed, years of practice); aged 81; died, October 27, from senility.

John M. Deam, Dayton, Ohio; Medical College of Ohio, Cincinnati, 1881; aged 71; died, January 6.

## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

### QUAYLE'S "BOB-WHITE HABIT SINKERS"

#### An Alleged Cure for Morphinism and Other Drug Addictions

Charles H. Quayle, M.D., of Madison, Ohio, "Medical Director," of the "Dr. Quayle Sanitarium, a Retreat for Drug Addicts, Alcoholics and Cigarette Inveterates" and "Specialist in Drug and Liquor Addictions" has for some years been exploiting an alleged cure for chronic morphinism "and any other drug addiction." THE JOURNAL has received inquiries from physicians and laymen, of which the following are specimens:

This from a physician in Georgia:

"Kindly advise me as to whether Dr. Quayle's treatment for drug and alcoholic addictions is safe, ethical and all that he claims."

An Ohio physician wrote:

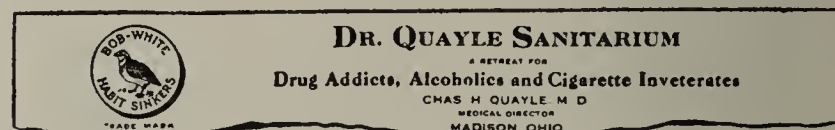
"Just received the enclosed [Quayle advertising matter.—Ed.] through the mail. Looks like some more bait for the medical profession. What is it?"

And this from the advertising manager of a group of high-grade lay publications:

"An advertising agency has offered to us a contract for the Quayle Treatment, purporting to be a sure cure for the morphin habit. In response to my letter declining the advertisement I have received a voluminous statement with alleged testimonials, all attempting to prove that this particular morphin cure is reliable and that it is a great public benefaction masquerading as a commercial proposition. I am sending the booklet herewith and if, without inconvenience, you can give me the facts about it, I may be able to keep it out of some other publications. Unless you can give it a clean bill of health (which I greatly doubt) it will not go into our publications."

While a Mississippi physician wrote some time ago:

"Today I received a letter from a Dr. Charles H. Quayle who styles himself 'Specialist in Drugs and Liquor Addiction.' This gentleman proposes to license me to use his special treatment in my sanatorium and to give me the right to use such treatment in my 'district,' as he calls it. . . . If the A. M. A. has any information about this gentleman, I shall be very glad if you will let me have it."



Photographic reproduction (greatly reduced) of letterhead used by Dr. Quayle's sanitarium.

#### THE CURE IN 1914 AND 1915

In 1914 Quayle was sending out to physicians from Madison, Ohio, a circular letter regarding the alleged wonders of "Dr. Quayle's Guaranteed Three Day Drug and Liquor Treatment." According to this letter, Quayle "by unremitting study, experiments and observation" had at last "discovered an absolute cure for the relief of the craving for all Drugs and Liquors." Further, this alleged treatment was—at that time—"not for sale to any layman or person who wishes to treat himself"; it could "only be purchased by a Physician" and was "for the use and advantage of the medical profession only." Quayle stated that he wished to impress on physicians the fact that his "Medicine is not a product of a Sanitorium [sic], nor is it protected by a patent." Had it been patented, of course, it would not have been a secret—as it is. Quayle said, also—then—that there would be no advertising of the remedy "except in the Medical Journals." Today we find Quayle's product advertised in the *Police Gazette* and similar literary productions. Finally, the Quayle letter explained that the price of the treatment to the physician would be "\$25.00 with the understanding that no Physician is to administer it for less than \$50.00 per patient."



This, as has been stated, was in 1914. In March, 1915, Quayle was sending letters to sanatoriums from Cleveland, Ohio, and offering to license the physicians in charge so that their institutions could have a monopoly on the use of Quayle's treatment in a given "district." The "advantages" that were offered to those who would enter into this arrangement were set forth at length in the "follow-up" matter that came to those who evinced interest in the scheme. The first alleged advantage was that it permitted the physician who entered into the contract "to control the situation"; second, it enabled the physician "to become a specialist . . . and thereby secure considerably larger fees than he could in ordinary practice"; third, the fee for the treatment "must not be less

ing to Quayle's directions; sixth, that the license was not transferable and, seventh, that in default of the payments the agreement could immediately be revoked and terminated.

As further follow-up material, prospective licensees received copies of form-letters that the licensee might send to physicians and also a form-letter that would do to send "to patient prospects." Then there was a specimen of newspaper copy showing how a write-up could be furnished the local newspaper telling of the opening, in a certain locality, of "an institution which will perform a humanitarian service" and which was "licensed to use a scientific remedy so successfully used for years, Dr. Quayle's Three Day Treatment for Drug Addiction and Alcoholism."

If the physician resisted all these blandishments, the final series of the follow-up came asking if there was "any particular reason" why the Quayle Treatment had not been adopted and suggesting that the local physician might "arrange with the newspapers for taking care of a few charity patients." But let us quote from the letter:

"How would it be Doctor, if you could arrange with the newspapers for taking care of a few charity patients? It could then be so arranged so that Dr. Quayle could go to your Sanitarium and put through these patients for you which would be the means of your getting a lot of publicity through the newspapers on account of demonstration treatments."

The letter closed with the naïve suggestion:

"This will be an elegant opportunity for you to do a good work for humanity and make money besides."

#### NOW A MAIL-ORDER TREATMENT TO THE PUBLIC

All this, as has been stated, was in 1915. Since then Quayle has evidently changed his method of exploitation and the "medicine" that, at that time, was "not for sale to laymen or persons who wished to treat themselves" is now to be found advertised in the *Police Gazette*, *Smart Set*, etc.

One of Quayle's newspaper advertisements, "Morphin, New Home Treatment: Send Stamp for Book of Information" was answered not long ago and, in reply, came a form letter signed "Charles H. Quayle, M.D., Medical Director," stating that a booklet was enclosed and also a history blank that must be filled out when ordering treatment. The letter stated further that "the 'HABIT SINKERS' cause no pain, sickness, nor the loss of time; are harmless, contain no NARCOTICS or other habit-forming drugs and are easy to take." Moreover, it said that "the amount of Morphin or the length of time taken makes no difference"; it closed with the statement that the price of the treatment is \$25.00 and "All Treatments sent in plain packages."

Accompanying this form letter was a printed sheet containing two testimonials. Then there was a printed "clip sheet" similar to that used in sending free publicity matter to newspapers. It was written in the usual newspaper style and bore the heading "Morphin Habit Cure Discovered—Dr. Charles H. Quayle of Madison, Ohio, Hailed as Miracle Man in Medical World." The article bore the Madison, Ohio, date line for January 10 (no year given), which was the date of the "release." The article is simply a puff of Quayle, "The Miracle Man." It is alleged to have been written by "Charles E. Cake, Managing Director, Anti-Narcotic League of America." Efforts to find out who Cake is have been just as unavailing as has been the endeavor to discover something about the "Anti-Narcotic League of America." Whether this imposingly-named organization exists for any other purpose than that of being used as an advertising accessory by

**MORPHINE NEW HOME TREATMENT FOR ALL**  
Drug and Alcoholic Addictions, Doctor—Treat these cases at home privately yourself. No pain, very little discomfort. Positive results. Enclose stamp for full information. Dr. Quayle Sanitarium, Madison, O., Box 7.

**MORPHINE**  
New Home Treatment  
Send Stamp for Book of Information  
DR. QUAYLE'S SANITARIUM, MADISON, OHIO, Dept. Q

**MORPHINE**  
Drug Addictions Alcoholism  
Treated by the "Quayle Method."  
A safe and easy way. Results guaranteed.  
Treatment is painless and supportive, rather than depressant. No nervous period experienced. I also furnish a Home Treatment for Physicians to use in treating addicts at home, who for various reasons are unable to go to a Sanitarium.  
For full particulars address  
**DR. QUAYLE SANITARIUM**  
Chas. H. Quayle, M.D., Medical Director  
Dept. 603 Madison, Ohio

Some typical Quayle advertisements, greatly reduced. The upper left appeared in a recent issue of the *American Journal of Clinical Medicine*; the lower left in the *Police Gazette*, that on the right in *American Medicine*.

than \$150.00" and "10 per cent. of the gross receipts from patients" was to be sent "to the home office for use for local publicity" under the direction of an advertising agency; fourth, the physician was told that to become Quayle's representative, would place him "in direct contact with humanitarian movements in the community" and he would "secure the active cooperation of organizations looking toward moral uplift"; fifth, the "representative" would receive the support of Quayle's organization "along every material line."

Additional "follow-up" matter told of the methods that could be used "to develop business." First, there was a certain portion of the royalty that Quayle received that was to be "devoted to local publicity in your territory." This publicity would "not advertise the individual" but would advertise "Dr. Quayle's Three Day Treatment." Then there would be circulars and booklets supplied by Quayle; also "display notices in newspapers." Further, it was suggested that editorial write-ups and notices might be secured in local newspapers which might also be "induced to run testimonials in connection therewith."

The contract to be entered into between the physician who wanted to use Quayle's nostrum and C. H. Quayle himself was an interesting document. It is too long to give more than the opening paragraphs:

"THIS AGREEMENT made and entered into this . . . day of . . . 1915, by and between Dr. C. H. Quayle and . . .  
"WITNESSETH: In consideration of the sum of Twenty-five Hundred Dollars (\$2500.00) paid to the said Dr. C. H. Quayle, contemporaneous with the execution of this agreement, the receipt of which is hereby acknowledged, said Dr. C. H. Quayle gives, grants and conveys to said . . . the perpetual and exclusive license to use within the limits of . . . what is known as Dr. Quayle's Three Day Treatment for the drug and liquor habits, including the right on the part of said . . . to advertise said treatment in the prosecution of the business of . . .  
sanitarium at . . . The above license is given and granted by said Dr. C. H. Quayle and received by said . . . upon the following conditions, to-wit:"

The conditions were briefly: *First*, that the doctor entering into the agreement would not use the Quayle Treatment elsewhere than in the sanatorium; *second*, that he should within ten days of the date of the agreement receive fifty packages of "Dr. Quayle's Three Day Treatment" and would guarantee to pay Quayle \$50.00 a treatment for all additional "treatments" ordered; *third*, the physician, on the fifteenth of each month, should pay a certain advertising agency named in the contract 10 per cent. of the gross receipts of the sanatorium; *fourth*, that Quayle would, through the advertising agency, spend a certain amount "in advertising and publicity"; *fifth*, that the physician would administer the "treatment" accord-

### QUAYLE'S Vaso-Dilator TABLETS

NERVINE  
SEDATIVE  
HYPNOTIC  
ANTI-SPASMODIC  
LAXATIVE

HARMLESS  
Contains no Narcotics  
or Coal-Tar Products

DR. QUAYLE'S SANITARIUM

Chas. H. Quayle M.D.  
Medical Director  
Madison, Ohio

"Quayle's Vaso-Dilator Tablets" are, apparently, a side-line. They are said to be indicated in such conditions as "Aphrodisia," "Epilepsy," "Painful Menstruation," "Prostatitis" and "Shell Shock." The price asked is \$10.00 a thousand.



C. H. Quayle we have been unable to determine. Cake's article closed with this paragraph:

"The American Medical Association stated that it was hoped sincerely that he would give his drug addiction cure to the fraternity before he died, but Quayle isn't thinking about this just now."

It should not be necessary to say that the American Medical Association has never expressed any "hope" regarding C. H. Quayle, and it might be suggested that the alleged author of this piece of fiction should become "Managing Director" of an "Anti-Ananias League."

With the letter came a booklet telling how Quayle discovered the formula "after years of investigation and research," but taken up mainly with testimonials common to advertising matter of this kind.

#### A "TREATMENT" IS ORDERED

Twenty-five dollars was sent to Quayle by a layman for one "treatment" which consists of four boxes of pills. One of the boxes contains three chocolate-coated pills and one capsule; another box contains twelve white-coated tablets; in a third are thirty-seven red-coated pills, while the fourth—the alleged "Antidote"—contains 323 yellow-coated tablets. A small leaflet accompanies the boxes, giving "Directions for Taking." The sufferer is told, first, to take the three chocolate-coated pills and the capsule and twelve hours later to "take two teaspoonfuls of Sal-Hepatica." He is told, further, that the bowels should move two or three times a day and, if necessary to accomplish this, one of the white-coated tablets should be taken each night at bedtime, followed the next morning by "two teaspoonfuls of Sal-Hepatica." He is warned to "use no acids while taking medicine."

As the second step in the treatment the patient takes the yellow-coated tablets described as the "Antidote." The number of these tablets to be taken at a dose varies with the amount of morphin that is being used. It is insisted, however, that the patient must take these tablets "every three hours day and night for six days"; "set your alarm clock if necessary." On the seventh day the number of "Antidote" pills is to be diminished by one, but is still to be taken "every three hours, day and night." On the eighth and ninth day one of these tablets is to be taken "every three hours, day and night."

The sufferer is warned that should he "vomit or feel sick to stomach" or should he "experience seeing imaginary objects" the "Antidote" tablets should be discontinued until the symptoms have passed. He is also told not to attempt to read while taking these tablets "as pupils are dilated." Further, he is told that should "any nervousness or desire for morphin" be felt after the ninth day, the "Antidote" tablets should be continued "up to the 12th, 15th or 21st day or until you feel sure of yourself."

At the same time that the addict is taking the "Antidote" tablets he is told to gradually diminish the amount of morphin he has been in the habit of taking. He is instructed to put in a bottle the total amount of morphin that he would ordinarily use in nine days, figure the number of doses this would be and then put that many teaspoonfuls of water into the same bottle. When the time comes to take the dose of morphin one teaspoonful of the solution is taken and a teaspoonful of water is added to the bottle in its place. The poor victim is told never to add any more morphin to this bottle but to continue diluting the solution as long as he is taking the "Antidote" tablets.

The tablets in the fourth box are to be taken, one after each meal, "after there is no more desire for morphin and you have finished with the antidote tablets." The patient is told, also, that while taking the treatment, the diet should consist of milk, cereals, eggs and vegetables only, and these

taken sparingly and that a glass of water should be taken every two hours. Finally:

"It is also necessary to have some will power and determination as there are times when you will feel weak (from the loss of your accustomed drug) and discouraged. But if you will follow directions exactly as laid down you will get the desired results."

A complete Quayle treatment was turned over to the A. M. A. Chemical Laboratory for analysis. The laboratory report follows:

#### LABORATORY REPORT

One original package of "The Quayle Treatment" (Dr. Quayle Sanitarium, Madison, Ohio) was submitted to the chemical laboratory for examination. The package consisted of a box in which were four smaller boxes labeled as follows:

"No. 1—Eliminative." (Contained 3 chocolate-coated pills and 1 capsule.)

"No. 2—Antidote." (Contained 323 yellow-coated tablets.)

"No. 3—Nerve Tonic." (Contained 37 red-coated pills.)

"Special Eliminative Bowel Tablets." (Contained twelve white-coated tablets.)

The box "No. 1—Eliminative" contained three chocolate-coated pills and a capsule of grayish powder. The pills contained a soft mass which gave a positive reaction for emodin-bearing (laxative) drugs; mercurous chlorid (calomel) was absent. The capsule contained a gray powder of metallic mercury and excipients such as found in certain modifications of Mass of Mercury ("blue mass") and so-called "blue mass powder."

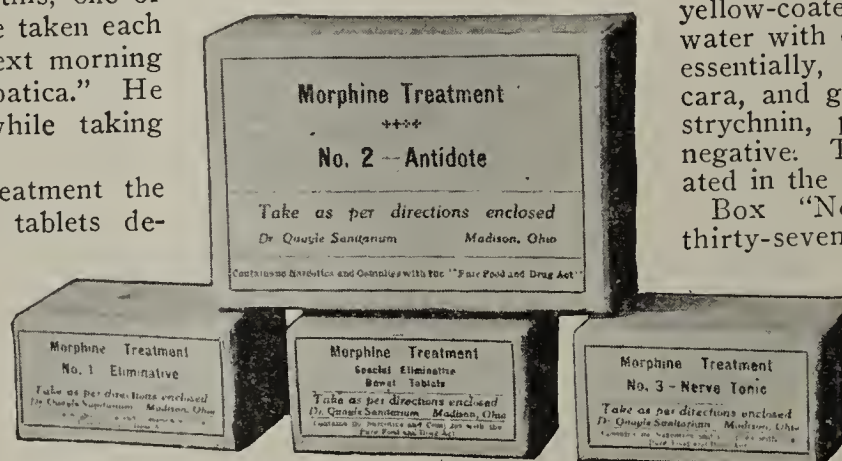
The box "No. 2—Antidote" contained 323 yellow-coated tablets which disintegrated in water with difficulty. These tablets contained, essentially, a laxative element such as cascara, and gave tests for atropin. Tests for strychnin, pilocarpin and scopolamin were negative. The atropin is probably incorporated in the form of an extract of belladonna. Box "No. 3—Nerve Tonic" contained thirty-seven red-coated pills containing strychnin.

The box "Special Eliminative Bowel Tablets" contained twelve white-coated tablets. In these was found mercurous chlorid (calomel); they also yielded a positive test for emodin-bearing drugs.

Summed up, the "Quayle treatment" for "Morphin or Any Other Drug Addiction"

is, essentially, (1) active elimination by cathartics; (2) the administration of atropin during the stage of morphin withdrawal and (3) the use of strychnin at the close of the "treatment."

It is evident from the laboratory findings that this alleged "absolute cure," said to have been discovered by Quayle "after years of investigation and research" and "by unremitting study, experiments and observation," is no more a cure than could be devised by any physician who is familiar with modern medical literature. The analysis fails to show a single element of originality in it. The scheme of having a quantity of morphin equal to several days' dosage dissolved in water to be periodically diluted as the patient uses it, is one that has been tried and found wanting—for generations. No physician will believe that a patient suffering from chronic morphinism can cure himself by any such method as that exploited by Quayle. That an occasional morphinist might cease the use of the drug coincidentally with the taking of the Quayle treatment is conceivable, although inherently improbable. For the one individual who possesses the almost superhuman will-power to give up the drug to which he is enslaved while treating himself, there must be hundreds to whom any method of self-treatment must be a more or less brief period of physical agony followed by the almost inevitable relapse with the mental suffering that such a relapse implies. "Play the game fair and do not cheat if you wish to win. . . . it will require some grit and will power on your part," says Quayle in the letter that accompanies the \$25.00 worth of pills. The ghastly irony of this exhortation will be understood by those who have seen the suffering of a morphinist even when being treated under ideal institutional surroundings.



Photographic reproduction (reduced one-half) of the "Morphin Treatment" sold by Quayle to the general public for \$25.00.



The mail-order sale of a secret mixture of pills and tablets for the alleged self-cure of morphinism would not be a business to be proud of, even were it conducted by laymen. Here, however, is a case in which a physician is engaged in the traffic. In the eyes of the intelligent public, these facts do more to discredit the medical profession and to bring organized medicine into disrepute than all the diatribes ever written by the followers of cults, the exploiters of nostrums or other enemies of scientific medicine.

## Correspondence

### "THE CARE AND FEEDING OF INFANTS"

To the Editor:—In one of your valuable series of articles on the care and feeding of infants (*THE JOURNAL*, Jan. 13, 1923, p. 109) the author says "Schick (*Ztschr. f. Kinderh.* 27:57, 1920) has found that he can prevent most of this initial weight loss by the feeding of sugar solutions during these first days, giving as high as 1 ounce (30 gm.) of sucrose during the twenty-four hours."

In a short paper (*New York M. J.*, Jan. 9, 1915) I reported briefly the results which I had obtained by giving 200 newborn infants 1½ ounces of a 10 per cent. lactose solution every three hours, and was able to show that the initial weight loss could be reduced one half; that nearly twice as many infants regained their birth weight at the end of ten days, and that the so-called inanition fever could be prevented. Further investigation makes it seem likely that this fever is not due to dehydration alone. The increased water intake probably aids in the elimination of certain toxic products through the genito-urinary tract. The addition of lactose probably changes the bacterial activity in the intestine from a proteolytic to a fermentative type, and by inhibiting the growth of proteolytic organisms prevents the formation of toxic products which are the cause of the fever.

CHARLES HERRMAN, M.D., New York.

### GOAT'S MILK IN INFANT FEEDING

To the Editor:—The first article in the series on "The Care and Feeding of Infants" was read with much interest. I am located in the hill country of Texas, to which section many infants are sent, especially during the hot summer months. Several years ago my attention was called to the milk of the Swiss goat as being superior in the feeding of these infants, most of whom have some disturbance of the gastro-intestinal tract. We have given goat's milk a careful trial, and with such excellent results that for two years the hospital has maintained its own herd for the feeding of infants and in the Sippy treatment of ulcers.

Goat's milk is normally alkaline, and is easier of digestion, forms smaller curds, and conforms more nearly to human milk than does cow's milk. The fact that the goat is almost immune to tuberculosis is a factor in its favor.

Many institutions now use goat's milk, and almost every city of any size has its source of supply. The southwest is raising these "Ford cows" in numbers, and the demand keeps way above the supply.

One feature that appealed to me in some rural cases seen in consultation was that the babies were 25 miles away from an ice supply, so that the goat was milked every three hours, and the milk given warm and fresh, with no chance of bacteria to multiply and outside contamination far less liable.

WILLIAM LEE SECOR, M.D., Kerrville, Texas.

[COMMENT.—The subject is discussed in a forthcoming article of the series.—ED.]

## Medical Education, Registration and Hospital Service

### COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vighne, Juneau.  
KANSAS: Topeka, Feb. 13. Sec., Dr. Albert S. Ross, Sabetha.  
NATIONAL BOARD OF MEDICAL EXAMINERS: Written examination in Class A medical schools. Part I and II, February 12-14 and February 15-16. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for the February examination must be sent in by January 1.  
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.  
PENNSYLVANIA: Philadelphia, Jan. 30-Feb. 3. Sec., Mr. C. D. Koch, Professional Credentials Bureau, 422 Perry Bldg., Philadelphia.  
VERMONT: Burlington, Feb. 13. Sec., Dr. W. Scott Nay, Underhill.

### New Hampshire September Examination

Dr. Charles Duncan, secretary, New Hampshire State Board of Medical Registration, reports the written examination held at Concord, Sept. 14-15, 1922. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 12 candidates examined, 11 passed and 1 candidate, an osteopath, failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Loyola University.....		(1917)	1
Eastern University School of Medicine.....		(1913)	1
Harvard University.....		(1918)	1
Tufts College Medical School.....		(1920), (1921)	2
Columbia University.....		(1921)	1
College of Phys. and Surg. in the City of New York...		(1890)	1
Long Island College Hospital.....		(1907)	1
Woman's Medical College of Pennsylvania.....		(1917)	1
University of Vermont.....		(1894), (1921)	2
Osteopath .....	FAILED		1

### Maine November Examination

Dr. Adam P. Leighton, acting secretary, Maine State Board of Registration of Medicine, reports the written examination held at Portland, Nov. 14-15, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Six candidates were examined, all of whom passed. Two candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Yale University.....		(1922)	79
Harvard University.....		(1921) 84, (1922)	81, 87
Jefferson Medical College.....		(1922)	86
McGill University, Montreal, Quebec.....		(1919)	82

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Harvard University.....		(1901)	New Hamp.
Hahnemann Medical Coll. and Hosp. of Philadelphia..		(1921)	Penna.

## Book Notices

CHLOROFORM ANÆSTHESIA. By A. Goodman Levy, M.D., M.R.C.P., Physician to the City of London Hospital for Diseases of the Chest. With a Foreword by Arthur R. Cushny, M.D., LL.D., F.R.S., Professor of Materia Medica and Pharmacology in the University of Edinburgh. Cloth. Price, 7 shilling and 6 pence. Pp. 159, with 9 illustrations. London: John Bale, Sons & Danielsson, Ltd., 1922.

This book contains chapters on pharmacology and toxicology, physiologic considerations of respiration, deprivation of oxygen and asphyxia, the mechanism of the absorption and elimination of chloroform, the dosage of chloroform, death under chloroform, the administration of chloroform, the physical principles of methods and apparatus, clinical considerations, and delayed chloroform poisoning. The discussions are short and to the point, and show a comprehensive knowledge of facts. The writer has apparently succeeded in his appointed task of preparing a volume which is a real contribution to medical science. One of the most valuable chapters of the book, especially for the anesthetist, is the one dealing with deprivation of oxygen and asphyxia. In view of the fact that many anesthetists are advocating the



use of oxygen as a vehicle, it is interesting to read, on the administration of oxygen, that "in the course of normal pulmonary ventilation with an effective circulation, the oxygen in the inhaled air is more than sufficient to provide oxygen to the tissues, and it is therefore evident that the administration of an excess of oxygen can serve no useful purpose under normal conditions," and that it can at most add 2 per cent. by volume to the oxygen in the blood. The writer states that the method of introducing an anesthetic vapor into the blood by inhalation possesses at least two salient advantages which account for the dominant position that it occupies at present. The first is its performance without the aid of surgical procedure, the second its capacity for rapid adjustment. The pulmonary route is a physiologic device for the easy passage of gases to and fro between the alveoli of the lungs and the blood, so that adsorption is rapid, and excretion hardly less so. There is a delicate response to a little increase or a little decrease in the concentration of the vapor inhaled, and this concentration may be so easily adjusted that it is difficult to conceive of any method which is likely to rival it in these relations. The author states that the liability of death from chloroform is generally estimated at about one in 3,000 administrations, but it is probably considerably higher; in 13,393 administrations of chloroform annotated by the Anesthetics Committee of the British Medical Association, the number of deaths was eighteen. At least ten of these were directly due to the chloroform, yielding a mortality of one in 1,339. These statistics are based on the reports of physicians who were accustomed to the administration of anesthetics, so that deaths from gross negligence can be ruled out of account. In conditions of good health, chloroform is much more dangerous than other anesthetics. In grave conditions it still remains the least safe anesthetic, but the disparity between it and other anesthetics is far less marked than in health. In relation to status lymphaticus, the author says it is certain that the majority of chloroform deaths are not associated with any such condition; thus, in the registrar-general's report for 1916, in 164 deaths under chloroform or a mixture containing chloroform, the condition of status lymphaticus was noted in twenty-two. It was found only once in death under other anesthetics, so that it appears evident that the chloroform was the primary cause of death and not the condition of status lymphaticus, whatever subsidiary part this may play when it coexists. Many American anesthetists and surgeons will take issue with the author in the statement that the treatment of acidosis or delayed chloroform poisoning with sodium bicarbonate is physiologically unsound, and that the chief indication is to maintain the strength of the patient until vomiting ceases. Graham demonstrated, through his researches, that the administration of sodium bicarbonate simultaneously with chloroform prevented the development of acidosis or delayed poisoning. Others have reported the recovery of patients critically ill (acidosed) following chloroform anesthesia by the intravenous injection of sodium bicarbonate. There is a good index and a very good bibliography. The author is fully conversant with foreign literature, and frequently mentions American authors.

LEITFADEN DER RÖNTGENOLOGIE. Herausgegeben von Prof. Dr. med. et phil. H. Gerhartz. Paper. Price, 1230 marks. Pp. 290, with 386 illustrations. Berlin: Urban & Schwarzenberg, 1922.

This work is really a set of monographs on the several branches of roentgen-ray endeavor, diagnostic and therapeutic, by various authors who have joined with Gerhartz in producing the book. Several of the contributors are among the leading roentgenologists of Germany; Forssell, who supplies the chapters on the digestive tract, is from Stockholm, and is regarded as an authority on this branch of the work. In general, the entire work deserves favorable comment. In particular, one is surprised at the very poor quality of reproductions of roentgenographic illustrations (excepting Forssell's on the stomach and the colon). Very few of the illustrations are satisfactory, failing, as they do, to give the reader a proper proof or example of the text; thus, they are completely unconvincing and entirely miss the point sought. The line diagrams, on the contrary, are excellent, and it seems that the book would measure higher had

the author resorted to this form of illustration throughout. An unusual presentation of conditions of the thoracic cage, in which lesions of ribs and sternum are detailed, leads the book. The chapters on the heart by Gerhartz are especially noteworthy, as is his work on the pulmonary and pleural structures. Goetze supplies a section on abdominal diagnoses with the aid of gas inflation, while Forssell's chapters on the digestive tract may safely be regarded as the last word in gastro-intestinal roentgen-ray diagnosis. This portion of the book deserves much praise. Thost's chapter on the head, sinuses and throat is also of the highest order. The deep therapy section is written by Seitz, Wintz and Dreyfuss, authors of the highest standing in this line. These chapters are rather short and condensed as compared with several recent German publications on roentgen-ray therapy, which are impressive in point of voluminosity. The boiled down information as presented in this work is especially acceptable to practical roentgenologists. Some of the newer ideas of roentgen-ray dosage are presented and described. The authors work on a basis of biologic dosage. The total skin tolerance being assumed as 100 per cent., the carcinoma dose they figure to be 110 per cent., the sarcoma dose as from 60 to 70 per cent. Benign lesions call for smaller percentages of "H. E. D." (*Haut Einheits Dosis*), which is the 100 per cent. or skin tolerance. Treatment types are divided into (a) castration dosage and (b) carcinoma dosage. They describe the technic for various lesions, among which is that of the climacteric, a treatment of established value widely recognized in Europe, but which has received less attention in this country than it deserves. The book will be found of considerable value as a reference work, since the collaborators are of such large experience and advanced standing in their respective lines in roentgenology.

ÉTUDES NEUROLOGIQUES. Par Georges Guillain, Professeur agrégé à la Faculté de Médecine de Paris. Paper. Price, 25 francs net. Pp. 469, with illustrations. Paris: Masson et Cie, 1922.

This book is made up of fifty-six previously published papers, most of them in collaboration with Guy Laroche or other assistants. Some of the papers are of lasting value, others naturally of only transient interest. All are the result of careful observation and serious work, few of great practical value to the general practitioner. They embrace subjects in nearly every department of neuropathology (such as poisons of the nervous system, lesions of cranial and spinal nerves, atrophies, spinal fluid, syphilis and epidemic encephalitis. The neurologist will find some unusual and peculiarly interesting things, such as the spinal cord form of trypanosomiasis, the meningeal form of brain tumor, Argyll Robertson pupil in nonsyphilitic lesions, compression of the cord in Recklinghausen's disease, a peculiar infection characterized by icterus and meningeal symptoms, and an apneic form of tabetic crisis.

PRINCIPLES AND PRACTICE OF X-RAY TECHNIC FOR DIAGNOSIS. By John A. Metzger, M.D., Roentgenologist to the School for Graduates of Medicine, Medical Department, University of California, Southern Division, Los Angeles. Cloth. Price, \$2.75. Pp. 144, 61 illustrations. St. Louis: C. V. Mosby Company, 1922.

Roentgen-ray laboratory technicians will find this book of material assistance in their routine work. The text is clear and concise. The author has included exposure formulas which will give the less experienced technician a basis on which to work in the taking of each different anatomic part. Under the subject of apparatus the Bucky diaphragm is briefly described, but scant mention is made of Potter's invaluable contribution to roentgen-ray art, which is the result of his untiring efforts in making the original Bucky diaphragm a practical accessory for every day use. The photographic illustrations of the various positions speak louder than a word description of the several poses. Under nasal sinus technic one wonders why the author does not describe Law's position for projecting the sphenoidal sinuses, instead of the more difficult and awkward position that is illustrated. For the greater part, the book may be accepted as a reliable exposition of modern roentgen-ray procedure. Since most laboratory assistants have learned roentgen-ray technic only by experience, one feels that this book has a considerable value in the field which it covers.



## Medicolegal

### Mistreatment of Furnisher of Blood for Transfusion

(*Jeter v. Davis-Fischer Sanitarium Co. et al. (Ga.), 113 S. E. R. 29*)

The Court of Appeals of Georgia, Division No. 1, in affirming a judgment in favor of the sanatorium company, sustaining the latter's demurrer to the plaintiff's petition, says the plaintiff alleged that a physician, after he had operated on a certain patient in the sanatorium, stated that his patient was in need of blood transfusion. The plaintiff proposed that the blood be taken from her, and, after a test of her blood had been made, the physicians and nurses of the sanatorium placed her on the operating table, telling her that the taking of the blood from her arm would not amount to more than a pin scratch; that the blood would be taken with a needle and she would scarcely know it. She told them not to cut her arm, but to take the blood with a needle only. Nevertheless, without her knowledge, they made an incision in her arm, and with forceps and their bare fingers pulled up a vein and took the necessary blood for the transfusion from a vein. After that, the incision was sewed up and she was put to bed. In consequence of the treatment she received, she was unable to use her arm, it had become stiff, and her health had been almost ruined. She alleged further that the physicians and nurses most grossly neglected and maltreated her after the arm had been unlawfully cut by them; that they all knew the condition she was in, and, wilfully and without cause or reason, failed and refused to dress her or her arm. Wherefore, she laid her damages at \$30,000. But the court holds that her petition clearly showed that there was no liability on the part of the sanatorium. The plaintiff volunteered her services, not to the sanatorium, but to a patient who was being treated at the sanatorium, and to the physician treating the patient. It was not alleged that it was part of the duty of the sanatorium to furnish the plaintiff's blood to the patient or to the physician. The acts complained of were the acts of a physician, and not of the hospital of which the plaintiff's friend was a patient. There was nothing alleged that showed that the sanatorium was responsible to the plaintiff for her pain and her suffering. It was not alleged that the sanatorium employed the specific services of any person to take the blood which she volunteered to give to her friend from her arm. The petition showed that if there was any liability, it was liability of the physician and not of the sanatorium.

### Bookkeeper Without Power to Employ Physician

(*West Lumber Co., v. Nash (Tex.), 243 S. W. R. 704*)

The Court of Civil Appeals of Texas says that plaintiff Nash, a physician, sued the defendant lumber company for medical attention and room in a sanatorium for an employee of the defendant, named Sneed, who had been shot, though not while in the performance of work for the company. The theory on which the plaintiff predicated his right to a judgment was that, after Sneed had been at the sanatorium for two days, one Reynolds called the plaintiff over the telephone, said that he was speaking for the lumber company, and told him to do what he could for Sneed, and "they would pay his bill." Reynolds testified that he was employed as bookkeeper for the company, but he denied that it was within the scope of his authority to employ a physician to render services to its employees. He further denied that he had employed the plaintiff or said the company would pay Sneed's bill. It was not enough to support a judgment for the plaintiff to show that Reynolds was the bookkeeper of the defendant, but, to support the judgment, the proof must also show that the plaintiff was authorized by the defendant to perform the services for which he sued. There was no evidence showing that Reynolds was authorized by the defendant to employ the plaintiff to perform such services, or that he had ever performed any services for the defendant that could have induced or did induce the plaintiff to believe that he had such authority, but, to the contrary, the undisputed evidence showed that he in fact had no such authority. If it is conceded that

Reynolds told the plaintiff to give Sneed the services performed by him, saying that the lumber company would pay for his services, this employment of the physician would not bind the company. It is well settled that those dealing with an assumed agent of another are bound, at their peril, to ascertain not only the fact of the agency, but also the extent of the agent's authority, and that in case either is controverted, as in the present case, the burden of proving that the assumed agent was in fact the agent, and had the authority to act in the capacity claimed for him, is on the plaintiff. Manifestly, no such burden was met in the present case, and, the facts appearing to have been fully developed, the judgment recovered by the plaintiff is reversed, and a judgment rendered for the defendant.

## Society Proceedings

### SOUTHERN SURGICAL ASSOCIATION

*Thirty-Fifth Annual Meeting, held at Memphis, Tenn., Dec. 12-14, 1922*

(Concluded from page 206)

#### Accidental Ureteral Injuries During Pelvic Operations

DR. JOHN M. MAURY, Memphis, Tenn.: The remedial measures that may be employed in these cases are: (1) removal of the ligatures; (2) implantation of at least one ureter into the bladder; (3) uretero-ureteral anastomosis on one or both sides; (4) nephrostomy, and (5) severing one or both ureters and bringing the proximal ends to the skin surface. Removal of the ligatures is the procedure of choice. In order of choice, ureterovesical implantation, uretero-ureteral anastomosis or nephrostomy may be employed. In the event of the patient's condition precluding the possibility of choice, the least time-consuming procedure must be followed, and this is nephrostomy. Double nephrostomy may be done in a few minutes, with the expectation that absorption of the ligature and canalization will result in due course of time, while the condition of the patient may make an anastomosis a formidable procedure. If canalization is not satisfactorily accomplished the patient is in good condition for anastomosis or implantation.

#### Spontaneous Hematoma Occurring in a Case of Spindle-Cell Sarcoma of Kidney

DR. FRANK K. BOLAND, Atlanta, Ga.: The case is unique for two reasons: first, because I have been unable to discover in the literature the report of a similar condition occurring in a neoplasm of the kidney; and second, because the rupture of the kidney and formation of the hematoma were the first signs of the disease manifested in the case. Previous to this time the patient had been in good health, and presented no symptoms that would lead one to suspect her of having anything wrong with her kidney. Apparently the rupture occurred early in the course of the disease.

#### Autotransfusion

DR. LUCIUS E. BURCH, Nashville, Tenn.: In a case of splenectomy for splenic anemia, the operation was difficult and bloody. The large amount of blood that was lost in the abdomen during the operation was recovered by means of expressing the contents of the abdominal packs into a glass receptacle. A little more than 800 c.c. of blood was recovered, and after this was citrated and strained through four layers of gauze, it was injected into a vein at the elbow. At the time the transfusion was started, the pulse was 140 and barely perceptible. At its completion, the pulse was 102, strong, and the patient's color was good. There was no reaction following the transfusion; operative recovery was unusually smooth, and at the end of two weeks he was able to leave the hospital and return to his home. I have used this procedure in three other cases successfully—two of ruptured tubal pregnancy, and a nephrectomy. Autotransfusion is a safe procedure, although in a limited number of cases reactions will occur. Sodium citrate is not essential. Physiologic sodium chlorid solution will make an admirable substitute,



and if neither of these is at hand, the pure blood may be reinjected. Extra-uterine pregnancy will offer the largest field of usefulness for this procedure, but in wounds of the spleen and liver, wounds of the lung producing a hemothorax, and in operations during which a large amount of blood is unavoidably lost, it will be found not only life saving but hastening postoperative recovery. Contaminated blood should not be thrown away. This blood should be given as a rectal drip. Autotransfusion may occasionally be used to advantage in certain obstetric complications, such as placenta praevia, rupture of the uterus, and cesarean section.

#### Sarcoma or Embryoma of the Kidney in Infants

DR. CHARLES R. ROBINS, Richmond, Va.: A boy, aged 12 months, was sent to me on account of a lump in the right side of the abdomen, which proved to be a globular tumor filling nearly the entire abdomen. It could be palpated posteriorly in the right kidney space and flank, and seemed to be somewhat attached at this point, although freely movable. The pelvis and subcostal region appeared to be clear, and the tumor projected anteriorly. A diagnosis of sarcoma of the kidney was made and operation advised, which was done two days later. The ascending colon and small intestine had become displaced to the left of the tumor. The peritoneum was incised external to the ascending colon and the kidney removed from its bed without difficulty. The pedicle was isolated, and the vessels and ureter ligated separately. At the lower pole of the kidney, an aberrant artery and vein entered. These were ligated separately. There was comparatively little bleeding, which was easily controlled, the peritoneum was sutured, and the abdominal wound was closed without drainage. The tumor was about the size of a grapefruit, and sprang from the lower pole of the kidney. The upper portion of the kidney was quite normal.

#### Brain Abscess

DR. HARRY HYLAND KERR, Washington, D. C.: A study of 120 cases of abscess of the frontal lobe recorded in the literature shows nearly half of them undiagnosed until the necropsy, and the mortality from this type is about 80 per cent. Persistent headache with sustained leukocytosis, and especially the presence of retinal changes indicative of pressure in cases of drained frontal sinusitis or ethmoiditis, should demand exploration. Exploration by the two-stage operation through a sterile field may be indicated. Direct drainage with a minimum of trauma should be established and not be disturbed until all symptoms have subsided. It is of paramount importance to drain a brain abscess too long rather than too short a time.

#### Factors of Safety in Thyroid Surgery

DR. WILLARD BARTLETT, St. Louis: I feel that I have been greatly helped in handling this difficult subject by graduated approach, classification as to operative indications, and cooperation of the internist. All patients are classified as to operative indications in one of five groups: (1) ligation of superior thyroid vessel group; (2) unilateral resection of the male subject; (3) unilateral resection of the female subject; (4) bilateral resection with wound left open, and (5) bilateral resection with complete wound closure. Three exceedingly important considerations are: (1) anesthesia, 0.5 per cent. procain infiltration with preliminary narcotics; (2) the operation performed wherever the patient's nervous system is most protected; (3) the wide open wound in the highly toxic subject. Five considerations, above all others, influence me in my estimate of the operative risk: (1) myocardium; (2) kidney function; (3) metabolic rate (relative); (4) weight (relative), and (5) self-control.

#### Ranula, with Comments on the Thompson Theory of Origin

DR. V. P. BLAIR, St. Louis: Thompson's hypothesis, that the deep ranula and related cysts originate from migrated positions of the cervical sinus, is sufficiently broad to explain all heretofore observed types. It offers at least a logical basis for adequate surgery. My patient had a cystic mass on the left side of the floor of the mouth, seen from within the mouth and also externally in the submaxillary region when she swallowed. The mass could be felt bimanually.

Fluctuation was present. A swelling was also present on the right side, seen from within the mouth and apparently lost posteriorly in the neighborhood of the first molar. The swelling on the left side was approached from an external submaxillary region incision. A cystic mass protruded from the floor of the mouth behind the posterior edge of the mylohyoid muscle. The mass was dissected free from the hyoglossus muscle, inner internal pterygoid muscle and from the wall of the pharynx. On completion of the excision, the right sided mass had disappeared.

#### White Bile in the Common Duct

DRS. E. STARR JUDD and JOHN H. LYONS, Rochester, Minn.: The presence of a colorless liquid (without bile pigment) in obstructed common and hepatic ducts usually indicates increased operative risk. In the Mayo Clinic series the operative mortality was 21 per cent., in spite of cautious preoperative measures and postoperative care, including calcium and transfusions. We believe that while the mortality is high, it is probably no higher than it would be in a series of cases of complete biliary obstruction of the same duration with green bile in the common and hepatic ducts. Our nineteen cases occurred among 649 operations on the common and hepatic ducts in four years. In nine of these, the obstruction was due to stone in the common or hepatic duct, and in six to trauma at a previous cholecystectomy; in two the obstruction was due to carcinoma (one of the pancreas and one of the ampulla), and in one it was due to pancreatitis. In one instance the white bile seemed to occur as a result of cholangitis. In no instance in which the gallbladder was present was it found to be normal. Seventeen of the nineteen patients were intensely jaundiced at the time of operation, and there had been no recent decrease in the jaundice. One patient had a biliary fistula; one was not jaundiced, although there was complete obstruction to the common duct by stone. In the latter instance, cholecystectomy and cholecystostomy with removal of the stone resulted in drainage of bile on the fourth day after operation. The patient made an uneventful immediate convalescence, but died on the thirty-second day after operation, because of acute hemorrhagic pancreatitis. Rous and McMaster have shown experimentally that white bile occurs only when the obstructed ducts are not connected with a normally functioning gallbladder, and conclude that this fluid is a secretion of the mucosa of the biliary passages which occurs with obstruction when the secretion of the mucosa of these passages is greater than its resorption. The findings in the patients observed at the Mayo Clinic bear out the conclusions that Rous and McMaster made from their experimental work. The liver does not necessarily cease to secrete bile in these cases, although it is probable that the hepatic function may be suspended for a time in certain patients and entirely reestablished later.

#### Errors in Home Treatment of Appendicitis

DR. FRED W. BAILEY, St. Louis: The virulence of appendicitis is not decreasing. It is because of the fact that careless, indifferent treatment obtains. In many forms of appendicular colic that are lashed into a fulminating process by purgatives, the patients would recover from the immediate attack if sanely treated, and could then be operated on without mortality. Until we know the exact pathologic condition present in each case, we cannot hope to prognosticate the outcome. The interval operation is a misnomer. The time to operate is at the earliest moment of positive diagnosis, provided talent is available and the environment acceptable.

#### Treatment of Diverticulum of the Esophagus

DR. CHARLES H. MAYO, Rochester, Minn.: External surgical removal in one or two stages, change of position, or obliteration are the methods of choice. If a general anesthetic is used, the sac must be well emptied before operation. About thirty years ago, while I was bringing up a large intrathoracic sac, the patient, who was under a general anesthetic, almost suffocated by the contents pouring into the trachea; he very nearly died later from bronchopneumonia. This experience led to the employment of a local anesthetic, usually procain, with some preliminary morphin, in virtually all such cases.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Public Health, Chicago

December, 1922, 12, No. 12

- Symposium on Next Step for State Health Departments. E. R. Kelley.—p. 995.  
Id. Emphasis Shifting from Disease Prevention to Health Promotion. W. S. Rankin, Raleigh, N. C.—p. 999.  
Id. E. Martin, Harrisburg, Pa.—p. 1005.  
Id. I. D. Rawlings, Springfield, Ill.—p. 1009.  
Id. E. G. Williams, Richmond, Va.—p. 1012.  
Measures for Control of Acute Respiratory Diseases. W. A. Evans, Chicago.—p. 1015.  
Plans to Reduce High Mortality from Acute Respiratory Diseases in Winter. H. F. Vaughan and G. T. Palmer, Detroit.—p. 1022.  
Mental Hygiene Service for Children of Preschool Age. A. Gesell, New Haven, Conn.—p. 1030.

#### American Journal of Tropical Medicine, Baltimore

November, 1922, 2, No. 6

- Final Report on Control of Yellow Fever in Merida, Yucatan, Mexico. M. E. Connor, New York.—p. 487.  
\*Preliminary Survey of Tropical Diseases in Massachusetts. G. C. Shattuck, Boston.—p. 497.  
Porto Rico as Field for Study and Investigation of Tropical Hygiene. R. W. Hegner, Baltimore.—p. 519.  
\*Cultivation of Trichomonas from Human Mouth, Vagina and Urine. K. M. Lynch, Dallas, Tex.—p. 531.  
Cultivation of Blastocystis and Determination of Species. K. M. Lynch, Dallas, Tex.—p. 539.  
Special Entomologic Mounts. C. S. Ludlow, Washington, D. C.—p. 551.  
Use of Nutrient Agar for Rearing Dipterous Larvae. R. C. Shannon, Ithaca, N. Y.—p. 555.  
Experimental Investigation of Supposed Poisonous Qualities of Colorado Potato Beetle Leptinotarsa Declemlineata. F. Defiel, Minneapolis.—p. 559.  
\*Effect of Tartar Emetic Intravenously on Nonprotein Nitrogen of Blood. M. D. Levy and P. S. Dimmitt, Galveston, Tex.—p. 569.

**Tropical Diseases in Massachusetts.**—Data are presented by Shattuck which throw light on the frequency and source of such tropical diseases as are found commonly in Massachusetts. The records of the Massachusetts State Department of Health covering the period of five years from Jan. 1, 1917, to Dec. 31, 1921, inclusive, show that there were admitted: malaria, 414 cases; dysentery, 228 cases; smallpox, 137 cases; pellagra, 75 cases; uncinariasis, 33 cases; elephantiasis, 27 cases; actinomyces, 12 cases; leprosy, 12 cases; beriberi, 5 cases; bilharziosis, 5 cases; aleppo boil, 3 cases; blastomycosis, 2 cases, and one case each of sprue and mycetoma.

**Identity of Trichomonas.**—Lynch is of the opinion at the present that *Trichomonas vaginalis* and *Trichomonas buccalis* have not been clearly differentiated and that they are probably one organism.

**Effect of Tartar Emetic on Nonprotein Nitrogen of Blood.**—In order to determine whether tartar emetic given intravenously in the dosage usually employed in treatment had any deleterious effect on the patient, Levy and Dimmitt selected six cases of varied medical ailments. Complete blood analyses were made. The patients were all on the ordinary house diet, and were ambulant. Tartar emetic, in a 2 per cent. solution, was given intravenously every other day—six doses being given—starting with 0.5 c.c. and ending with 5 c.c. It was noted that tartar emetic intravenously, even in small doses, over a comparatively short period of time, is capable of producing a decided increase in the non-protein nitrogen elements of the blood.

#### Annals of Medical History, New York

September, 1922, 4, No. 3

- Guy Patin and Medical Profession in Paris in Seventeenth Century. F. R. Packard, Philadelphia.—p. 215.  
Robert Talbot, Madame de Sévigné and Introduction of Cinchona. G. Dock, St. Louis.—p. 241.  
Regulating Physicians in Colonial Virginia. E. Ingle, Richmond, Va.—p. 248.  
Some English Worthies of Science of Interest to Ophthalmologists. B. Chance, Philadelphia.—p. 251.  
Early History of Anatomy in United States. E. B. Krumbhaar, Philadelphia.—p. 271.

- Some Early Observers of Albuminuria. W. Dock, Boston.—p. 287.  
Medical Magic. I. H. Coriat, Boston.—p. 291.  
Caduceus and Its Symbolism. R. Wilson, Jr., Charleston, S. C.—p. 301.  
George Cheyne and "English Malady." W. R. Riddell.—p. 304.

#### Boston Medical and Surgical Journal

Dec. 28, 1922, 187, No. 26

- Improvement of Health Conditions in Rural Communities. M. V. Safford, Boston.—p. 946.  
Empyema; Report of One Hundred Cases. D. S. Adams, Worcester, Mass.—p. 947.  
\*Comparative Luminal, Bromid, Diet and Eliminative Treatment of Epilepsy. B. L. Ashmore, North Grafton, Mass.—p. 950.  
\*Fibroma and Sarcoma of Ovary. Report of Two Unusual Ovarian Tumors. J. V. Meigs, Boston.—p. 952.  
Lipoma Weighing Two and One-Half Kilograms, Taken from Inner Aspect of Right Arm. A. D. Kirk, Worcester.—p. 956.  
\*New Method for Estimation of Peptic Activity of Gastric Contents. Suitable to Clinical Application. C. W. McClure and P. L. E. Schabacker, Boston.—p. 957.  
Fracture Dislocations of Humeral Head. W. Van Hook, Chicago.—p. 960.

**Treatment of Epilepsy by Various Methods.**—A group of fifty male patients varying in age from 19 years to 66 years, with an average age of 41.1 years, and duration of epilepsy ranging from three and one-half years to fifty-eight years preceding treatment, with an average of twenty years during which seizures have taken place in the thirty-seven cases, having reference to the time when seizures were first noted, were placed under this drug and diet treatment by Ashmore for six months. In cases of both phenobarbital and the bromids, active treatment periods completed, the seizures were more nearly controlled with the former drug. From the standpoint of numbers and oftentimes in regard to severity, cases of idiopathic origin were more responsive. The diet and elimination treatment group obtains last place on the list, but this treatment is very important, either alone or in conjunction with other recognized methods of treatment. No particular laxative or cathartic appeared to be superior in effect to others during this period. Special care to avoid autointoxication in one group played a very important rôle in the reduction of seizures obtained. Beneficial effects were noted in all groups during posttreatment observation period.

**Fibroma and Sarcoma of Ovary.**—The two cases reported by Meigs are interesting because they combine fibroma with two different types of tumors, a fibrosarcoma in one case and a malignant papillary cystadenoma in the other. The opposite ovaries were involved in both cases, the first containing small fibromas and the other a malignant papillary cystadenoma.

**Estimation of Peptic Activity of Gastric Contents.**—McClure and Schabacker present a practical method for the estimation of peptic activity of gastric contents, conforming to the general principles of enzyme action as at present understood and describe the application of the method to the determination of peptic activity of the stomach contents of human beings.

#### Journal of Medical Research, Boston

August-October, 1922, 43, No. 4

- \*Lymphoid Metaplasia (Hyperplasia?) in Mammalian Bone Marrow. E. B. Krumbhaar, Philadelphia.—p. 369.  
Focal Infection; Bacteriologic Study of Gums in Two Hundred Cases. R. A. Keilty, Danville, Pa.—p. 377.  
\*Group of Virulent, Poison Producing Diptheroids, Isolated Especially from Postscarlatinal and Other Cases of Otitis Media. F. Parker, Jr., New York.—p. 387.  
Relation of Hemophages to Antibody Production. W. E. Cary, Chicago.—p. 399.  
Preparation of Bacterial Antigens. C. O. Melick, Chicago.—p. 405.  
Fixed Tissue Phagocytosis. S. Motohashi, Chicago.—p. 419.  
\*Sensitization Experiments with Tubercle Bacillus and Protein Extracts. M. I. Smith, Washington, D. C.—p. 435.  
\*Histology of Superior Lacrimal Gland in Mental Disease and Defect. M. M. Canavan, Boston.—p. 447.  
Quantitative Studies on Wassermann Reaction. L. G. Hadjopoulos, New York.—p. 455.  
\*Effect of Splenectomy on Production of Antibodies. S. Motohashi, Chicago.—p. 473.

**Lymphoid Metaplasia in Bone Marrow.**—In a monkey that had undergone splenectomy and partial myelotomy and nodectomy, two years previously, and had received injections of camphorated oil shortly afterward, the bone marrow was found by Krumbhaar at necropsy to be studded with lymphoid follicles, with well developed germ centers. He thinks it is



probable that these lymphoid follicles developed in response to a demand for more lymphoid tissue, as the result of one or more of the experimental procedures.

**New Poison Producing Diphtheroids Isolated.**—A bacillus previously undescribed has been isolated by Parker from subacute and chronic lesions in human beings, that is pathogenic for rabbits, guinea-pigs and white mice. The bacillus is evidently a poison producer as it always remains localized and also a poison can be produced in vitro giving the same pathologic changes as the living organisms. This poison is neutralized somewhat by normal horse serum and to a greater extent by diphtheria antitoxin, but not to such a degree as by its own antiserum. That this organism is definitely not an atypical diphtheria bacillus has been shown by immunologic tests.

**Sensitization Experiments with Tubercle Bacillus.**—The results of Smith's experiments would seem to indicate that the existence of a state of general hypersensitiveness to the protein of the tubercle bacillus in the tuberculous organism is not an essential of the infection. On the contrary, the development of the anaphylactic state in experimental infection appears to be conditional on the parenteral introduction of tuberculo-protein coincidentally with the infection. Whether or not general sensitization by the protein of the bacilli it harbors occurs in the tuberculous animal at some period of the disease cannot be stated definitely; the evidence at hand seems against it. It is further evident, Smith says, that there is no apparent relation between the tuberculin reaction and the anaphylactic state which may or may not exist in the experimentally infected animal. The fact disclosed by these experiments that "old tuberculin" is devoid of sensitizing properties further fails to lend support to the assumption that the tuberculin reaction is an anaphylactic manifestation.

**Histology of Lacrimal Gland in Mental Diseases.**—In a series of forty superior lacrimal glands removed from patients from 6 to 82 years of age, Canavan failed to find that the measurements equaled the one specified by Piersol as being the average, except in three cases of twenty-four measured. Distinct differences in size may occur on the two sides. Fat cells invade the gland at all ages. Fibrous tissue increases in amount as age increases. The glands do not react histologically to meningitis or encephalitis, appearing to be in no sense a phagocyte station. Lymphocytes and plasma cells are present between the acini in this series of cases of mental disease and defect, without regard to age. It is possible that these cells presage the formation of connective tissue. It is not impossible that these cells have an internal secretion.

**Effect of Splenectomy on Antibody Production.**—Motohashi states that the removal of the spleen from rabbits profoundly modified the production of specific hemolysins, both as to the site and as to the concentration in the blood stream. When, however, the amount of antigen employed is large, the resulting concentration of the antibody in the serum is equal in splenectomized and nonsplenectomized rabbits. When by splenectomy the macrophage activity of the bone marrow and liver is increased, there is a corresponding increase in the antibody producing power in these tissues.

### Journal of Parasitology, Urbana, Ill.

December, 1922, 9, No. 2

- \*Effects of Changes in Diet on Incidence, Distribution and Numbers of Certain Intestinal Protozoa of Frog and Toad Tadpoles. R. W. Hegner.—p. 51.
- Phases in Parasitism of Unionidae. A. D. Howard and B. J. Anson, Fairport, Ia.—p. 68.
- Prevalence of Hookworm and Other Intestinal Nematodes in Adult Filipinos. B. Schwartz and M. A. Tubangui.—p. 83.
- Trypanosoma Brucei as Filterable Virus. W. W. Reich and T. D. Beckwith, Berkeley, Calif.—p. 93.
- Larvae of Moniliformis Moniliformis (Brems) Found in African Cockroaches. T. Southwell.—p. 99.
- New Methods in Nematode Technic. D. C. Hetherington.—p. 102.

**Effect of Diet on Intestinal Protozoa.**—Hegner's work was done with tadpoles some of which were fed a diet of flour mixed with gland extracts, and others an animal diet. Lack of food was found to be disadvantageous to the intestinal protozoa. Thyroid feeding results in the decrease both

in incidence and numbers of intestine protozoa. It is interesting to note that the two substances that are known to bring about marked modifications in the intestine, namely, extracts of thyroid and prostate, affect adversely the intestinal protozoa. The animal diet seemed to have no effect on the protozoa.

### Journal of Radiology, Omaha

December, 1922, 3, No. 12

- Radiotherapy in Carcinoma of Larynx: Radium Needles Through Thyroid Membrane. G. E. Pfahler, Philadelphia.—p. 511.
- Surgical Aspect of Cancer. C. Beck, Chicago.—p. 517.
- Radium and Roentgen-Ray Treatment in Metastatic Testicular Tumors. H. H. Bowing, Rochester, Minn.—p. 519.
- Roentgen-Ray Demonstration of Nasolacrimal Passageways—Normal and Obstructed. H. P. Doub and J. M. Carter, Detroit.—p. 521.
- Peptic Ulcer. R. T. Wilson, Temple, Tex.—p. 524.
- Bone Diseases; Osteoporosis or Lipomasia from Fixation and Nonuse. J. C. Bloodgood, Baltimore.—p. 528.

### Journal of Metabolic Research, Morristown, N. J.

August, 1922, 2, No. 2

- Islands of Langerhans in Elasmobranch and Teleostean Fishes. Part I. The Skate. S. Jackson, Montreal.—p. 141.
- \*Source of Insulin. Study of Effect Produced on Blood Sugar by Extracts of Pancreas and Principal Islets of Fishes. J. J. R. Macleod, Toronto.—p. 149.
- \*Physical Measurements of Diabetic Patients. H. F. Root and W. R. Miles, Boston.—p. 173.
- \*Experimental Studies in Diabetes. IV. Lipemia. 1. Analysis of Blood Lipoids in Diabetic Animals and Patients. M. B. Wishart, New York.—p. 199.
- \*Id. 2. Production of Diabetic Lipemia in Animals, and Observations on Some Possible Etiologic Factors. F. M. Allen.—p. 219.

**Source of Insulin.**—As a result of the improved histologic technic introduced by Lane and Bensley and of the recent demonstration by Banting, Best, Collip, Macleod and Noble that an alcoholic extract of mammalian pancreas—known as insulin—profoundly lowers the percentage of blood sugar in normal rabbits, Macleod says, the whole question as to the significance of the islet tissue, and particularly whether it is the source of insulin, is reopened for investigation. There are two aspects to the problem, the one being to compare by modern histologic methods the exact cytologic structure of the islets in the mammalian and the *Elasmobranch* pancreas with that of the principal islets found by Rennie in the *Teleostei*, and the other, to study the effect of extracts prepared from these sources on the percentage of blood sugar in normal rabbits. In general, the plan of investigation has been to observe from time to time the amount of blood sugar in normal rabbits injected with extracts prepared from the following sources: (1) the pancreas of representative *Elasmobranchii* [*Squalus* (dog fish) and *Raja* (skate)]; (2) the principal islets of representative *Teleostei* [*Myoxocephalus* (sculpin) and *Lophius* (angler fish)], and (3) the zymogenous (acinar) pancreatic tissue, as free as possible from islets, in the same and certain other *Teleostei*. Potent insulin preparations were readily made from the pancreas of the cartilaginous fishes—the dog fish (*Squalus acanthias*) and the skate (*Raja*). Still more so was this the case with the principal islets of Rennie, which are found in many of bony fishes, the Angler (*Lophius*) and the sculpin (*Myoxocephalus*). Since these are readily available fishes, they may serve as a practical source of insulin. No insulin could be prepared from the pancreatic tissue proper (zymogenous or acinar) of the representative bony fishes (*Lophius myoxocephalus* and *Zoarces*). Although the anatomic relationships of these tissues are still somewhat obscure, these results, in Macleod's opinion, afford strong direct evidence for the hypothesis that insulin, as its name implies, is derived from the insular and not the zymogenous tissue of the pancreas.

**Physical Measurements of Diabetics.**—A group of 133 diabetic men and women have been compared by Root and Miles with both Dreyer's and the medico-actuarial weight standards. Although normal in stature, they are found to have been, on the average, 20 per cent. overweight prior to the onset of the disease, and at the time of examination they were about 10 per cent. underweight. The fifty-six women showed more severe diabetes than the seventy-seven men, and as a class had much lower tolerance per kilogram of body weight, whether expressed as total available glucose,



or as the carbohydrate, in the diet. Glucose tolerance per kilogram of body weight is more uniform between different diabetic patients than is the carbohydrate tolerance. The latter appears, therefore, the more definitive expression for tolerance in diabetes. The older diabetics have been more obese, have lost a larger percentage of their maximum weight, and demonstrate the longer durations. Diabetics who have never been obese, according to medico-actuarial standards, are found to have been 10 per cent. overweight when compared with Dreyer's standard. They are distinguished by abnormally narrow chests and probably have been fat for their build. Obesity is closely related to the onset of diabetes mellitus, in fact, it is almost invariably present, but the intensity of the disease frequently appears inversely proportional to the amount of excess fat. The average diabetic patient is not physically fit, using body weight as an index. His vital capacity may be as large as that of normal persons, notwithstanding his bodily weakness. Vital capacity measurements in cases of uncomplicated diabetes are not clinically helpful.

**Lipemia in Diabetes.**—The combination of active severe diabetes and a high fat diet in Wishart's opinion is undoubtedly most conducive to lipemia. Some degree of lipemia, however, may be reckoned among the most stubborn symptoms of severe diabetes, and may persist for at least several weeks after disappearance of both hyperglycemia and acidosis, on diets very low in fat and total calories. Diets high or low, respectively, in cholesterol or lecithin have shown no decisive influence in either producing or clearing up lipemia. Diabetic patients or animals, known to be subject to lipemia, have not shown any remarkable retention of cholesterol in the blood when fed cholesterol or cholesterol rich foods. No uniform parallelism has been found between the sugar or acetone in the blood or urine and the accompanying degree of lipemia. The same is true of the carbon dioxide capacity of the plasma. Also, the giving of carbohydrate or its exclusion from the diet seems not to be a determining factor in lipemia. When active diabetic symptoms are restored by an excessive caloric diet composed essentially of protein, carbohydrate and alcohol, a definite though moderate lipemia seems to result as one of the active symptoms. It is undecided whether alcohol has any specific influence in lowering lipemia, comparable to its occasional temporary action in reducing hyperglycemia and glycosuria.

**Experimental Diabetic Lipemia.**—Severely diabetic dogs which digest high fat diets regularly develop some degree of abnormal lipemia, and in a minority of such animals this lipemia becomes extreme (15 per cent. or more of blood fat). It is known that the chemical peculiarities so far as the relations of neutral fat, cholesterol, lecithin, etc., are concerned, resemble those in human diabetic lipemia, though the great mass of the analytic results were lost. The chief positive result of Allen's investigation, therefore, is the establishment of a complete similarity between clinical and experimental diabetes in regard to lipemia. Apart from a sufficient supply of fat in the diet, the one indispensable prerequisite for diabetic lipemia is the existence of active severe symptoms in the form of glycosuria and severe cases with glycosuria abolished by diet never exhibit any extreme grade of lipemia, however high the fat intake. Diabetic lipemia evidently represents some secondary breakdown in fat metabolism, not directly connected with the endocrine function of the pancreas and not due merely to excess of fat in metabolism or loss of sugar from the body. There are wide variations in individual susceptibility to this disorder among both animals and patients. Tests with a wide variety of endocrine, dietary and other influences failed to reveal the nature of the disturbance or the origin of the susceptibility.

### Journal of Urology, Baltimore

December, 1922, 8, No. 6

Case of Double Kidney and Double Ureter; Review of Literature. C. M. Harpster, T. H. Brown and H. A. Delcher, Toledo, Ohio.—p. 459.

\*Case of Extreme Dilatation of Ureters. T. F. Laurie, Syracuse, N. Y.—p. 491.

Supernumerary Ureters with Extravesical Openings. H. D. Furniss.—p. 495.

\*Pathologic Complications with Duplication of Renal Pelvis and Ureter (Double Kidney). W. F. Braasch and A. J. Scholl, Jr., Rochester, Minn.—p. 507.

**Double Kidney and Double Ureter.**—The important facts concerning Laurie's case are that the patient, aged 37, had had infantile paralysis at 2½ years of age; that he has a curvature of the spine which began at 14; that in the urinary tract he has no apparent obstruction to urinary outflow and no interference with the mechanism of urination; the bladder is markedly contracted, the ureters and pelvis markedly dilated. There are no signs of infection. He urinates about every hour during the day and about every two hours during the night. The desire to urinate is rather urgent.

**Complications with Duplication of Kidney Pelvis and Ureter.**—The 144 patients, whose cases are discussed by Braasch and Scholl, may be divided, according to incidence of pathologic conditions, into: Group 1, those who were operated on, 30; Group 2, those having definite pathologic lesions who were not operated on, 24; Group 3, those in whom the evidence of pathologic lesions was doubtful, 29, and Group 4, those without evidence of pathologic complication in whom the discovery of the condition was purely accidental, 61. Fifty-four patients were found to be suffering with definite pathologic complications. In the 30 patients in Group 1 who were operated on, the various lesions described were: ureteral obstruction with hydronephrosis or pyonephrosis in 8, renal tuberculosis in 6, renal lithiasis in 7, ureteral lithiasis in 3, and atrophic pyelonephritis in 4. In 1 case the aberrant ureter from the upper segment opened into the vagina; in another an anomalous vessel crossed the ureter causing obstruction. The lower segment of the kidney was primarily involved in 9 cases, and the upper segment in 5 cases; both segments seemed equally involved in 13 cases. It is evident that the pathologic complication is confined largely, if not entirely, to one segment in about one half of the cases, and, furthermore, that the lower segment is more often affected than the upper. Of the 24 patients in Group 2 who were not operated on, essential hematuria occurred in 4; unilateral infection in 2; bilateral infection (1 incomplete bilateral duplication) in 9; ptosis in 3; ureteral stones passed after manipulation in 3; and stone in the lower pelvis of a double kidney, left intact because of various complications in 3 cases.

### New Orleans Medical and Surgical Journal

December, 1922, 75, No. 6

Acute Appendicitis a Surgical Problem. P. Graffagnino, New Orleans.—p. 277.

Importance of History in Diagnosis of Tubal Pregnancy. E. L. King, New Orleans.—p. 288.

Observations with Roentgen Ray on Appendix. A. Henriques and L. J. Menville, New Orleans.—p. 292.

Diagnosis and Treatment of Flat Foot. E. S. Hatch, New Orleans.—p. 294.

Diagnosis of Foreign Bodies in Bronchi. R. C. Lynch.—p. 300.

Organization of 312th Medical Regiment. R. B. Shackelford, New Orleans.—p. 307.

Unusual Eruptive Disease in Childhood (Ecanthem Subitum): Report of Seven Cases. R. Crawford and G. R. Williamson.—p. 309.

### New York Medical Journal and Medical Record

Dec. 25, 1922, 116, No. 12

Alleviation of Pain in Severe and Fatal Illness. J. L. Corning, New York.—p. 677.

Physiologic Iodin. Essential Element in Animal Organism: Influence on Normal Metabolism: Relation to Glandular Activity, Control of Blood Pressure and Senility. A. J. Quimby, New York.—p. 680.

Neurosyphilis and Neurotropic Strains. J. A. F. Pfeiffer, Baltimore.—p. 683.

Amyostatic Syndrome: Lenticular, Striate or Dyskinetic Disease. J. V. Haberman, New York.—p. 687.

Surgical Treatment of Chronic Sciatica. W. J. Taylor, Philadelphia.—p. 693.

Urinary Methods of Value. J. Rosenbloom, Pittsburgh.—p. 696.

Rôle of Traumatic Factor in Pathogenesis of Pericollic Bands and Membranes. P. A. D'Acerno, West Hoboken, N. J.—p. 699.

Removal of Sharp Pointed Foreign Bodies from Rectum. A. A. Landsman, New York.—p. 703.

Primary Nodular Cancer of Pancreas. H. I. Goldstein, Camden, N. J.—p. 704.

Cancer of Rectum in Presence of Four Plus Wassermann. M. Golob, New York.—p. 706.

Treatment of Renal Affections by Mineral Waters and Baths. F. Kisch.—p. 709.

Law and Concern of Public Health. S. D. Hubbard, New York.—p. 711.

Drug Addicts and Riker's Island. J. A. Hamilton, New York.—p. 715.



**New York State Journal of Medicine**December, 1922, **22**, No. 12

- Cholecystitis; Its Relation to Infection of Liver and Pancreas. W. H. Barber, New York.—p. 543.  
 Urinary Calculi. T. F. Laurie, Syracuse.—p. 549.  
 Treatment of Bladder Tuberculosis After Nephrectomy. E. L. Keyes, Jr., New York.—p. 553.  
 Use of Radium in Treatment of Uterine Bleeding Other Than Cancer. H. B. Matthews, Brooklyn.—p. 556.  
 Incidence of Miscarriage in Private Obstetrical Practice with Discussion of Pathology. J. L. Huntington, Boston.—p. 559.  
 Pregnancy Complicating Heart Disease. H. E. B. Pardee, New York.—p. 564.  
 Digestive Complaints of Cardiac Patient. T. F. Reilly, New York.—p. 568.  
 Quackery and Causes for Its Growth. M. Nicoll, Jr., New York.—p. 572.

**Pennsylvania Medical Journal, Harrisburg**December, 1922, **26**, No. 3

- Doctor of Old School. E. J. G. Beardsley, Philadelphia.—p. 133.  
 Concerning University Extension Postgraduate Medical Work. G. H. Meeker, Philadelphia.—p. 140.  
 Physiologic Consideration of Nephritis. G. A. Clark, Scranton.—p. 144.  
 Postoperative Insanities. D. J. McCarthy, Philadelphia.—p. 153.  
 Acute Empyema of Thoracic Cavity. E. C. Winters, Ford City.—p. 159.  
 State Control of Syphilis. S. L. Gans, Harrisburg.—p. 162.  
 State Control of Diphtheria. J. B. McCreary, Harrisburg.—p. 163.  
 State Control of Puerperal Sepsis. E. B. Piper, Philadelphia.—p. 164.  
 \*Napkin Eruption of Jacquet. S. Crawford, Pittsburgh.—p. 165.  
 \*Human Tuberculosis of Bovine Origin. I. H. Alexander, Pittsburgh.—p. 173.  
 Abnormalities of Nose and Throat of Interest to General Practitioner. H. M. Goddard, Philadelphia.—p. 177.

**Napkin Eruption of Jacquet.**—Crawford advises washing the buttocks with a solution of boric acid. After careful drying, a dusting powder may be used, consisting of 2 per cent. boric acid powder in talc; or the mopping on of a powdery lotion composed of 5 per cent. each of calamine and zinc oxid powders in lime water, to which 2 per cent. boric acid may be added, is good. A lotion of 5 per cent. each of bismuth subnitrate and zinc oxid in lime or rose water, or one of equal parts each of milk of magnesia, black wash, and lime water may be indicated. In some cases dusting powders and powdery lotions do not act so well, and in these Lassar's paste, either half or full strength, may be applied as a thin protective coating. The parts should be cleansed gently with a mild soap and warm water, dried and then treated with one of the above or similar lotions. The diapers should be of some soft, nonirritating material, should be scrupulously clean always, and careful watch made for their soiling, when they are immediately changed. Diapers should never be washed in strongly alkaline soaps, and after washing should be rinsed in a weak solution of boric acid, phenol or cresol, etc. Indigestion, fermentation and other gastro-intestinal disturbances are to be corrected. Any suspected reflex disturbance should be corrected, if possible. Alkalis by mouth often prove of value. In the treatment of infectious conditions such as impetigo, vacciniiforme ecthyma, etc., milk antiseptic washes, such as a 5 per cent. solution of boric acid or a 1:5,000 mercuric chlorid solution, followed with a mild antiseptic ointment, such as a 1 per cent. ammoniated mercury, will bring about prompt healing. Infantile seborrhoeic dermatitis responds readily to a milk (1 per cent.) sulphur ointment.

**Human Tuberculosis of Bovine Origin.**—The transmutation of type has not been proved to the satisfaction of the great majority of students of internal medicine, but, Alexander says, the question of human tuberculosis of bovine origin is now generally accepted. Bovine tuberculosis, as found in man, is due to the drinking of milk from tuberculous cows. The use of meat of animals having tuberculosis is of very little, if any, importance in producing tuberculosis in man. The remedy is to make examination of all dairy cattle compulsory and to refuse a permit to sell milk to all dairymen whose herds are not free from reactors. This would not only be a great aid to public health, but would benefit the beef raising industry tremendously. The city should require all milk to be pasteurized according to whatever method necessary, to reduce the danger of infection to the minimum. The present practice of permitting diseased animals to be slaughtered in private slaughter houses and sold to the public as healthy food products,

should be overcome by requiring all animals to be slaughtered under competent inspection, and the smaller butchers whose business is not sufficiently large to require a full-time inspector, should have their animals slaughtered in a municipal slaughter house where competent inspection could be carried out.

**Public Health Journal, Toronto**December, 1922, **13**, No. 12

- Industrial Hygiene. H. A. Chisholm, Halifax, N. S.—p. 529.  
 Some Phases of the Mental Hygiene Problem. E. K. Clarke.—p. 536.  
 Source of Infection. J. J. Cameron, Antigonish, N. S.—p. 543.  
 Value of Quarantine in Communicable Disease. J. J. Middleton, Ontario.—p. 547.  
 Social Case Sheet Investigation. Result of Survey of Venereal Disease Patients in Hospital Clinics in City of Toronto During Months of July and August, 1922. M. Kensit.—p. 553.  
 Church as a Social Agency. F. N. Stapleford.—p. 563.

**South Carolina Medical Association Journal, Greenville**December, 1922, **18**, No. 12

- Relation That Legislation Should Have to True Medical Profession. D. M. Crosson, Leesville.—p. 342.  
 Treatment of Chronic Diarrhea. F. M. Durham (Columbia).—p. 346.  
 Gastric and Intestinal Flatulence; A Digestive Bugbear. G. M. Niles, Atlanta, Ga.—p. 349.  
 Cholecystitis. T. B. Reeves, Greenville.—p. 351.

**Southwestern Medicine, Phoenix, Ariz.**December, 1922, **6**, No. 12

- Importance of Diagnosis in Some Lesions of Genito-Urinary Apparatus. C. S. Vivian and W. W. Watkins, Phoenix.—p. 415.  
 Chronic and Subacute Appendix Disease. W. W. Watkins, Phoenix.—p. 426.  
 Development, Reestablishment and Maintenance of Breast Milk. E. M. Tarr, Phoenix.—p. 435.  
 Bacterial Growth in Gastro-Intestinal Tract. E. C. Prentiss, El Paso.—p. 439.

**Tennessee State Medical Association Journal, Nashville**December, 1922, **15**, No. 8

- Heart Disease from Standpoint of Prevention. W. H. Witt, Nashville.—p. 345.  
 Diagnosis of Early Pulmonary Tuberculosis. W. S. Rude, Ridgetop.—p. 350.  
 Diagnosis of Extra-Uterine Pregnancy. J. A. Crisler, Memphis.—p. 354.  
 Pyelitis. C. F. Anderson, Nashville.—p. 358.  
 Present Status of Pyloroplasty. W. M. McCabe, Nashville.—p. 363.

**Virginia Medical Monthly, Richmond**December, 1922, **49**, No. 9

- Deficiency Diseases: Diseases Resulting from Faulty Diets. J. Goldberger, Washington, D. C.—p. 489.  
 Pediatric Aspects of Nutritional Diseases. L. T. Royster, Norfolk.—p. 494.  
 Orthopedic Aspects of Nutritional Diseases. T. Wheeldon and J. B. Fitts, Richmond.—p. 498.  
 Neurologic Aspects of Nutritional Diseases. F. H. Redwood, Norfolk.—p. 503.  
 Cutaneous Aspects of Nutritional Diseases. T. W. Murrell, Richmond.—p. 505.  
 Certain Aspects of Medical Education. T. Hough, University.—p. 509.  
 Diphtheria in Virginia. A. H. Straus, Richmond.—p. 513.  
 Changes in Small Town Brought About by Health Department. B. B. Bagby, West Point.—p. 517.  
 Layman in Public Health. R. K. Flannagan, Richmond.—p. 519.  
 Oxygen Supply and Demand in General Anesthesia. R. C. Whitehead, Norfolk.—p. 523.  
 Spondylitis Deformans (Marie-Strümpell Type). A. F. Voshell, University.—p. 525.  
 Vertigo. J. Dunn, Richmond.—p. 528.  
 Chronic Gastric and Duodenal Ulcer. P. S. Smith, Abingdon.—p. 532.  
 Surgical Treatment of Chronic Gastric and Duodenal Ulcer. A. P. Jones, Roanoke.—p. 537.  
 Roentgen-Ray Phases of Chronic Gastric and Duodenal Ulcer. J. F. Armentrout, Roanoke.—p. 539.  
 Rectal Surgery. E. H. Terrell, Richmond.—p. 540.

**Wisconsin Medical Journal, Milwaukee**December, 1922, **21**, No. 7

- Challenge of Chronic Patient to Medical Profession. L. T. Brown, Boston.—p. 253.  
 Relationship of Goiter to Chronic Patient. H. G. Sloan, Cleveland.—p. 257.  
 Relationship of Pulmonary Tuberculosis to Chronic Patient. W. H. Swan, Colorado Springs, Colo.—p. 261.  
 Relationship of Abdominal Symptoms to Chronic Patient. J. A. Lichty, Pittsburgh.—p. 266.  
 Relationship of Surgical Abdomen to Chronic Patient. E. Andrews, Chicago.—p. 273.



## FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

## British Medical Journal, London

Dec. 23, 1922, 2, No. 3234

- \*Hodgkin's Disease. J. Galloway.—p. 1201.  
\*Surgical Treatment of Nontraumatic Affections of Spleen. J. Carslaw, E. H. Kettle and K. Dalziel.—p. 1204.  
\*Five Years' Survey of Routine Treatment of Fractures by Operative Methods. A. Young.—p. 1209.  
\*Temporary Plating of Fractures of Long Bones. G. H. Edington.—p. 1214.  
Treatment of Ununited Fractures by Bridge Grafts. D. Duff.—p. 1215.  
\*Extrapleural Thoracoplasty in Treatment of Pulmonary Tuberculosis. P. Bull.—p. 1217.  
Chronic Duodenal Ileus. D. P. D. Wilkie.—p. 1219.  
Infection by Bacillus Pyocyaneus Simulating Leprosy. S. Mallannah.—p. 1223.  
Hereditary Deformities. G. T. Kevern.—p. 1223.  
Vagina Infra Septa, Supra Simplex. S. M. Lawrence.—p. 1223.

**Bence-Jones Protein in Hodgkin's Disease.**—A case of so-called Hodgkin's disease is related by Galloway in which there was constantly present in the urine a protein similar to the "Bence-Jones albumin" in that it is coagulated on heating, redissolves on further heating, and reappears on cooling. It differed in that it did not coagulate below 75 C. Full coagulation occurred from 79 to 82 C. It only coagulated in the presence of a considerable amount of acids and salts like sodium chlorid or ammonium sulphate and became quite insoluble if kept at 80 C. (in the presence of acid and salt) for some minutes. It was not precipitated by hydrochloric acid under any conditions. The new protein is best detected by noting the precipitate in the cold with sulphosalicylic acid—the urine itself failing to give a heat coagulum under optimum conditions of reaction (that is, just acid to brom-cresol-purple). The new protein often separated in flocculi as the urine cooled. Microscopic and other investigations of the urine gave no evidence of true nephritis. The necropsy completely confirmed the diagnosis in the case. The kidneys were unusually affected; the capsules were greatly thickened, but stripped off easily. There were cysts in both kidneys; microscopic examination showed that the cortices of the kidneys contained small areas of the characteristic overgrowth of the disease. In another case the temperature was a perfect example of the relapsing type. With respect to roentgen-ray treatment of this disease, Galloway says, it seems to be possible in certain cases, and apparently when too rapid resolution of the lymphoid masses takes place under this irradiation, that very severe reactions with serious rise of temperature and other untoward results may follow these exposures. This phenomenon, in Galloway's opinion, suggests that alien protein poisoning occurs as the result of the breaking down and absorption of the newly formed cells. However, the tumors of Hodgkin's disease do not always diminish under roentgen-ray treatment. In some cases the application has little or no beneficial effect; it is possible that in these cases much fibrous change has taken place in the glands, so that little beneficial effect from roentgen rays can be expected.

**Surgical Treatment of Nontraumatic Affections of Spleen.**

—In Carslaw's opinion the mere finding of splenomegaly is not an excuse for operation, neither are malaria and syphilis, although trauma of the spleen in the subject of malaria may necessitate operation. He discourages operation also in leukemia and in Hodgkin's disease. In pernicious anemia he is not convinced that operation is called for; certainly not if the spleen is small. It may be, he says, that there are various types of pernicious anemia and that some of them are more suitable for operation than others. But in splenic anemia, if the patient's health and development are chronically poor, if repeated attacks of splenic pain occur, if from its size the spleen is distressing, and above all, if the danger of hemorrhage seems to have supervened, the spleen should be removed, and that without waiting too long. For if the disease is allowed to advance to the latter stage when cirrhosis of liver and, perhaps, ascites have developed, not only is the operation more difficult but the chances of ultimate success are lessened owing to the changes in the

liver. The greatest successes of splenectomy seem to have been achieved in cases of acholuric jaundice. There are, however, mild cases of this disease which may not require operation. But if hemolysis is extreme and the patient's condition is seen to be deteriorating, the operation should be recommended.

**Fixation of Fractures Endorsed.**—Young endorses the direct fixation of fracture fragments by open operation and cites his experiences in proof of his contention.

**Temporary Plating of Long Bone Fractures.**—Temporary plating is recommended by Edington in the case of the tibia, femur and humerus as being a reliable form of internal splinting. With the object of encouraging the formation of callus, the periosteum should be reflected from the area to which the plate is to be applied. Plates and screws should be removed in from three to four weeks. Looseness or fixity of screws at the time of removal is in proportion to the reaction or sluggishness of the bone, and would seem to be an index to the progress of repair.

**Extrapleural Thoracoplasty for Pulmonary Tuberculosis.**—In unilateral or mainly unilateral cases of pulmonary tuberculosis in which a cure is not effected by rational expectant treatment or pneumothorax, Bull is convinced that good results can be achieved by means of extrapleural thoracoplasty. Resection of the ribs should be carried out, under local or general anesthesia, through a paravertebral incision so that the posterior part of the ribs from the eleventh, or in any case from the tenth, to the first inclusive can be removed. If a cavity remains, it can be collapsed by means of intrathoracic transplantation of fat. The procedure will save one third of the patients who, without the operation, would be doomed.

## Edinburgh Medical Journal

December, 1922, 29, No. 6

- Early Anatomic Instruction at Edinburgh. J. D. Comrie.—p. 273.  
Old Time Reminiscence of Trench Foot. D. M. Greig.—p. 297.  
Chronic Interstitial Nephritis in Childhood: Renal Infantilism (?). H. L. Watson-Wemyss.—p. 300.  
Case of Solitary Cyst in Humerus. K. P. Brown.—p. 306.

## Journal of Tropical Medicine and Hygiene, London

Dec. 15, 1922, 25, No. 24

- Synopsis of Family Linguatulidae. L. W. Sambon.—p. 391.

## Lancet, London

Dec. 23, 1922, 2, No. 5182

- \*Surgery of Spinal Cord. W. Thorburn.—p. 1313.  
\*Treatment of Lupus by Diathermy Condenser Spark. A. E. Milner.—p. 1316.  
\*Effect of Radiation with Mercury Vapor Quartz Lamp. E. M. Hume.—p. 1318.  
\*Effect of Radiation with Mercury Vapor Quartz Lamp on Growth of Rats Fed on Diet Deficient in Fat Soluble Growth Promoting Factor. H. Goldblatt and K. M. Soames.—p. 1321.  
\*Drugs in Treatment of Diabetes Mellitus. P. J. Cammidge, J. A. C. Forsyth and H. A. H. Howard.—p. 1324.  
Cases of Obscure Infection. R. Fielding-Ould.—p. 1328.

**Surgery of Spinal Cord.**—Thorburn's paper is based on the following cases: recent injury, 7 cases; remote injuries, 18 cases; gunshot injuries, 10 cases; caries of the spine, 19 cases; syphilitic pachymeningitis, 7 cases; malignant tumors of the vertebrae, 5 cases; tumors between the laminae and dura mater, 3 cases; intrathecal tumors of the spinal cord, 7 cases; spina bifida occulta, 2 cases; rhizotomy for the relief of pain, 6 cases; exploration and drainage, 12 cases.

**Treatment of Lupus by Diathermy.**—The total number of cases of lupus vulgaris treated by Milner with the diathermy condenser spark and the careful use of roentgen-ray radiations to soften the resulting scar tissue was fifty-two. Of these twenty-four patients remain cured after from one to two years; twenty-eight are still under treatment. The average number of operations for each case cured was 3.1.

**Effect of Radiation with Mercury Vapor Quartz Lamp.**—From the experiments reported by Hume it is apparent that irradiation with the mercury vapor quartz lamp can prolong normal growth on a diet almost free, or free, from vitamin A. Whereas without irradiation growth ceased to be normal



after from seven to ten days, with irradiation it continued to be normal for from thirty-five to fifty days. Symptoms of vitamin A deficiency then began to appear, and symptoms of xerophthalmia set in earlier than in control animals. Attempts to revive growth and to cure xerophthalmia by irradiation of animals which had long (over ninety days) been on a deficient diet failed completely; the animals seemed, if possible, to go to pieces more rapidly. Irradiation of rats which had been for shorter periods (from seventeen and thirty-five days) on a vitamin A deficient diet produced a growth response which appeared to be inversely proportional, in its duration and extent, to the length of the previous period of deficient diet. The general conclusion drawn is, that there is an interaction between vitamin A and light for the growth of rats, but that the action of the light is not to produce a photosynthesis of the vitamin.

**Effect on Growth of Radiation with Mercury Vapor Quartz-Lamp.**—It is shown by Goldblatt and Soames that young rats, if irradiated with the mercury vapor quartz lamp from the time they are put on a diet very deficient in fat soluble vitamin A grow more rapidly, reach a higher maximum weight, continue to grow for a longer period, and, finally, show a general condition better than that of control rats from the same litter receiving the same diet but no irradiation. Similar differences between irradiated animals and controls were observed even in the case of a litter of rats brought up by a mother who was fed on the same deficient diet during the latter part of pregnancy and the entire period of lactation. It is apparent that irradiation with the mercury vapor quartz lamp cannot act as a substitute for the fat soluble growth promoting factor which is a necessary element of the diet.

**Drugs in Treatment of Diabetes Mellitus.**—In the opinion of Cammidge et al. treatment by drugs will never replace control of the diet in diabetes. They endeavor to show that if the food tolerance has been accurately determined and is found to be inadequate, then, and only then, the aid of appropriate drugs may be invoked to enable a maintenance diet to be taken and prolong the patient's existence under more comfortable conditions. They record experiments, indicating the way in which various drugs control carbohydrate metabolism, thus laying the foundations of a rational therapy.

### Medical Journal of Australia, Sydney

Nov. 18, 1922, 2, No. 21

Clinical Symptoms of Enlargement of Spleen in Children. H. D. Stephens.—p. 575.

\*Bile Pigments in Blood. M. Cowen and S. W. Patterson.—p. 581.

Fractures. A. Aspinali.—p. 582.

Complete Case of Leukemia in Childhood. W. D. Upjohn and H. B. Graham.—p. 585.

**Bile Pigments in Blood.**—Cowen and Patterson regard the Van den Bergh test as being a delicate reaction for bile pigments in the serum. It is more sensitive to bile pigment than Gmelin's test. They carried out the test on the serum of patients with obvious or suspected hepatic disease and patients suffering from anemia. Bilirubin is usually present in appreciable quantities in the blood. Jaundice and a direct reaction with Van den Bergh's test were found together in all instances but five of thirty-two cases. One of these patients was not clinically jaundiced at the time of testing, but stated that he had been jaundiced some time previously; his serum gave the biphasic reaction and quantitatively an increased amount of bilirubin was present. At operation a pyloric carcinoma with secondary deposit in the liver was found. In a case of cirrhosis of the liver the patient was not jaundiced and the reaction was biphasic. These cases are compatible with Van den Bergh's explanation of the biphasic reaction occurring when there is combined obstruction of ducts and functional alteration of the liver cells. Two patients suffered from catarrhal jaundice and, although jaundiced, gave no direct reaction in the serum, pointing to a functional alteration of liver cells rather than an obstruction in this disease. Another patient presented symptoms of biliary colic; he was jaundiced, but his serum did not give the direct reaction. He refused operation and the final diagnosis was not completed.

### Medical Journal of South Africa, Johannesburg

November, 1922, 18, No. 4

Gastric Ulcer. P. N. Vellacott.—p. 83.

Surgical Treatment of Gastric Ulcer. R. Daly.—p. 92.

Skin Diseases. C. Pijper.—p. 93.

### Gynécologie et Obstétrique, Paris

October, 1922, 6, No. 4

\*The Hypogastric Plexus. A. Latarjet and Rochet.—p. 225.

\*Experimental Radium Treatment. A. Kotzareff and M. Mollow.—p. 244.

\*Pneumococcus Puerperal Septicemia. C. Monckeberg.—p. 274.

\*Amputation of Cervix Above the Isthmus. H. Hartmann.—p. 277.

**The Hypogastric Plexus.**—Latarjet published in 1913 a study of this plexus in man, and he here reports research on this plexus in connection with the innervation of the uterus. Among the practical points brought out is the possibility of local anesthesia for operations on the uterine cervix by blocking the nerve branches passing to the lower uterus. The cervix is drawn down after the side culdesacs have been exposed well with the speculum. A fine needle is then introduced on each side of the cervix, to a depth of 2.5 or 3 cm., parallel to the cervix, and at the point where the lateral culdesac joins the wall. About 5 c.c. of the 2 per cent. solution of procain is then injected fan-wise. Another practical suggestion is the necessity for special care not to injure at operations the bladder nerves passing through the base of the broad ligament. Injury of these nerves explains the urinary disturbances which sometimes complicate abdominal hysterectomy or the Wertheim operation. The damage is done when the ureter is being freed, or the uterine artery ligated, or the bladder is being detached from the vagina. Loosening up the ureter from within outward usually molests less these external satellite cords which form the greater part of the bladder nerves at this point. Ligation of the uterosacral ligaments may likewise injure nerve filaments and explain postoperative pelvic neuralgia.

**Action of Radium on the Uterus.**—Radium emanations applied to the uterus and ovaries of guinea-pigs induced phenomena of shock. No effect on the tissues was apparent with doses less than 2 millicuries and sixty-two hours of exposure. Above this dose the effect is seen in degeneration and necrosis, with hyperemia and hemorrhagic foci and proliferation of connective tissue. The effect is the same whether the emanation is injected in a fluid vehicle or a needle applicator is used. The blood becomes radioactive; this induces phenomena of shock and organic lesions when injected into untreated animals. This radium-treated blood or blood serum was injected subcutaneously into other untreated animals, and it seemed to vaccinate them, as it were. After this, exposure to the radium emanations the same as before was not followed by shock, but otherwise the resulting organic lesions with the same doses seemed to be the same as in the untreated guinea-pigs, although less intense.

**Pneumococcus Puerperal Septicemia.**—The woman of 33 developed fever the third day after normal delivery, and the pneumococcus was found in the lochia but not in the mouth or nose. The midwife who had attended the woman was found to have chronic left tonsillitis, and her sputum contained numerous pneumococci. An autogenous vaccine was injected in the parturient, but pneumococcus pneumonia and peritonitis developed and proved fatal the thirteenth day.

**Cervicectomy.**—Hartmann reproduces Dartigue's five large illustrations showing the various steps of the operation with which he restored clinically normal conditions in a case of massive atresia of the cervix which had followed too intense application of Filhos' caustic. The operation is the reversal of the usual supracervical amputation, the cervix being cut away and leaving the uterus with a new portio. The bladder-uterus pouch is pushed up, without incising it, through an anterior transverse colpotomy. The uterus is then slit on the median line, thus leaving the uterine artery unmolested. Then the cervix is resected with a tapering point on each side of each stump. The triangular gap left in the cervix stumps is closed by suturing the mucosa lining of the cervix with the vaginal mucosa. He calls the operation a supra-isthmus cervicectomy and stomatoplasty by bilateral vertical évidement.



# Journal de Médecine de Bordeaux

Nov. 25, 1922, 94, No. 22

Diagnosis of Aortic Aneurysms. Cassaet and Secousse.—p. 731.

Total Inversion of Uterus and Necrotic Polyp in Vagina. F. and R. Villar.—p. 734.

Dec. 10, 1922, 94, No. 23

\*Congenital Scoliosis. H. L. Rocher and R. H. Noirit.—p. 767.

**Congenital Scoliosis.**—Rocher and Noirit describe six new cases of varying degrees of congenital scoliosis.

# Journal de Médecine de Lyon

Dec. 5, 1922, 3, No. 70

\*Deficiency Diseases. E. Weill and G. Mouriquand.—p. 715.

\*Latent Otitis in the New-Born. P. Chatin.—p. 727.

**Prevention and Cure of Deficiency Diseases from Qualitatively Deficient Food.**—Weill and Mouriquand believe that the laboratory results cannot be applied in nutrition in spite of their mathematical aspect, unless "filtered" by clinical experience, which is the only measure of their practical value. The vitamins are not the only substances lack of which may cause disease by qualitative deficiency of food. They discuss beriberi, scurvy, xerophthalmia and pellagra as the four certain examples of such diseases. Beriberi is not without practical interest since the authors proved that it may be provoked in pigeons by any cereals, beans or peas, sterilized or deprived of the outer layer. Together with Michel they showed that a similar syndrome may occur in cats fed on sterilized meat. Beriberi can be prevented by other substances, not only by the hulls of rice. While beriberi seems certainly to be an avitaminosis, no such thing is proved for scurvy, another typical disease of this group. At least no antiscorbutic vitamin has yet been isolated. While beriberi occurs in an infant nourished by a mother suffering from the disease, scurvy is not transmitted by nursing. Oranges, lemons, fresh tomatoes prevent scurvy. They do not consider pellagra a simple avitaminosis, but rather a disease due to multiple deficiencies. The lack of certain amino-acids seems to play a part. The conditions which precede these diseases are of more importance than the stage of full development. Variety in food is not sufficient; it must be well selected. The authors have shown that a mixture of different decorticated cereals causes beriberi just as certainly as any one of them alone.

**Frequency and Severity of Latent Otitis in Nurslings.**—Chatin surveys the frequency of otitis media in necropsies on nurslings. It varies from 75 to 100 per cent. He publishes the history of nineteen nurslings who died from different diseases (bronchopneumonia, enteritis, athrepsia, etc.). In sixteen cases pus was found in the middle ear (thirteen times on both sides). Two had mucopus, and only one child, 1 day old, had a healthy middle ear. Pneumococci, staphylococci and other organisms were found in the fluid. He believes that otitis aggravates the condition of the infants, and may cause meningism indirectly. The tympanic membrane does not always present changes in these cases. Paracentesis may be valuable.

# Journal d'Urologie, Paris

October, 1922, 14, No. 4

\*Epithelioma of the Bladder. C. Lenormant.—p. 273.

\*Pleural Metastasis of Kidney Cancer. C. Roubier.—p. 285.

\*Pyocyanus Urethritis. A. Grimberg and M. Uzan.—p. 289.

\*Some Minor Points in Treatment of Gonorrhea. J. Janet.—p. 291.

\*Transactions of French Urologic Congress.—pp. 293-341.

**Mixed Tumor of Bladder.**—The epithelioma growing from the bladder of a woman of 55 weighed 570 gm. Its base was in the wall of the bladder, and the top of the bladder had to be resected with the tumor. The operation was concluded with suprapubic cystostomy. In a little more than a month the bladder was functioning approximately normally, and the woman has been in good health since, with clinically normal micturition. There never had been any symptoms calling attention to the bladder; the disturbances had been entirely from the pressure on the genital organs, principally, recurring metrorrhagia. It did not return after the operation. The tumors of this type seem to be more benign than tumors of the bladder proper; some aberrant embryonal tissue seems responsible for them.

**Kidney Cancer in Young Pregnant Woman.**—The malignant disease in the kidney and the multiple involvement of glands and huge metastatic tumor in the left pleura ran their entire course from the first symptoms to death in three months. The pregnancy became spontaneously interrupted at the sixth month, and the woman died three days later.

**Pyocyanus Urethritis.**—Grimberg and Uzan banished the gonococcus by injection of large amounts of a stock anti-gonococcus vaccine. Then they applied an autogenous vaccine to get rid of the other micro-organisms involved in the urethritis. In the young man whose case is described, this included the pyocyanus as well as the staphylococcus. This dual vaccine therapy cured him completely.

**Treatment of Gonorrhea.**—Janet discusses how to reenforce treatment when the ordinary measures are not promptly effectual. The strength of the permanganate solution can be increased from 0.25 per 1,000 to 0.3 or 0.4, and for the anterior urethra even to 0.5 or 0.75. Or some other drug might be used instead of the permanganate. He prefers for this mercury oxycyanid, using it in progressive doses, from 0.15 to 0.5 per 1,000.

**Diverticula of the Bladder.**—This was the subject appointed for discussion at the Urologic Congress, the transactions of which are given in full.

# Paris Médical

Nov. 25, 1922, 12, No. 47

\*Roentgen Ray Epithelioma Cured by Diathermy. H. Bordier.—p. 469.

Piece of Glass in the Knee Joint. J. Madiet.—p. 471.

\*Vaccine Therapy and Mixed Infections. A. Grimberg.—p. 474.

\*Dystrophic Syndrome. C. Papastratigakis (Athens).—p. 475.

Senile Tuberculosis and Fixation of Complement. P. Gros.—p. 476.

\*The Cerebrospinal Fluid During Herpes Zoster. R. Targowla.—p. 480.

**Roentgen-Ray Epithelioma of Fingers Cured by Diathermy.**—Bordier reports the favorable result of this method used by himself on himself.

**Vaccine Therapy and Mixed Infections.**—Grimberg points out that many infections are combined. In the preparation of vaccines, all the organisms should be included in equal amounts.

**Dystrophic Syndrome.**—Papastratigakis describes a man aged 22 with total alopecia, cataract of the right eye, and trophic lesions of the finger nails. He regards it as a new dystrophic syndrome.

**The Cerebrospinal Fluid in Herpes Zoster.**—Targowla confirms the presence of inconstant and slight changes in the cerebrospinal fluid in herpes zoster. They consist in increased pressure, lymphocytosis, and increase in albumin (not in globulins). The benzoin reaction is negative.

# Presse Médicale, Paris

Nov. 25, 1922, 30, No. 94

\*Retention of Nitrogen in the Blood. H. Chabanier et al.—p. 1017.

\*Extraglobular Parasites of Blood. Blanchard and G. Lefrou.—p. 1020.

Treatment of Pulmonary Tuberculosis in the German Tuberculosis Conference. L. Cheinisse.—p. 1021.

**Prognosis in Retention of Blood Nitrogen.**—Chabanier, Lobo-Onell and Marquezy studied the prognosis of cases with chronic retention of nitrogen. Vidal's determination of prognosis according to the amount of urea in the blood gives only average results. Men with more than 0.3 per cent. of urea have survived for more than four years. The renal insufficiency is comparatively constant; the patients usually die from sudden attacks of increased azotemia. The prognosis has to consider the probability of such crises. The occasion may be an infection—even a slight one—intoxication (mercury, anesthetic), or heart failure, especially in hypertension. The increase in azotemia is sometimes due to oliguria, sometimes to a direct alteration of the function of the kidneys (lowering of the maximal concentration). This latter type is more dangerous. Besides this there is some extrarenal factor, which may cause severe trouble in patients with 0.2 per cent. of nitrogen in the blood, while others live with 0.5 per cent.

**Extraglobular Parasites of Blood.**—Blanchard and Lefrou recommend Bruce and Nabarro's method, modified by Martin, Lebœuf and Roubaud: 1 c.c. of sterilized 20 per cent. solu-



tion of sodium citrate and 10 c.c. of blood are mixed and centrifugated for ten minutes at 1,500 turns per minute. The plasma is taken off and centrifugated for the second time. In this second sediment most of the filarias can be found. The third sediment contains trypanosomes and spirochetes.

Nov. 29, 1922, 30, No. 95

\*Edema in Laennec's Cirrhosis. A. Lemierre and J. Lévesque.—p. 1029.

**Edema in Laennec's Cirrhosis.**—Lemierre and Lévesque describe a case of atrophic cirrhosis of the liver with ascites and severe edema. On a salt-free diet the edema gradually disappeared after repeated tapping of the ascites. The weight remained stationary between the punctures so that it is apparent that the fluid from the anasarca was used to reproduce the ascites. Salt-free diet has a very good influence in edema but not on the ascites. The ascites recurs and takes the necessary salt from the blood. The patients become depressed and lose appetite if the treatment is continued. The authors discuss the possible causes of edema in atrophic cirrhosis, and emphasize the bad prognostic significance.

### Progrès Médical, Paris

Dec. 2, 1922, 37, No. 48

Case of Late Infantilism. A. Philibert.—p. 561.

\*The Liver in Chronic Infections of Children. Lereboullet.—p. 564.

Case of Syphilis of the Liver. L. Giroux and G. Lory.—p. 568.

**The Liver in Chronic Infections of Children, Especially in Syphilis and Tuberculosis.**—Lereboullet reviews extensively the liver changes in syphilis and tuberculosis. Other chronic infections, except malaria, are of no importance for the liver.

### Archivio Italiano di Chirurgia, Bologna

October, 1922, 6, No. 1

\*Scleroma of Larynx and Trachea. G. Forni.—p. 1.

\*Accidental Surgical Injury of Colic Arteries. G. B. Macaggi.—p. 28.

\*Purulent Pleurisy. O. Cignozzi.—p. 39.

\*Symmetrical Lipomatosis of the Neck. M. Bufalini.—p. 73.

Case of Papilloma Cancer of the Bladder. N. Giannettasio.—p. 96.

**Scleroma of the Larynx and Trachea.**—Forni reports three cases in which scleroma began to induce symptoms at the age of 27, 28 and 20. The gradual onset of the difficulty in breathing aids in differentiation. Operations to remove the hardened patches do not cure permanently as the tendency persists. In his cases the two men of 28 and 61 and the woman of 27 had had tracheotomy and laryngofissure repeated twice and the patches scraped out, but they kept forming again. The man of 28 had worn a tracheal tube for several years but was able finally to discard it. Return of the suffocation compelled an emergency low tracheotomy, but the operation showed the walls of the trachea much thickened, and the man succumbed to dyspnea and cyanosis. The others are still living and both have derived great benefit from postoperative roentgen treatment.

**Surgical Injury of Arteries of the Colon.**—Macaggi's experiments on ten dogs have demonstrated that surgical injury of the arc of anastomosis between the middle and the left colic artery does no harm. If the trunk of the middle colic artery or of the homonymous artery is cut, or both at once, a hemorrhagic infarct may follow, but the consequences are never severe enough to compromise the nourishment of the colon, and the parts rapidly recuperate. Hence at operations involving the mesocolon, especially posterior retrocolic gastro-enterostomy, accidental injury of these vessels need not be regarded as of grave import.

**Operative Treatment of Purulent Pleurisy.**—Cignozzi analyzes his experiences with 100 cases. He always operated without local or general anesthesia; only to a few adults he gave an injection of morphin an hour beforehand. He thinks that his experience confirms the superior advantages of an incision in the back, 9 or 10 cm. long, the center on an extension of the angle of the scapula; resection of not more than 5 cm. of the eighth rib; incising the pleura for 2 or 3 cm.; placing the patient horizontal as rapidly as possible, reclining on the side of the operation. He has the patient sit on the edge of the table, the sound side supported slightly slanting by the raised end of the table. The arm on the empyema side is placed on the vertex of the head, and over the ear of the other side. This spreads the inter-

spaces and throws into relief the angle of the scapula. The immediate introduction of a gauze plug as the pleura is incised allows only small amounts of fluid to escape as it drains out under the influence of gravity. In the 20 fatal cases the suppuration had been under way for from thirty-one to sixty-five days; the deaths occurred between the sixth and tenth day after operation. The article is illustrated.

The capillary drainage at first is superseded by tube drainage after the first two days.

The general toxic condition is combated with subcutaneous injection of horse serum from horses previously treated with nucleoproteins. He injects 100 c.c. of the horse serum in 250 or 300 c.c. of physiologic solution, with 30 drops of epinephrin solution, repeating this daily for three to five days. The complete cure without deformity of the chest, the full expansion of the lung in about three weeks, and the regeneration of the rib, as the periosteum is left entire, insure prompt healing without deformity.

**Symmetrical Lipomatosis of the Neck.**—Bufalini did not find any spirochetes in the symmetrical lipomas removed from the neck of the syphilitic man of 57. The microscope indicated a chronic inflammatory process involving lymph glands and aponeurosis, probably of syphilitic origin.

### Pediatria, Naples

Dec. 1, 1922, 30, No. 23

\*Vaccine Treatment of Typhoid. G. Sillitti.—p. 1099.

\*Reflexes in the New-Born. F. de Angelis.—p. 1107.

\*Varicella Following Herpes. A. Gismondi.—p. 1114.

Pathology of Bones. A. F. Canelli and G. B. Audo-Gianotti.—p. 1126.

**Anaphylaxis and Antianaphylaxis in Typhoid Patients Treated with Vaccines.**—Sillitti publishes seven cases of infants with typhoid fever treated with vaccines. The reaction seems to be of anaphylactic nature, and in subsequent injections one can sometimes observe even a state of anti-anaphylaxis.

**Reflexes in the New-Born.**—De Angelis examined the reflexes in eighty-eight healthy infants in the first week of life. He found that all the reflexes are usually present, although the pupil reflexes may be sluggish, and the plantar in 43 per cent. inverted. Yet it is very difficult to determine the quality of the plantar reflex because of spontaneous movements.

**Varicella Following Herpes.**—Gismondi reports varicella in an infant occurring fourteen days after an attack of herpes zoster in the child's aunt. No other case of varicella was in the surroundings at the time. Gismondi reviews the literature on the question of the etiologic relation between the two diseases.

### Policlinico, Rome

Dec. 4, 1922, 29, No. 49

\*Copper Sulphate Reaction in Cerebrospinal Fluid. A. Medi.—p. 1589.

\*Thoracocentesis and Pneumothorax. F. Rossi.—p. 1592.

**Copper Sulphate Reaction in Cerebrospinal Fluid.**—Medi finds the reduction test with cerebrospinal fluid very valuable. To 2 c.c. of cerebrospinal fluid 3 drops of each of the two solutions of Fehling are added. Purulent meningitis gives a slight or no reduction. He observed that purulent meningitis fluids give an amethyst color before boiling, owing to the presence of peptones. Tuberculous meningitis gives a less distinct color, but causes reduction. Tumors, hydrocephalus and serous meningitis give a blue color, and reduce strongly.

**Thoracocentesis and Pneumothorax.**—Rossi describes a new apparatus for thoracocentesis followed by artificial pneumothorax.

Dec. 1, 1922, 29, Medical Section No. 12

\*Hereditary Ataxia. P. Mino.—p. 615.

\*Sthenic Function and Myasthenia Gravis. Calligaris.—p. 662.

**Hereditary Ataxia.**—Mino publishes one case and reviews extensively the literature on the etiology of the disease. Exogenous factors are unimportant. Hereditary ataxia seems to be a genetic complex, inherited as a recessive character.

**The Sthenic Function and Pseudoparalytic Myasthenia Gravis.**—Calligaris emphasizes the sthenic, as well as tonic, function of the extrapyramidal motor apparatus.



# Riforma Medica, Naples

Nov. 27, 1922, 38, No. 48

\*Implantation of Nerves in Suprarenal Capsules. D. Maragliano.—p. 1133.

\*Determination of Bilirubin in Blood. A. de Martini.—p. 1136.

\*Spontaneous Separation of Dermoid Cyst. L. Fioravanti.—p. 1137.

Treatment of Carbuncle by Extirpation. D. Taddei.—p. 1139.

**Implantation of Nerves in Suprarenal Capsules.**—Since free transplants of suprarenal capsules are absorbed in a few weeks, Maragliano tried to prevent it by implantation of splanchnic or spinal nerves into the organs. Yet the nerves did not proliferate, if he left the capsules in place, nor if he transplanted them with the nerve. The absorption of the transplanted capsule was not prevented by this proceeding.

**Method of Determination of Bilirubin in Blood.**—Martini's modification of Hijman van den Bergh's method consists in the acidification with acetic acid and the use of a mixture of eosin and methylene blue as the standard.

**Spontaneous Separation of a Dermoid Cyst from the Ovary.**—Fioravanti describes a case of ovarian dermoid which separated spontaneously from its peduncle, and continued to grow in the omentum.

Dec. 4, 1922, 38, No. 49

\*Lipoma of the Mammary Region. L. Torraca.—p. 1157.

\*Action of Roentgen Rays on Tuberculosis. E. Musante.—p. 1160.

\*Williams' Symptom in Tuberculosis. C. Guarini.—p. 1162.

Anomalies of Articulation of Teeth. B. de Vecchis.—p. 1163.

**Lipoma of the Mammary Region.**—Torraca describes a rare case of a large lipoma situated in the deep mammary region (subpectoral) in a man.

**Action of Roentgen Rays on Tuberculosis.**—Musante irradiated with small doses of roentgen rays the apices of the lungs and the spleen, or the spleen alone, in tuberculous patients. He found especially an increase in complement and agglutinins lasting for twenty-four hours.

**Significance of Williams' Symptom in Early Roentgenologic Diagnosis of Pulmonary Tuberculosis.**—Guarini is skeptical about the value of Williams' diaphragm phenomenon.

# Archivos Españoles de Pediatría, Madrid

October, 1922, 6, No. 10

\*Hypospadias and Epispadias. I. Sánchez-Covisa.—p. 577.

Dietetic Treatment of Gastro-Intestinal Derangement in Infants. J. Bravo Frias.—p. 614.

**Treatment of Hypospadias and Epispadias.**—Sánchez-Covisa reviews the various methods for correction of congenital deformity of the urethra as he has applied them and analyzes the advantages and the drawbacks of different technics. He bases the indications for operating on the size of the organ, rather than age, but always before puberty, when possible. He reports two cases in adults in which the results of the Duplay-Marion technic were perfect, both as to aspect and function, although a long segment of the urethra had to be reconstructed. Thirty-seven illustrations accompany the article. He disapproves of any attempt to operate for minor deformities, which do not alter the genital or urinary functions, unless the patient or the family insist. He found the Hamilton-Roussel operation delicate and difficult. Young's method of treating epispadias is superior to all others, he says, both theoretically and in the simplicity of the technic and the rapid healing. He has applied it in two cases, both adults, with absolute incontinence of urine. In future he will supplement it with Young's latest autoplasmic procedure to remove the last trace of the tendency to incontinence. He has encountered at Madrid 55 cases of hypospadias among 6,500 urologic cases, but scarcely a dozen instances of epispadias.

# Archivos Latino-Amer. de Pediatría, Buenos Aires

October, 1922, 16, No. 10

\*Artificially Fed Infants. L. Morquio.—p. 609. Conc'n.

\*Malaria in Infant. M. H. Bortagaray.—p. 640.

Diverticulum Binding Down Infant's Intestine. M. Valabrega.—p. 646.

Banti's Disease in Child. S. Satanowsky.—p. 654.

\*Gangrene of Lung in Young Child. F. Rodríguez Gómez.—p. 658.

\*Sarcoma of Omentum in Girl of Ten. A. Segers.—p. 662.

\*Aortic Insufficiency of Rheumatic Origin. E. Portu Pereyra.—p. 667.

\*Age as Affecting Measles. A. Olarans Chans.—p. 670.

# Digestive Disturbances in Artificially Fed Infants.

Morquio emphasizes the four classes of disturbances to which the artificially fed are liable, the dyspeptic, the toxic-infectious, the trophic and the parenteral. We have to bear in mind also congenital and acquired taints and various etiologic causes which differ according to locality, customs and individuals. The great lesson he draws from his extensive data is that treatment of digestive derangement—aside from breast feeding—has to be strictly individual. The tolerance for food, even when more or less complete, is above all influenced by the one factor, the season. There is no pathology of alimentary origin during the winter, with rare exceptions. Breast milk in lung and bronchial affections is not only the best food but the best medicine for the infant. He warns against treating the digestive disturbances which accompany otitis, pneumonia, measles and other parenteral affections. The green stools may mislead the physician to restrict the child to a water diet and purge it. But this, he declares, is wrong; the parenteral affection is what must be sought and treated, and the child should not be taken from the breast. The gastro-intestinal indications are entirely subordinate.

**Malaria in Four Months' Infant.**—The mother had chronic malaria. The child seemed healthy during the first week of life but then developed extremely grave malaria. This subsided promptly under quinin, given by the rectum for two days, and then by the mouth.

**Gangrene of Lung in Child.**—Subsequent to Vincent's angina in the girl, aged 2½, both purulent pleurisy and pulmonary gangrene developed, fatal in about six weeks from the first symptoms. The spirilla and fusiform bacilli were cultivated from the effusion in the pleura.

**Sarcoma of Omentum.**—The onset of the fibrosarcoma was febrile in the girl of 10 years, and the diagnosis was "typhoid fever with enlarged spleen," until the child reached the hospital on the twenty-first day. The tumor could be palpated through the rectum, and was safely removed two months after the first symptoms. The child soon gained 9 kg. in weight.

**Prognosis of Measles.**—The great importance of age in the prognosis of measles and the advantages of delaying it as much as possible are emphasized. Convalescents' serum provides a means for sparing at least the younger children.

# Brazil-Medico, Rio de Janeiro

Sept. 16, 1922, 2, No. 37

\*Century of Progress. Afranio Peixoto.—p. 155.

**A Century of Progress in Public Health Matters.**—In this centennial address, Peixoto reviewed the medical history of Brazil. The death rate now in many Brazilian cities is lower than in certain cities in western Europe. Bahia (22.24) is lower than Dublin (24.95); Rio de Janeiro (19.62) than Nice (19.65); Florianopolis and Curitiba have a death rate below 16. He describes the history of various diseases in Brazil: cholera with its 200,000 victims in 1867; plague introduced in 1899; yellow fever known in Brazil since 1685 but absent from Rio since 1908. He says that progress requires the education of the public, the inculcation of hygiene, the wearing of shoes, sanitary provisions, etc. "Of what avail is the work of the Rockefeller Commission, of the sanitary authorities, the system of 'rural prophylaxis,' etc., in administration of chenopodium, thymol or naphthol, to those infested with parasites, so long as there are no provisions for hygiene. Reinfestation is inevitable, and begins the very day the cure is complete. It is like carrying water in a basket."

# Revista Española de Medicina y Cirugía, Barcelona

September, 1922, 5, No. 51

\*Reconstruction of the Beard Region. J. F. S. Esser.—p. 499.

\*Conduction of Electric Current in Diathermy. L. Cirera Salse.—p. 504.

Interpretation of Urine Findings. Vellvé Cusidó.—p. 509.

**Autoplastics of Bearded Region.**—Esser's illustrations show his method of twisting around a flap from the scalp to use in reconstruction of the chin and cheek.



**Mechanism of Diathermia.**—Cirera Salse discusses the conductivity of the human body for the high frequency current, as affecting diathermia.

October, 1922, 5, No. 52

Typhoid Fever in Barcelona. A. Salvat Navarro and F. Proubasta.—p. 563.

\*Prostatectomy. M. Serés.—p. 577.

Therapeutic Dietetics. A. Arteaga Pereira.—p. 593. Cont'n.

**Transvesical Prostatectomy.**—Serés reviews the indications, technic and results of transvesical prostatectomy as he has applied it in 170 cases.

### Semana Médica, Buenos Aires

Oct. 26, 1922, 2, No. 43

\*Hydatid Cyst of the Liver. M. R. Castex.—p. 837.

Serologic Tests in Hydatid Cysts. Fernández Ithurrat.—p. 857.

\*Biologic Reactions in Hydatid Cysts. Fernández Ithurrat and B. N. Calcagno.—p. 864.

\*Suprarenal Insufficiency. Washington Alvarez.—p. 869.

\*Prophylaxis of Scarlet Fever. A. B. Ribeyrolles.—p. 872.

Radiography of Gallstones. Carlos Heuser.—p. 875.

Retention of Placenta from Continuous Spasm. A. Borton.—p. 876.

Symptomatology of Respiratory Apparatus. A. Viton.—p. 879.

Reformatories for Inebriates. V. Delfino.—p. 882.

**Hydatid Cysts of the Liver.**—This was the official address opening the discussion on echinococcus disease at the recent national medical congress at Buenos Aires.

**Biologic Reactions in Echinococcus Disease.**—From the extensive experiences related it is evident that the diagnosis can be based with confidence on the Imaz-Lorentz sero-reaction, supplemented by examination of the blood for eosinophilia, and the intradermal hydatid reaction. It is instructive further to repeat the seroreaction with unheated serum. To interpret the findings better, the hemolytic index of the blood should be recorded.

**Suprarenal Insufficiency.**—Washington Alvarez relates that two girls, 10 and 12 years old, presented intense pure suprarenal insufficiency. One was convalescing from typhoid, and the agonizing pains suggested perforation of a viscus. Under 4 drops of epinephrin solution, three times a day for six days, all the symptoms promptly subsided. In the other case, the child had both malaria and typhoid, but she recovered under epinephrin kept up for nine days. A third patient was a man of 50 with chronic malaria and signs of suprarenal insufficiency. He improved under epinephrin and quinin, but the periods of weakness, hypertension and other signs of suprarenal deficit have returned at times during the year since. The necropsy findings are described further in an infant, aged 6 months, who had succumbed to acute chloroform intoxication. Both suprarenals showed extensive hemorrhages.

**Seroprophylaxis of Measles and Scarlet Fever.**—Ribeyrolles is a navy medical officer. He reports favorable experiences with the Milne method in warding off contagion, and also with passive serotherapy by injection of convalescent serum, in persons who had been exposed to these diseases. He declares that as the serum is homologous, there are no contraindications to its use. The persons thus immunized never displayed any tendency to serum sickness or anaphylaxis.

### Siglo Médico, Madrid

Oct. 28, 1922, 70, No. 3594

\*Death of Child from Tetanus. Martínez Vargas.—p. 413.

Etiology of Puerperal Endometritis. L. G. Gret.—p. 415.

Fibroma of Lobule of Ear. C. Jiménez López et al.—p. 420.

Tetanus from Slight Scratches. F. Sánchez Grangel.—p. 421.

**Death of Child from Tetanus.**—Martínez Vargas does not hesitate to declare that the cabinet minister in Spain who cut off the appropriation this year, compelling the abandonment of the bureau of standardization of serums, vaccines and pharmaceuticals, is responsible for the death of the child whose case he reports. It is the first case of tetanus in his service in fifteen years, and the first death. He gave the usual preventive course of tetanus antiserum after the accident. Its complete failure can be explained only, he says, by the poor quality of the antiserum. Something similar occurred several years ago, when the diphtheria death rate rose as a result of defective preparation of the antitoxin.

### Archiv für Verdauungs-Krankheiten, Berlin

October, 1922, 30, No. 3-4

\*Gastroscopy. R. Schindler.—p. 133.

Potato Test Meal. E. Gabbe.—p. 167.

Treatment of Peptic Ulcers with Deformity of Stomach. M. Einhorn.—p. 175.

\*Antipepsin in Stomach Contents. L. Jarno.—p. 191.

Functional Test of Sugar Metabolism. Offenbacher and Hahn.—p. 203.

Insufflation of Intestine Through Stomach for Roentgen-Ray Diagnosis. Fuld and O. Weski.—p. 207.

\*Amebic Dysentery. I. Hansen.—p. 209.

Technic for Prevention of Vicious Circle. F. Ehrlich.—p. 219.

Comment on "Quantitative Determination of Pepsin." O. Gross.—p. 227.

Reply. L. Jarno.—p. 229.

**Gastroscopy.**—Schindler reviews critically the different gastroscopes, and describes his own. He mentions a case in which a physician introduced the instrument by mistake into the larynx and right bronchus, and perforated the lung.

**Antipepsin in Gastric Juice.**—Jarno believes that the antipeptic action of the gastric juice is due to sodium taurocholate, glycocholate and other substances, regurgitated into the stomach. All of them are capable of inhibiting the digestion of solid proteins, which explains the indigestibility of hard boiled eggs.

**Amebic Dysentery.**—Hansen reports four cases of amebic dysentery treated successfully with emetin.

**Constriction with Strip of Fascia of Afferent Leg Between Gastro-Enterostomy and Entero-Anastomosis.**—Ehrlich reports eleven cases influenced favorably by this method, but avows that he is opposed to any operative treatment as long as the patient is able to work, and without great discomfort.

### Deutsche medizinische Wochenschrift, Berlin

Dec. 1, 1922, 48, No. 48

\*Diet in Kidney Disease. H. Strauss.—p. 1603.

Symptoms Remaining After Appendectomy. L. Kuttner.—p. 1604.

\*Physiology and Pathology of Spleen. G. Lepehne.—p. 1606.

Progressive Torticollis After Trauma. W. Schmitt.—p. 1607.

Skin Phenomena in Diseases of the Myeloid System. E. Zurhelle.—p. 1610.

\*Bruck's Serodiagnosis of Syphilis. W. Teichmann.—p. 1612.

\*Bladder Symptoms and Low Position of Right Testicle. Adler.—p. 1612.

Expectorants. G. Joachimoglu.—p. 1613.

\*Treatment of Tuberculosis with Camphor. B. Alexander.—p. 1614.

\*Dosage of Codein in Children. W. Salomon.—p. 1614.

Band for Venous Stasis. C. O. Leege and W. Schmidt.—p. 1615.

Compulsory Vaccination and the "Conscientious Objector." A. Grot-jahn.—p. 1616. Idem. F. Prinzing.—p. 1618. Idem. Gins.—p. 1619.

**Diet in Kidney Disease.**—Strauss limits his paper to the discussion of treatment of degenerative affections (nephrosis) and of nephrosclerosis. Increased fluid intake is to be recommended only in cases which have a lowered power of concentration. In other cases, especially heart failure and some hydropic forms, restriction of fluids may be indicated. Restriction of proteins is necessary if the functional tests demonstrate a tendency to retain their products. One should not forget that excessive restriction may do harm. Salt has to be restricted in cases with a tendency to edema. The diet can be made agreeable by the use of spices, which are harmless if given in small amounts. Alcohol may be given only exceptionally as a remedy. Bouillon should be replaced by vegetable soups. Milk should be given in amounts which give consideration to its protein content. Cheese may be useful for rendering certain other dishes more palatable. An appetizing crust on meat is a valuable aid in salt-free diet. Well boiled eggs are allowed; sweets and dishes prepared with flour are to be recommended. Butter may be freed from salt by kneading it in water.

**Physiology and Pathology of the Spleen.**—Lepehne reviews the function of the spleen as an organ which serves partly as a "regionary lymphatic gland of the blood" (Helly), partly as an endocrine organ influencing the production of blood cells, and partly in relation to the metabolism of iron and cholesterol. The destructive action on red corpuscles and platelets and the question of production of antibodies are especially discussed.

**Bruck's Centrifuge Method in Serodiagnosis of Syphilis.**—Teichmann reports favorably on Bruck's method of centrifugalizing a mixture of serum and extract in a 10 per cent. solution of sodium sulphate. The suspension of the extract



must always be tested first with a positive and negative serum.

**Nervous Bladder Symptoms and Low Position of Right Testicle.**—Adler found among twenty-two cases with low position of the right testicle only four without enuresis. He sees in the low position of the right testicle (lower tonus of the right cremaster) a sign of functional debility of the lowest part of the spinal cord.

**Treatment of Tuberculosis of Lungs with Camphor.**—Alexander recommends his method of treatment of tuberculosis with injections of camphorated oil. He gives up to 5 c.c. daily, but stops for some days if the patient feels better. Alexander claims that it enables patients to feel better and to work. In early cases camphor is given only in periods of fever or hemoptysis.

**Dosage of Codein in Children.**—Salomon finds that the usual doses of codein for children are so small that they are without any effect. He used in several hundred cases the following doses: In the first half year of life 2 to 3 mg. pro dosi ( $\frac{1}{20}$ – $\frac{1}{30}$  grain); second six months 4 to 6 mg. In the second year from 6 mg. to 1 cg. In the fifth year, about 0.014 gm; in the tenth, 0.02 gm. ( $\frac{1}{3}$  grain). The dose is best given at night, and it is better not to divide it.

### Jahrbuch für Kinderheilkunde, Berlin

October, 1922, 99, No. 6

\*Ulcer of Urethral Orifice. J. v. Bokay.—p. 303.

\*Bacteria in Stools of Infants. J. Zeissler and R. Käckell.—p. 308.

\*Fever in Children. K. Dajceva.—p. 321.

Comment on "Leukolysins." G. Caronia.—p. 327. Reply. Stransky.—p. 336.

\*False Passage in Intubation. C. v. Ujj.—p. 337.

Report on First Munich Congress for Orthogenics. Eliasberg.—p. 343.

**Ulcer of Urethral Orifice.**—Bokay draws attention to this affection of the external urethral orifice of boys aged less than 7 years. Almost all of them had been circumcised and live in poor, very unhygienic surroundings. Incontinence of urine may be one of the etiologic factors. Dysuria is present, but stops after removal of the crust. Silver nitrate and boric acid ointment cure the affection.

**Bacteria in Stools of Infants.**—Zeissler and Käckell consider Gram's method absolutely inadequate for bacteriologic examination of feces. The differentiation between *Bacillus acidophilus*, *bifidus* and other gram-positive bacilli can be made only by special methods of cultivation.

**Fever in Children.**—Dajceva divides feverish children into two types according to the reaction to antipyretics: One group reacts quickly and strongly, no matter whether drugs or baths are used. The other group reacts slowly or not at all. Most of the children belonging to the second group present nervous (meningo-encephalitic) symptoms, which may be based upon either anatomic conditions or only symptomatic. Some of the children in this group are neuropaths; many are rachitic.

**False Passage in Intubation.**—Ujj describes a case of diphtheria in which forcible introduction of the tube resulted in the formation of a false passage. Cricotracheotomy saved the child, though a little time was lost because the diagnosis was not made immediately, and artificial respiration was tried first. An examination for a false passage should always be made if the child shows a tendency to suffocation after intubation.

### Monatsschrift für Kinderheilkunde, Leipzig

October, 1922, 24, No. 1

\*Anemia in Children. H. Lehdorff.—p. 1.

\*Calcium in Blood in Spasmophilia. K. A. Zahn.—p. 45.

\*Blood Picture Changes in Children. E. Nassau and E. Schohl.—p. 51.

Treatment of Whooping Cough. K. Ochsenius.—p. 60.

Comparison of Different Diagnostic Tuberculins. M. Frenzel.—p. 70.

\*Action of Atropin on Stomach of Infants. A. Salomon.—p. 75.

Survey of Dermatology in 1921. C. Leiner.—p. 84.

**Anemia in Children.**—Lehdorff reviews the differences between the blood corpuscles and the reactivity of the hemopoietic organs in children and adults, and gives a survey of the present status of diagnosis and treatment of the diseases of these organs. The main feature in children is the exaggerated reaction to toxic agents. Megaloblasts do not signify

in them a pernicious anemia, but simply a reversion to the embryonic type, which is possible during the first two years. The youngest forms of leukocytes in anemia pseudoleukemica infantum are not a sign of leukemia here. The disease may disappear completely. Predisposition accounts for the fact that we see these reactions only in certain infants. The anemia of premature births is of two types: One is almost physiologic and lasts for three months, irrespective of the treatment. The other type is not fully explained, and may be due to some action of the fats of the milk or lack of vitamins. One should not forget the possibility of endogenous factors and of infection. This type of anemia is usually cured by a diet almost free from milk and containing plenty of vegetables.

**Calcium in Blood in Spasmophilia.**—Zahn examined the blood of three children with tetany, fifteen with a positive facialis phenomenon, and eight with other diseases. Only one case of tetany showed a lowered concentration of calcium ions by Trendelenburg and Goebel's method, although all three had very low total calcium content. In latent spasmophilia some cases had a low calcium content, but others were normal.

**Blood Picture Changes in Children.**—Nassau and Schohl find that in fever of long duration a normal blood picture speaks for chronic pharyngitis and against tuberculosis of glands. The latter brings younger forms of neutrophils into the circulation. "Umbilical colic" does not change the proportion between the younger and older forms of neutrophils, while appendicitis does change it. Yet, confusion with other diseases, for instance pleuritis, is possible.

**Action of Atropin on Stomach of Infants.**—Salomon found that atropin lowers the tonus of the stomach in infants, and slows the peristalsis. It does not alter the secretion of acid, nor act on the pylorus. He explains the favorable results of large doses of atropin in the treatment of pylorospasm by its action on the musculature of the whole stomach. While a normal infant shows a reddening of the scalp after one to two drops of a 0.1 per cent. solution of atropin sulphate, when it is indicated (vagotonia), the infants may tolerate much larger quantities—up to 6 drops, six or eight times daily. Atropin very often gives excellent results in the habitual vomiting of infants.

### Münchener medizinische Wochenschrift, Munich

Nov. 17, 1922, 69, No. 46

\*Perlingual Administration of Drugs. F. Mendel.—p. 1593.

Comment on Engel's "Blood in Lead Poisoning." G. Seiffert.—p. 1595.

\*Prophylaxis of Roentgen Ray Injuries. G. Holzknacht.—p. 1597.

Spasm of Vessels During Delivery. H. Hinselmann.—p. 1598.

Staining of Spirochetes with Silver and Neosalvarsan. W. Krantz.—p. 1598.

Dold's Turbidity Reaction in Syphilis. K. H. Kiefer.—p. 1600.

\*Thyroid Treatment for Uterine Hemorrhage. R. Kräuter.—p. 1601.

Murder by Quickly Repeated Introduction of Arsenic; Death in Fifty

Hours from First Dose. Goroney.—p. 1606.

Case of Embryotomy in Unrecognized Transverse Presentation. Dur-

lacher.—p. 1607.

\*History of Influenza and Encephalitis. J. E. Kaiser-Petersen.—p. 1608.

Indications for Surgical Treatment of Ulcer of Stomach. A. Krecke.

—p. 1609.

**Perlingual Administration of Drugs.**—Mendel points out that many drugs, especially lipoid-soluble drugs, are easily resorbed from the surface of the tongue. This is of therapeutic significance. The action of nitroglycerin, if it is swallowed, is uncertain. One drop of a 1 per cent. alcoholic solution of it smeared over the tongue acts quickly. No habit formed, taken thus, and the drug keeps its influence. Atropin sulphate applied in a similar way acts as if it had been given by injection, as well as strychnin nitrate, other alkaloids, and narcotics in an alcoholic solution. Two drops of a 1 per cent. solution of strophanthin smeared over the tongue with the finger acted in fifteen to thirty minutes. It was not possible, however, to disguise the taste of it.

**Prophylaxis of Roentgen-Ray Injuries.**—Holzknacht discusses the reasons for the increasing frequency of injuries by roentgen rays. The acute necrotic ray ulcer is usually due to forgetting to insert the filter. He recommends the use of automatic devices that will shut off the current if the filter is forgotten. The constant potency of the tubes is



not so perfect as the manufacturing plants pretend. Of all the regulators, only the one which controls the primary current seems to be good. Therefore it is necessary to measure not only the time of exposure, but to apply a dosimeter besides, if one wishes to avoid an overdose. The serious local injuries to the bowel, larynx, brain and other organs happen in strong irradiations of several fields, with errors in computing the homogeneity in the depths. As yet, we can avoid them only by giving lower doses. The late necrosis is due to the tendency to shorten the intervals between the applications. A full cutaneous dose needs in the average eight weeks of rest. If a cosmetic effect is to be considered, this interval should be doubled. In urgent cases (cancer), the pause may be reduced to one half. The severe general reactions are justified only when we can expect a good result. They increase the cachexia of hopeless cases. The results of modern intensive treatment are far from being as good as some roentgenologists promise. "Not one case of certain cancer has been cured." Holzknecht does not believe in the irritating action of smaller doses and recommends therefore with the exception of some cancers of the uterus, to divide the irradiation and not to give the highest possible doses. The giving of two thirds or one half of it is beneficial, although the results are not ideal, and the patients do not suffer from the general injury.

**Thyroid and Bleeding from Uterus.**—Kräuter finds that some cases of menorrhagia and metrorrhagia which present signs of a lowered function of the thyroid can be influenced favorably by thyroid gland treatment.

**History of Influenza and Epidemic Encephalitis.**—Kaiser-Petersen shows that in eight epidemics of influenza occurring between the years 1580 and 1833 there were always cases presenting symptoms of lethargic encephalitis.

### Zentralblatt für Gynäkologie, Leipzig

Dec. 2, 1922, 46, No. 48

Significance of Cells Within Zona Pellucida. H. Hinselmann.—p. 1906.  
A Peculiar Case of Postoperative Hemorrhage. A. Sippel.—p. 1909.  
Subcutaneous Emphysema in Parturients. K. Riediger.—p. 1910.  
Statistics on Febrile Abortion. H. A. Dietrich.—p. 1912.  
Eclampsia Statistics of Baden for Year 1920. Gessner.—p. 1914.  
\*Radium in Treatment of Uterine Affections. H. Schaedel.—p. 1918.

**Radium in the Treatment of Benign Uterine Affections.**—Schaedel discusses the technic employed and the results secured by the use of radium in the treatment of 500 cases of benign uterine affections. The os uteri is widened by means of laminaria tents. For diagnostic reasons, a curettage is done, and the radium preparation is then introduced within the body of the uterus by means of forceps. Iodoform gauze is inserted within the cervix to prevent the radium from slipping out, but a free passage for the uterine secretions must be left. The vagina itself is plugged with tampons. The intervention takes place under ethyl chlorid anesthesia and requires only two minutes at the most. The radium is left in place from thirty-six to forty-eight hours. The radium preparation was employed up to thirty-eight hours in all hemorrhages of the climacteric, provided there had been no recent inflammation of the adnexa. Radium was used, up to forty-eight hours, in myomas that were not larger than a good-sized fist, ninety-eight being thus treated. Radium was employed also in hemorrhages that occurred as the result of disturbances of internal secretion. During the application of the radium, 62 per cent. of the patients complained of slight nausea, loss of appetite and a mild headache; in 18 per cent. sedatives were administered. In one patient the radium had to be removed after eight hours because of severe vomiting, restlessness and diarrhea. The other patients had no bad symptoms. In all, the symptoms disappeared promptly after removal of the radium. In 60 per cent. of the patients the menses were completely arrested; 18 per cent. had one period, somewhat weaker than usual, and 22 per cent. had a second menstruation, the longest duration of which was three days. The radium does not affect the graafian follicles but only the uterine mucosa. Amenorrhea never alternated with oligomenorrhea or polymenorrhea, as occurs after roentgen irradiation. The after-effects were also more favorable in the case of radium.

### Zentralblatt für innere Medizin, Leipzig

Dec. 2, 1922, 43, No. 48

\*Duodenal Contents in Pancreas Diagnosis. L. R. Grote.—p. 777.

**Diagnosis of Pancreas Function from Duodenal Contents.**—Grote made comparative studies on twenty-five cases, with the duodenal fluid obtained after application of 2 to 4 c.c. of ether through the tube, and examination of feces after a test meal. The results were in many cases contradictory. First of all, the estimation of ferments (trypsin and diastase) in the duodenal contents gives such widely different results, even in healthy persons, that no normal value can be stated. Ether induced a good secretion, but Grote points out that this is no proof that the gland can always produce a sufficient amount of fluid, especially on physiologic stimulation. Cases which showed poor digestion of meat in the feces had sometimes very good ferments in the duodenal contents. Yet he admits that cases with a pancreatic lesion had little juice before ether was applied. There was also in some cases an interesting dissociation between diastase and trypsin (much diastase and little trypsin), although this diastase may originate in the saliva. The methods of pancreas diagnosis by the duodenal juice have too many sources of error. The differences in the juices taken from different parts of the duodenum are great, and the action of ferments depends very much on the hydrogen ion concentration and the presence of products of digestion. It is not possible to analyze satisfactorily the single factors. Clinically, we need to know the function of the bowels as a whole. This problem is solved in an ideal way by the test meal and subsequent examination of the stool. The determination of ferments in the duodenal juice cannot replace it.

### Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Nov. 11, 1922, 2, No. 20

\*Brain Disease with Eye Symptoms. F. S. Stibbe.—p. 2142.  
\*The Connective Tissue. II. G. C. Heringa.—p. 2148.  
\*Movements of the Uterus. I. A. Wijsenbeek and A. Grevenstuk.—p. 2155.  
\*Radiotherapy of Rectal Cancer. G. F. Gaarenstroom.—p. 2165.  
\*Gnawing of Fingers. I. Bak.—p. 2170.  
Vaccine Therapy of Whooping Cough. L. K. Wolff.—p. 2174.

**Localization of Brain Disease from the Ocular Symptoms.**—Stibbe theorizes to show that a gumma in the right peduncle would explain the paresis of the sphincter of the right pupil, associated with left hemiparesis—the syndrome in the first case he describes. In the second, softening from syphilitic endarteritis in the posterior cerebral artery would explain the homonymous hemianopsia without atrophy of the optic nerve.

**The Connective Tissue.**—Heringa presents evidence which upsets some of the present views as to the structure and significance of the connective tissue.

**Movements of the Uterus.**—Research on rabbits with a window in the abdomen has shown that the regular movements of the normal uterus are much reduced during the first half of gestation. They become progressively more marked in the second half.

**Radium and Roentgen-Ray Therapy of Cancer of the Rectum.**—Gaarenstroom reports two cases of cancer of the rectum, in a woman aged 53 and a man aged 29. Both cancers were inoperable when first seen, but after an artificial anus was made, under radium combined with roentgen-ray treatment the malignant disease subsided to such an extent that the earning capacity was regained, and they have been free from disturbances now for five and six years. The radium therapy had been vigorous, up to 4,000 and 3,300 milligram elements, and the patients had displayed exceptional fortitude and perseverance in completing the full course.

**Febrile Autophagia.**—In Bak's case the Java coolie died in coma after an acute febrile disease with somnolence and motor disturbances. In the course of the disease he ate the soft parts entirely from the terminal phalanx of some of the fingers. Instead of the anticipated findings of epidemic encephalitis, nothing pathologic could be found anywhere at necropsy. Bak records the case merely as a disease the chief characteristic of which was autophagia.



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## THE RESPONSE TO THE THERAPEUTIC APPLICATION OF EXTERNAL HEAT\*

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PHILADELPHIA

In a recent contribution there were reported the results of studies on the blood gases and the blood flow in arthritis, and on the nature of the response to external heat.<sup>1</sup> The present contribution reports a continuation of these studies, together with certain other matters arising out of them.

There has long been a widespread impression among medical men as well as laymen that rheumatism and arthritis are often accompanied by an acid sweat. There are few, if any, records in the literature, however, of attempts to establish this by modern methods. In the effort to obtain accurate data on the subject and at the same time to ascertain what physiologic changes accompany the beneficial effects of bakes, hot packs and similar methods of treatment, a series of studies has been carried on in this connection on normal and arthritic persons.

Bazett and Haldane<sup>2</sup> have shown that subjects immersed to the neck in a bath at 38 C. experience a rise in body temperature accompanied by hyperpnea, giddiness and faintness; they also noted a fall in the alveolar carbon dioxid, a profuse alkaline sweat and a marked alkaline diuresis. This alkaline wave they compare to the changes occurring after voluntary forced breathing. Haggard<sup>3</sup> has observed a drop in alveolar carbon dioxid with increased temperature in a person immersed for twenty minutes in a bath at 40 C. He observed a fall in the dissolved carbon dioxid but no change in the carbon dioxid combining power of the blood, and deduces that the concentration of hydrogen ion ( $C_H$ ) of the blood must be presumably lowered. Pemberton, Hendrix and Crouter<sup>1</sup> have observed a similar fall in alveolar carbon dioxid in normal and arthritic persons subjected to "electric bakes"; and a rise above normal in alveolar carbon

dioxid after the bake in nearly every instance. In eight cases the carbon dioxid combining power of the blood was determined before, during and after the bake; and the stability reported by Haggard in this respect was not encountered, there being considerable fluctuation in both directions.

There is also a paucity of references in the literature bearing on studies by modern methods on the reaction of the sweat and the changes, if any, which it may undergo. Thus, Talbert<sup>4</sup> has reached the conclusion that all sweat is acid. Kittsteiner<sup>5</sup> found varying degrees of acidity in sweat from different parts of the body. On the other hand, Bazett and Haldane report an alkaline sweat, as just mentioned. There were therefore undertaken on normal and on arthritic persons a series of observations, which included the  $p_H$  of the sweat during the bake; the  $p_H$  of the urine before and after the bake, and the  $p_H$  of the saliva before and after the bake, together with observations in some instances on the percentage oxygen saturation and the carbon dioxid content of the blood.

The bakes were given in the usual manner, lasting from a half to one hour according to the rapidity with which the subjects started sweating. The body temperature and bake temperature were taken at ten minute intervals, and the time of the first appearance of sweat, as well as that of the subsequent samples obtained, was noted. The forehead was cleansed with alcohol and ether to remove all traces of sebaceous material, and the sweat was taken up from it into carefully cleansed blood pipets such as are used for making red cell counts. These pipets were convenient, not only on account of their size and shape, but also because the small bore afforded something of a safeguard against subsequent evaporation and loss of carbon dioxid on standing.

In general, three samples were taken at five minute intervals, and the  $p_H$  value was obtained within half an hour, sometimes immediately, by Felton's<sup>6</sup> modification of Clark and Lub's indicator method. This requires only a drop of fluid, and is accurate to within 0.1  $p_H$ . Samples of saliva and of urine were obtained just before and immediately after the bake, and the  $p_H$  was determined by the same method. The mouth of the subject was thoroughly rinsed before the experiment was started. The work of Starr<sup>7</sup> has indicated that the saliva acquires a reaction which is determined largely by the alveolar carbon dioxid in its passage through the mouth. He found that by collecting the saliva under oil, loss of carbon dioxid was prevented and a lower  $p_H$  value was obtained. In the present

\* From the Laboratory of Clinical Chemistry, Presbyterian Hospital.

\* Reported in outline before the Boston Orthopedic Association, March 20, 1922.

\* The work here reported is part of a study on arthritis in collaboration with R. B. Osgood, M.D., Boston.

\* The expense of the present investigation was defrayed by contributions from several sources, including a number of patients. Obligation should be particularly expressed for the gift of the late Mr. John H. McFadden.

1. Pemberton, Ralph; Hendrix, B. M., and Crouter, Caroline Y.: Studies in Arthritis: The Blood Gases and Blood Flow, J. Metabol. Res., to be published.

2. Bazett and Haldane: J. Physiol. 55: iv, 1921.

3. Haggard, H. W.: J. Biol. Chem. 44: 131 (Oct.) 1920.

4. Talbert, G. A.: Am. J. Physiol. 61: 493 (Aug.) 1922; 50: 433 (Dec.) 1919.

5. Kittsteiner, C.: Arch. Hyg. 74: 275, 1913.

6. Felton, L. D.: J. Biol. Chem. 46: 299 (April) 1921.

7. Starr, H. E.: J. Biol. Chem. 54: 55 (Sept.) 1922.



investigation this precaution was not taken, and the specimen of saliva presumably came into equilibrium with the air. Since the alveolar carbon dioxid with which the saliva becomes equilibrated in the mouth is constantly fluctuating during and after the bake, the  $p_H$  of saliva in equilibrium with the air gives possibly a more constant basis of comparison.

The arthritic patients as a group had a very slightly more acid reaction in the urine, saliva and sweat than did the supposedly normal persons. It is of more interest, however, to note that during the course of the bakes in each group there is a decrease in the acidity of the urine, and a decrease in the acidity or increase in the alkalinity of the sweat as the result of the bake; but these changes are more marked and are nearly invariable in regard to the sweat. There is a tendency for the  $p_H$  of the saliva to move in the same direction in the normal persons but not in the arthritic patients. These changes are feebly reflected in the averages for the urines, and not at all in those of the saliva.

The percentage of normal persons showing this tendency to increased alkalinity in urine, saliva and sweat was greater than was the corresponding percentage

TABLE 1.—FINDINGS IN NORMAL PERSONS

Subjects * Normals	Type	Time After Temp. High- = 100 F. est in Bake Body		Urine	Saliva	Sweat
		Sample 1, Sweat, pera- Min.	ture			
1 ♂	Thin	30	98.3	6.6-7.2	6.2-7.2	5.6-6.9
2 ♂ (two)	Medium	33	99.1	5.4-5.6	7.4-7.6	7.7-8.0-8.0
3 ♂	Medium	45	99.2	5.9-6.2	7.3-7.4	7.9-8.0-8.1
4 ♂	Stocky	45	99.4	6.8-7.2	7.0-6.8	7.0-7.6-8.0
5 ♂	Stocky	30	100.6	7.6-6.6	7.2-6.4	7.6-7.8
6 ♂	Stocky	30	99.2	.....	7.6-7.0	7.4-7.8-7.8
7 ♂	Thin	10	100.1	5.0-5.2	7.4-7.6	6.6-7.8-8.0
8 ♂	Thin, nervous	33	99.3	.....	7.8-8.0	6.2-6.6
9 ♂	Normal, stocky	30	98.4	6.0-5.8	6.6-6.8	6.2-7.2-7.6
10 ♀	Medium	30	100.5	6.4-7.4	7.5-7.2	7.4-8.0-8.0
Average.....		31.6	99.4	6.2-6.4	7.2-7.2	7.0-7.6-7.9
Percentage becoming more alkaline.....				75%	60%	100%
Range.....				5.0-7.6	6.2-8.0	5.6-8.0

\* Subjects who were men are indicated by the symbol ♂; women by ♀.

of arthritic persons in the ratios of 75, 60 and 100 to 70, 43 and 91 per cent.

There appears to be no direct relation between sweat alkalinity and either the height or the rate of rise of body temperature.

The difficulty of obtaining perfectly normal subjects was present here, as always, and there is some suggestion that in the cases of normal persons giving acid or less alkaline figures after the bake, there were departures from health in the way of focal infections, hay-fever, and the like. If these cases were eliminated, the contrast between the groups would become more striking, although, on the other hand, two marked arthritic patients gave distinctly alkaline sweat. Table 3 shows the changes in the sweat and urine as developed by a number of observations on the same person on varying diets during the course of electric bakes.

As far as we have searched the literature there is no record by modern methods of the difference between normal persons and arthritic patients which these figures suggest. It is also believed that the constant progressive change toward alkalinity or increased alkalinity of the sweat during the course of a bake shown by normal persons and by most arthritic patients has not been previously observed. It is of interest to note that two cases of arthritis giving extremely

acid sweats ( $p_H$  4.6) underwent no change in this respect during the bake, and in each case the ingestion of from 15 to 20 gm. of sodium bicarbonate before the bake in no way altered the reaction.

TABLE 2.—FINDINGS IN PATIENTS WITH ARTHRITIS

Subjects	Condition	Time After	High-	Urine	Saliva	Sweat
		T = 100 F. Before Sweat, Sample 1, Min.	est Tem- pera- ture			
11 ♂ (15 bakes)	Active, chronic	10	99.1	6.0-6.1	7.3-6.9	6.4-7.3-7.5
12 ♂ (2 bakes)	Slightly active arthritis, thin	0	99.8	6.0-6.3	.....	7.1-7.4-7.8
13 ♀ (from foot, 6)	Chronic, thin	15	99.7	6.6-6.4	7.1-7.0	6.1-6.8
14 ♀ (5)	Medium	20	99.7	7.1-7.3	7.3-7.1	5.8-6.4
15 ♀ (5)	Medium, acute	20	99.6	5.2-5.6	6.4-6.5	5.7-7.2-7.4
16 ♀ (3)	Acute, thin	20	98.8	6.6-7.2	6.9-6.6	7.4-7.4
17 ♀ (2)	Chronic, thin	35	100.8	5.7-6.1	8.2-8.2	8.0-8.4-8.4
18 ♀ (2)	Acute, medium	35	100.3	7.0-7.2	7.3-7.2	7.4-8.0
19 ♀ (2)	Active, medium	25	100.4	6.0-5.9	6.3-6.2	7.5-7.9
20 ♂	Mild case (?), thin	25	100.2	5.0-5.0	6.6-6.8	7.4-8.0-8.2
21 ♂ (2)	Subacute (?)	10	99.2	6.1-6.6	6.2-6.4	4.6-4.6-4.7
22 ♀	Active, medium	25	101.4	6.2-7.0	6.2-6.4	6.0-7.6-8.0
23 ♂ (2)	Mild, medium	10	99.5	5.7-6.1	.....	7.3-7.9-8.1
24 ♀	Thin, acute	10	101.2	6.2-7.5	6.8-7.4	8.0-8.4-8.4
25 ♂ (2)	Medium, subacute	5	98.4	5.0-5.0	8.0-8.0	6.1-7.3-7.4
26 ♀	Subacute, thin	20	99.4	6.8-6.4	7.2-7.4	7.4-8.0
27 ♀	Thin, chronic	30	100.9	5.2-6.4	7.4-7.0	6.7-7.2
28 ♀	Stout, chronic	40	98.6	5.0-5.2	6.0-6.4	4.6-4.6
29 ♀	Stout, gout (?)	30	98.7	5.8-5.8	6.8-7.2	5.8-6.4-6.8
30 ♂	Acute	5	99.4	7.1-6.4	6.2-6.2	6.9-7.6-7.6
31 ♂	Severe ankylosis	5	102.0	6.6-7.6	6.2-6.2	7.4-7.6-7.6
32 ♂	Active (?)	15	99.5	4.6-4.6	7.1-7.1	6.8-7.2-7.4
33 ♂ (4)	Active	15	100.7	5.7-6.4	6.8-6.3	5.8-6.8-7.3
Average.....		18	99.8	6.0-6.3	6.9-6.9	6.6-7.2-7.5
Percentage becoming more alkaline.....				70	43	91
Range.....				4.6-7.6	6.0-8.0	4.6-8.4

With the aim of influencing the acid sweat, five patients with arthritis were given from 10 to 20 gm. of sodium bicarbonate within the hour preceding the bake; but in none of these cases was the change in  $p_H$  markedly greater than without the bicarbonate. Table 4 gives the results obtained.

The nature of the acidity of the sweat remains to be determined; but it may be due to carbon dioxid, some alpha-hydroxy acid, phosphoric acid or fatty acids elaborated by the sebaceous glands. The failure to influence the reaction of the sweat with sodium bicarbonate is perhaps suggestive of the last mentioned mechanism, but this evidence is by no means conclusive.

TABLE 3.—CHANGES IN ONE PERSON ON VARYING DIETS DURING BAKES

Date	Diet	$p_H$ of Sweat Collected During Electric Bake	$p_H$ of Urine		Date of Bake
			Before Bake	After Bake	
11/18-11/26	General.....	6.4-7.2	...	...	11/25
11/26-12/ 6	Graham crackers, milk, butter; total calories, 2,370	6.4-7.2 6.2-7.4	5.4 ...	5.6 ...	11/29 12/ 3
12/ 6-12/23	Graham crackers, milk, butter; total calories, 1,500	6.4-7.0 7.0-7.0	...	...	12/ 7 12/21
12/23- 1/ 1	General; total calories, 1,500	6.8-7.4 7.2-8.0 7.4-8.0	5.6 7.1 7.4	6.5 6.7 6.8	12/23 12/28 12/30
1/ 1- 1/ 7	Bread, milk; total calo- ries, 1,430	5.6-7.4	5.6	5.8	1/ 5
1/ 7- 1/25	General.....	5.6-7.4 5.6-6.8 6.9-8.0	5.6 5.6 5.6	5.6 5.6 5.6	1/11 1/13 1/25

On the other hand, it is accepted that to some degree at least the sweat may play the rôle of an eliminative organ, and Ryffel and Barber<sup>8</sup> and others refer to the sweat glands as having the function of eliminating acids as well as certain other substances. According

8. Ryffel and Barber: Quart. J. Med. 13, No. 49 (Oct.) 1919.



to Starling,<sup>9</sup> "at a temperature of from 29 to 33 C., the carbon dioxid output by the skin is about 0.35 gm. an hour, i. e., about 8.4 gm. in the twenty-four hours. When the external temperature rises above 33 C., the carbon dioxid output increases so that at 34 it is doubled and at 38.5 it may mount to as much as 1.2 gm. an hour (Schierbeck). It is just at this temperature of 33 C. that a secretion of sweat begins to be noticeable; so it has been suggested that the increased carbon dioxid output may be due directly to the increased work and metabolism of the sweat glands during their activity."

It is conceivable that a decrease in acidity during a bake, as noted above, may be due to a large initial and lower subsequent output of carbon dioxid and Pemberton, Hendrix and Crouter<sup>1</sup> have suggested that part of the benefit of bakes in arthritis and, indeed, in certain other conditions, may be due to the heightened carbon dioxid output. There is no suggestion from the appearance of the various samples of sweat during a bake that sebaceous matter and fatty acids play an important rôle. Again, the increased alkalinity may be due to an "alkaline wave" resulting from the bake. The question is being further studied.

conduction of a bake there is, under the conditions described, a rise in the percentage saturation of the venous blood with oxygen. The mechanism of this is not entirely clear, but it seems probable that it is related, in some part at least, to a heightened blood flow. Thus, it has been shown<sup>13</sup> that blood coming from a hyperemic part contains more oxygen and less carbon dioxid than does blood from normal regions. In view of the fact that a rise in the percentage saturation may accompany the demonstration of a lowered sugar tolerance,<sup>1</sup> it was thought that it might be possible to induce a lowered sugar tolerance by accelerating the blood flow if the cause of a lowered sugar tolerance was to be found in a heightened circulation. It has been previously noted, however, in studies on bakes conducted by us in collaboration with Dr. B. M. Hendrix, that, in the course of six bakes, in five the blood sugar fell very little but constantly; in five, the percentage oxygen saturation rose.

Three patients with arthritis were given 100 gm. of glucose during the course of a bake, their sugar tolerance having been previously determined to be normal. In one, the blood sugar rose higher with the

TABLE 4.—RESULTS OF GIVING SODIUM BICARBONATE PRECEDING BAKE \*

Subjects	Amount Taken	No. Min. After Bake, T. = 100 F. Before Sweat, Sample 1	Highest Body Temperature	Urine pH		Saliva pH		Sweat Taken at 5 Minute Intervals During Bake	Change in Sweat pH
				Before Bake	After Bake	Before Bake	After Bake		
21 ♂	No bicarbonate.....	10	99.2	6.1	6.6	6.2	6.4	4.6-4.6-4.7	0.7
	15 gm. taken 35 minutes before bake.....	10	99.2	5.2	8.4	6.2	6.7	4.6-4.6	0.0
13 ♀	No bicarbonate.....	15	99.7	6.6	6.4	7.1	7.0	6.1-6.8	0.7
	15 gm. taken in 5 gm. doses during hour before bake	25	99.5	6.6	8.4	8.2	6.6	5.0-5.2	0.2
14 ♀	No bicarbonate.....	20	99.7	7.1	7.3	7.3	7.1	5.8-6.4	0.6
	10 gm. taken after first sweat sample.....	15	99.4	5.0	7.0	7.0	6.8	6.6-7.4	0.8
28 ♀	No bicarbonate.....	40	98.6	5.0	5.2	6.0	6.4	4.6-4.6	0.0
	20 gm. taken in 10 gm. doses an hour and a half before bake	40	99.2	6.9	8.4	6.4	6.2	4.6-4.9	0.3
33 ♂	No bicarbonate.....	15	100.7	5.7	6.4	6.8	6.3	5.8-6.8-7.3	1.5
	20 gm. taken in 10 gm. doses 15 and 30 minutes before bake	15	100.5	6.0	7.8	6.8	6.4	6.4-7.6-7.8	1.4

\* The first urine and saliva specimens were collected before the sodium bicarbonate was taken.

While Henderson and Palmer<sup>10</sup> have observed an increased alkali tolerance in acute rheumatic fever, there has been nothing in the previous studies on arthritis by us or our associates to indicate that chronic arthritis is accompanied by systemic acidosis; but in order further to investigate this point the amount of sodium bicarbonate necessary to render the urine alkaline was determined in eight fasting arthritic patients in varying types and degrees of involvement. A urine specimen was taken before and an hour after the ingestion of 4 gm. of sodium bicarbonate in 150 c.c. of water, from 4.5 to 5 gm. being the amount given by Sellards<sup>11</sup> and others as the maximum required to produce alkalinity in normal persons. All eight cases fell within this limit. These results are in accordance with the normal values for the blood carbon dioxid content obtained in the previous series of seventy-two arthritic patients.<sup>12</sup>

RELATION OF SUGAR TOLERANCE TO BLOOD FLOW

In the studies on bakes, previously referred to,<sup>1</sup> attention was directed to the fact that during the

bake than without, although remaining within normal limits. In two, the blood sugar did not rise so high with the bake as without, though within normal limits. In two, the percentage saturation rose higher in the bake; in the third, the percentage saturation was not determined.

Two patients were then given 100 gm. of glucose, and in each case one arm was placed in cold water, (17 C.) the other in hot water (40 C.) and the sugar tolerance was determined in each arm. The percentage oxygen saturation rose in the arms subjected to hot water, and fell in those placed in cold water. The sugar rose to practically the same degree in the two arms, varying only with the individual and not with the temperature.

One of these patients (Subject 19) had a low sugar tolerance and a high percentage saturation to start with; the other, had a high percentage saturation and a normal sugar tolerance.

Meakins and Davies<sup>14</sup> have shown that the effect of external heat on a part is to increase the percentage oxygen saturation of the venous blood, and we have shown that this is apparently true during the course of a systemic bake. While there is therefore no doubt that the percentage saturation rises with an increase

9. Starling: Human Physiology, 1920, p. 1218.  
10. Palmer, W. W., and Henderson, L. J.: Clinical Studies on Acid Base Equilibrium and the Nature of Acidosis, Arch. Int. Med. 12: 153 (Aug.) 1913.  
11. Sellards: Bull. Johns Hopkins Hosp. 23: 289, 1912.  
12. Pemberton, Ralph; Foster, G. L.; Robertson, J. W., and Tompkins, Edna H.: Studies on Arthritis in the Army, Based on Four Hundred Cases, Arch. Int. Med. 25: 230, 241, 242 (March); 335, 351 (April) 1920.

13. Wells, H. G.: Chemical Pathology, Ed. 4, Philadelphia, W. B. Saunders Company, p. 313.  
14. Meakins, J. C., and Davies, H. W.: J. Path. & Bacteriol. 23: 451 (Dec.) 1920.



in local or body temperature from external heat, there is only a slight indication of a relative change in the blood sugar, and this is in the opposite direction. The influence of an increased combustion of sugar because of the increased metabolism from the bake was not of enough moment to interfere with the experiment, as the three normal cases gave normal responses. It would also appear that the phenomena of a lowered sugar tolerance and the high percentage saturation of oxygen which accompanies it are referable to different mechanisms.

Attention has been previously directed<sup>15</sup> to the undoubted beneficial effects, in some forms of arthritis, of the application of a low caloric diet. In connection with this form of treatment and the study of its *modus operandi* we repeated some observations made during a complete fast of four days.<sup>12</sup>

The case previously studied was one of nearly complete fibrous ankylosis in which the patient recovered a large degree of motion in the four days mentioned. The patient also presented a greatly lowered sugar tolerance, which became increasingly lowered coincidentally with the acidosis incidental to the fast. The observations of Zuntz, Hofmeister and subsequent workers have shown, on several grounds, that acidosis

TABLE 5.—PERCENTAGE SATURATION OF VENOUS BLOOD, SUGAR TOLERANCE,  $p_H$  OF URINE, CARBON DIOXID COMBINING POWER OF BLOOD, AND DISSOCIATION CURVE

	Blood Sugar Values During Sugar Tolerance Test, Gm.	Oxygen Per- centage Satura- tion	$p_H$ of 24 Hour Urine Specimens	Acetone in Urine	Carbon Dioxid Content of Blood, per Cent.
Before fast.....	0.084 0.134 0.09	58.19	5.4	None	64.85
Fast of 87 hours	.....	.....	5.6 5.3 5.3	None Present Present	
After fast.....	0.044 0.093 0.15	53.82	5.8	Present	39.93

tends to prevent the utilization of sugar and the storage of glycogen.<sup>16</sup> It has also been suggested that a lowered sugar tolerance is referable to the same mechanism, and it was therefore determined to study a comparable case under similar circumstances. In the present case, however, there were very few active symptoms, and there was also a normal sugar tolerance. There was marked ankylosis, probably bony, as well as fibrous, and during the course of a similar four-day fast there was discernible a small, though distinct, increase in the range of motion of the hip and knee under observation.

As Table 5 shows, observations were conducted on the percentage saturation of the venous blood, the sugar tolerance, the  $p_H$  of the urine, the carbon dioxide content of the blood, and the carbon dioxide dissociation curve. The percentage saturation obtained after momentary use of a tourniquet was slightly lowered during the progress of the fast, coincidentally with the improvement noted; the sugar tolerance was slightly lowered, the  $p_H$  of the urine remained fairly constant around 5.4, and there was marked acetonuria; the alkali reserve was greatly lowered, and this was also reflected in the dissociation curve. The blood carbon dioxide content fell from 64.85 to 39.93. It would appear, therefore, that the acidosis produced by fasting

caused a slight lowering of the sugar tolerance, though not at all commensurate with that observed in the case referred to, in which there was a greatly lowered sugar tolerance from the outset. The percentage oxygen saturation did not increase with the slightly lowered sugar tolerance in the manner referred to elsewhere in this text. The fall in the percentage saturation was slight, and may have been merely an expression of the lowering of the oxygen dissociation curve produced by the acidosis.<sup>17</sup> There is therefore no evidence from study of this case that systemic acidosis, *per se*, is the cause of a lowered sugar tolerance or of an increase in the percentage saturation of the blood which may accompany the demonstration of a lowered sugar tolerance. It is hoped to pursue the question further, however.

#### OXYGEN THERAPY

In connection with the conception of arthritis as a disease in which there is a difficulty in some phase of the local or general oxidative metabolism, oxygen was administered to two patients with arthritis, at regular intervals and over a fairly long period. One patient inhaled pure oxygen for fifteen-minute periods twice daily for almost three weeks by means of the Meltzer method.<sup>18</sup> This consists in the respiration of oxygen through a tube fitted with valves and connected with a rubber bag and a tank, the whole so arranged that the pure oxygen respired was under pressure from the distended bag. The second patient was given oxygen three or four times a day for an even longer period, but in neither was any benefit observed. The failure of benefit is in keeping with the observation that arthritic patients as a class, and under the conditions described, tend to have a slightly higher percentage saturation of the peripheral venous blood than do normal persons, and the addition of further oxygen would therefore not appear, *a priori*, to improve the situation. Different results, however, might follow subjection of patients to increased positive pressure of oxygen over longer periods of time in a closed chamber.

#### $p_H$ OF STOOLS

During the studies on the  $p_H$  of the sweat and the urine, observations were also conducted on three or four stools from each of eight patients with arthritis, and two normal persons. McClendon<sup>19</sup> found that the average  $p_H$  of the contents of the small intestine in two persons, obtained by lowering a tube, were 4.9 and 5.4, and that the hydrogen ion concentration became less as the tube descended into the small intestine. Five of the eight patients now under consideration were on restricted and fixed diets; three were not. Three of the patients showed marked improvement under the restricted diet. The  $p_H$  varied from 6.4 to 7.4, each individual maintaining a constancy to within 0.4, as a rule. The normal persons studied gave the same results. One arthritic patient who showed marked improvement on a lowered diet was studied when on and off this fixed diet, and gave no marked variation in the  $p_H$  of the stools. There is therefore, in these observations, no indication that the benefit from the application of restricted diet, in which the carbohydrate fraction is most reduced, is referable to any change in the reaction of the bowel content, so far, at least, as the feces and the method reflect this.

15. Pemberton, Ralph: The Use of Diet in the Treatment of Arthritis, *Am. J. M. Sc.* **161**: 517 (April) 1921.

16. Lusk, Graham: *Elements of the Science of Nutrition*, Ed. 3, pp. 261, 421, 447.

17. Barcroft, Joseph: *The Respiratory Function of the Blood*, New York, G. P. Putnam's Sons, 1914.

18. Rudolph, R. D.: *Am. J. M. Sc.* **160**: 10 (July) 1920.

19. McClendon: *Science* **52**: 566, 1920.



Through the courtesy of Dr. John Eiman, pathologist to the Presbyterian Hospital, Philadelphia, observations were also conducted as to the presence of streptococci; but from none of the cases could any be isolated.

The present paper is in the nature of a preliminary communication, to be followed later by the report of further studies now being conducted.

#### CONCLUSIONS

1. A series of ten supposedly normal persons and twenty-three patients with arthritis in various stages of the disease was studied in respect to the hydrogen ion concentration of the urine, saliva and sweat during the course of "electric bakes" administered in the usual therapeutic manner.

2. The urine of the normal persons, obtained before and after the bake, showed a very slightly less acid reaction on the average than did that of the arthritic patients in the ratio of  $p_H$  6.2 and 6.4 to  $p_H$  6.0 and 6.3. The reaction of the saliva was also very slightly less acid in the case of the normal persons, in the ratio of  $p_H$  7.2 to  $p_H$  6.9. The average differences are so small as to be almost negligible.

3. The study of the sweat from the forehead obtained before, during and after the bake, however, showed consistent and more marked differences between the two groups in the average ratios of  $p_H$  7.0, 7.6 and 7.9 for normal persons and  $p_H$  6.6, 7.2 and 7.5 for the arthritic patients. The reaction of the sweat of some of the patients with arthritis reached figures much more acid than were encountered among the normal persons.

4. The average initial reaction of the forehead sweat of the normal persons studied corresponds to a  $p_H$  of 7.0, which is just on the acid side of the blood reaction, though there may be departures to either side. The reaction of the sweat at different sites may vary, and it is important that conclusions regarding it be based on a number of persons.

5. During the course of a therapeutic bake there is a consistent and marked tendency for the reaction of the sweat to change toward the less acid or more alkaline range, irrespective of whether it was acid, neutral or alkaline at the outset. This tendency was invariable among the normal persons, and marked among the patients with arthritis. In two arthritic patients the very acid reactions of the sweat underwent no modification as the result of the bake. Administration of from 10 to 20 gm. of sodium bicarbonate was without influence on the reaction of the sweat in five patients with arthritis whose sweat was on the acid side of the blood reaction.

6. The percentage oxygen saturation of the peripheral blood tends to rise with increased local or body temperature when this is caused by external heat. Under these circumstances the blood sugar falls slightly. Attempts to reproduce the blood findings of a lowered sugar tolerance by administering glucose during a bake were unsuccessful.

7. Following the administration of glucose, similar observations made after placing one arm in hot and the other in cold water resulted in practically the same sugar figures in each arm, although the percentage oxygen saturation rose in the arm placed in hot (40 C.) and fell in the arm placed in cold (17 C.) water.

These observations suggest that the rise in percentage oxygen saturation which may accompany the demonstration of a lowered sugar tolerance is referable to

an independent mechanism. They do not strengthen the view that a lowered sugar tolerance is due to a heightened blood flow.

8. Studies of the  $p_H$  of the stools of two normal persons and of eight patients with arthritis in various stages of disease revealed no significant differences. The  $p_H$  varied from 6.4 to 7.4, each individual maintaining a constancy to within 0.4, as a rule. One patient studied before and after convalescence on a lowered caloric diet, and another patient studied after convalescence from the same therapy, gave no marked variation. It seems fair to conclude that the benefits from the application of a reduced dietary do not depend on changes in the  $p_H$  of the intestinal tract, so far as the feces and the method reflect this. The foregoing series of stools were examined for streptococci, but none were detected.

9. Alkali tolerance tests administered to eight fasting patients with arthritis gave normal results in every case.

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#### ORTHOSTATIC ALBUMINURIA

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During the investigation, study and teaching of nephritis and allied conditions, there have come under our observation and been available for hospitalization or accurate control in the office numerous cases of so-called orthostatic or variable albuminuria, which have been made the subject of a special study. In our experience, every case of orthostatic albuminuria, with very rare exceptions, will become and remain albumin free, regardless of posture, exertion, time of day or urinary concentration, as long as the urine remains neutral or slightly alkaline. In three cases, alkalization failed to prevent the appearance of albumin, and, at present, we believe that, while there was no evidence of renal disease demonstrated, these cases include some slight or early element of nephritis, or belong to the group later referred to as "leaky kidneys." However, we do not claim that every case of pure orthostatic albuminuria will necessarily respond to alkalization by becoming albumin free, though the failure to do so in a given case leads us to suspect that we are dealing with another condition. It is to be noted, however, that several cases which persistently showed albumin in urine neutral to litmus at the time of voiding became immediately albumin free when the urine was neutralized to phenolphthalein, to which it had previously remained acid.

Concerning this condition, there is still much controversy regarding the factors in its production, and the time and causes of its appearance, these differences of opinion being reflected in the variety of names applied, intermittent, cyclic, postural, variable, adolescent and orthostatic albuminuria being the most frequently used. For the sake of brevity, the condition under discussion will hereafter be referred to as orthostatic albuminuria, which will be understood to designate a condition in which the urine excreted while lying down is albumin free, with the subsequent presence of albumin at times after rising, the amount



or presence varying with numerous factors to be discussed later.

Following Richard Bright,<sup>1</sup> in 1827, the presence of albumin in the urine was regarded as unquestionable evidence of kidney disease, until 1870, when Ultzmann<sup>2</sup> reported eight cases of albuminuria with no clinical findings that could be considered pathologic, and suggested the possibility of albuminuria without an accompanying nephritis. Work on this question was eagerly taken up, especially in England, and for the next twenty years numerous cases were reported and various theories advanced regarding its etiology and significance.

Hooker<sup>3</sup> carries the literature up to 1910, giving a chronological, critical and comparative summary of the various advances and changing conceptions; and from that date until the present there have been no noteworthy contributions. A great deal of the controversy has resulted from two or three fundamental misconceptions of the problem, and from confusion of terminology. Thus, Jehle<sup>4</sup> claims that lordosis in the twelfth dorsal and the first and second lumbar vertebrae is the cause; others claim it is due solely to the upright position, regardless of the presence or absence of lordosis, citing examples of marked artificial (orthopedic) or pathologic curvatures without albumin, while numerous writers see indications of an albuminuria which appears in the standing position, but is cyclic in character, appearing regularly at certain times of the day, or bearing a definite relationship to meals. Each of these, according to its progenitors, is an entity, deserves a special name and is honored with a distinct etiology.

It now appears possible to explain, on a relatively simple basis, the appearance of nonnephritic albumin, and to show how each of the several factors cited as etiologic may be more or less primary in the condition. One cannot, however, ignore certain questions that will persist and that we make no attempt to answer finally.

#### FREQUENCY AND PREDISPOSING FACTORS

Certainly, age is not the paramount factor; for, while orthostatic albuminuria appears most frequently in the period of adolescence, it is frequently found in the earlier years, and persists through middle life, occasionally to old age. There is no disagreement, however, on the relative frequency in early life, though some observers state that it is most frequent at or before the eighth year, while others present statistics to prove the more common occurrence between the ages of 10 and 16, or between 12 and 20, with a great decrease in frequency after maturity.

In the absolute frequency, writers again differ: Leube<sup>5</sup> reported the condition in 16 per cent. of 119 healthy soldiers; Capitan,<sup>6</sup> in 44 per cent. of healthy soldiers and 40 per cent. of children; Langstein,<sup>7</sup> in 12 per cent. of all children over 5 years old; Chateaubourg and Gull, in the same proportions, and Saito,<sup>8</sup> twenty-six cases in 150 girls examined. Recently, a study of the schoolchildren of Lausanne gave figures as high as 39 per cent., while Senator<sup>9</sup> states that he

finds albumin in the urine of all healthy men, and that orthostatic albuminuria is only an exaggerated form of the normal.

On the other hand, MacLean, in 60,000 recruits examined for the British draft, observed albuminuria unassociated with other defects in 5 per cent., which coincides with the results obtained by Lee<sup>10</sup> and Parmenter<sup>11</sup> on the students at Harvard. In examining 5,000 men, aged 16 to 24, eliminating inflammatory processes of the genito-urinary tract and accepting as positive only cases in which the albumin was definite, Lee found, in specimens passed at the time of examination, 5 per cent. albuminurias, with only 0.1 per cent. actual nephritics. In reexamining any 100 unselected students, albumin was constantly found in 5 per cent., but not always in the same individuals as in previous examinations. Three would show albumin both times; two who had albumin the first time would have none, while two others previously negative would prove positive. Furthermore, while the freshman class (average age, 18) constantly showed 5 per cent., the upper classes (averaging 20+) gave only 3.5 per cent.; but the outcome could not be predicted in any given individual. Parmenter found 4, 11, and 15 per cent., respectively, in candidates for track, hockey and football; but the "stars" were always negative. There is no doubt that the observers finding constantly high percentages are using very delicate methods, and with the ordinary technic the figures will run much lower. It is also clear that the condition is found frequently in early youth, decreasing progressively to maturity.

The relation to sex has not as yet been satisfactorily settled. It is generally considered more frequent in boys, though Heubner<sup>12</sup> and Langstein deny this. Moor,<sup>13</sup> writing in 1921, agrees with them. Schlaps<sup>14</sup> finds it four times as frequent in girls as in boys, while Jeanneret,<sup>15</sup> who should speak with authority, states that it is slightly more frequent in girls. It would appear from personal observations that, in the second and third decades, the condition appears relatively more frequently in the male, while our experience is too limited to draw any conclusions regarding the earlier years.

However, there is universal agreement as to the type of individual in which orthostatic albuminuria is most frequent. So characteristic is the habitus that the condition can often be correctly predicted from mere inspection. Young children are thin, rapidly growing, of the weedy, frail or lanky type; the chest is long and narrow, the intercostal angle narrow, the scapulas and abdomen prominent, and the heart, which on percussion is apparently hypertrophied, is actually long and dropped, as shown by the fluoroscope.<sup>16</sup>

There is widespread evidence of vasomotor instability: pale skin, red lips, moist, cold, cyanotic hands, dilated pupils, subjective lassitude, headaches, dyspnea, faintness, palpitation, vertigo, sensitiveness to cold, and sound sleep, but with attendant tiredness in the morning; and, altogether, evidence that the subject is a high-strung, irritable child. In England, there is a well recognized type of boy, called "chapel fainter," among whom the proportion of albuminurias is high. Jeanneret, standing alone in this position, believes that the foregoing characteristics are due to the loss of albumin,

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2. Ultzmann: Wien. med. Presse **11**: 81, 1870.  
3. Hooker, D. R.: Postural or Orthostatic Albuminuria, Arch. Int. Med. **5**: 491 (May) 1910.  
4. Jehle: Die lordotische Albuminurie, Leipzig, 1909; Ergebn. d. inn. Med. u. Kinderh. **12**: 808, 1913.  
5. Leube: Virchows Arch. f. path. Anat. **72**: 145, 1878.  
6. Capitan: Theses, Paris, 1883.  
7. Langstein: Die Albuminurie älterer Kinder, 1908.  
8. Saito, Hideo: Clinical Investigations on Orthostatic Albuminuria, Am. J. Dis. Child. **22**: 388 (Oct.) 1921.  
9. Senator: Deutsch. med. Wchnschr. **30**: 1833, 1904.

10. Lee, R. I.: M. Clin. N. America **3**: 1059 (Jan.) 1920.  
11. Parmenter, D. C.: Boston M. & S. J. **183**: 677 (Dec. 9) 1920.  
12. Heubner, O.: Lehrbuch der Kinderheilkunde, Leipzig, 1911.  
13. Moor, F.: Brit. M. J. **1**: 671, 1921.  
14. Schlaps: Arch. f. Kinderh. **35**: 41, 1903.  
15. Jeanneret, L.: Arch. de méd. d. enf. **18**: 461, 1915.  
16. Bass, M. H.: M. Clin. N. America **4**: 1595 (March) 1921.



causing a state of fatigue, depression and apathy, regardless of the fact that many such children show no albumin.

In adults, Teissier<sup>17</sup> notes a tendency to urticaria, chilblains, purpura, eczema and various erythemas. Lee, who found 5 per cent. in the entire freshman class, found 2 per cent. in candidates for the freshman squad, 1 per cent. in candidates for the varsity squad and no cases in the athletic "stars."

The most recent controversy is over the functional state of the nervous system. Eppinger and Hess,<sup>18</sup> in 1909, stated that all cases of orthostatic albuminuria in their experience showed sympathicotonia. More recently, Schleyer and Saito state definitely that all cases exhibit vagotonia. In our experience the manifestations of sympathicotonia and vagotonia are associated in these cases.

A few hereditary and familial cases have been reported, but no particular significance has been attached to them.

#### PROGNOSIS AND SIGNIFICANCE

The significance and prognosis of orthostatic albuminuria present, with a few outstanding exceptions, no great ground for debate. Quite alone, but certainly to be heard with consideration, is Senator, who states that an irritation or inflammation which may progress to recovery or to diffuse chronic nephritis is responsible for most, if not all, cases of cyclic or orthostatic albuminuria, and considers the eventual outcome as relatively grave. Opposed to him is Jehle, who believes that this form of albuminuria is not associated with renal pathology, and Heubner,<sup>19</sup> who also believes it does not signify the existence of any permanent underlying renal disease, with Politzer<sup>20</sup> maintaining a middle ground. Lee followed his cases five years, and in no known cases that did not present other evidence of nephritis did it develop; and the few cases with casts, found inconstantly, which were classified as orthostatic, were not more persistent than the others. With Parmenter, he concludes that the condition tends to disappear. Mason and Erickson<sup>21</sup> believe the prognosis is good, but suspect that the continued passage of large quantities of albumin may in itself finally give rise to irritative changes of the kidney. MacKenzie Wallis, describing cases of longstanding proteinuria, states that these kidneys show no evidence of progressive or organic disease. Gardner likens the presence of albumin to a cardiac murmur which persists without other evidence of disease, or to a tuberculous induration of a lung. Insurance companies are intensely interested in this question, and their statistics bear out the common beliefs in this regard. Fox,<sup>22</sup> who has devoted much time to insurance work, quotes Dukes, who followed 300 cases from Rugby, and Sir J. Goodhart, with thirty-eight cases after five years, and confirms their favorable opinion with a report of twenty cases followed over an average of thirty years. Of these twenty patients, five were dead: two from accidents, two from tuberculosis and one from chronic arthritis. Of the remaining fifteen, all were well, with an average age of 56, and after careful examination were pronounced clinically normal, none showing evidence of nephritis.

Barringer<sup>23</sup> examined 396 men, passed for life insurance, dividing them into three groups: 115 with albumin and no casts, 203 with albumin and a few hyaline casts and fifty-three with albumin and a few granular casts. Eleven years later, seventy of the original 396 were reexamined, twenty of whom had shown albumin alone. Of these twenty, twelve had normal urine; eight had albumin, and four of these eight had casts, with no evidence of cardiac or vascular disease. In the original group of 115 simple albuminurias, four patients had died, an increase of 37 per cent. over the expected deaths, and of the four deaths, two were from tuberculosis. From these and other insurance statistics, Barringer concludes that simple albuminurias are five times more frequent before 20 years of age than after; that only exceptionally is albumin evidence of incipient nephritis, but that it is evidence of lowered general resistance, predisposing to tuberculosis and an increased mortality.

Theoretically, then, orthostatic albuminuria might be regarded as a precursor of more severe renal disease; but, on the evidence of numerous observers, this does not seem to be the case. Personal observations support the opinion of those who have found that orthostatic albuminuria is not an indication of approaching renal disease.

The use of various renal function tests confirms the impression that the condition is benign. Numerous workers, with a variety of functional tests, all report normal findings. Mason and Erickson, with the Mosenthal test meal, find a marked oliguria and high concentration in the upright position, contrasted to normal results in bed, and a phenolsulphonephthalein test entirely inconclusive, some excreting more dye in the horizontal, others in the orthostatic, position, but excretion good in all cases. The kidneys appear hypersensitive in the upright position, as evidenced by an increased rate of urea excretion, with a slightly heightened chlorid threshold. This may be an indication of the increased production of urea in the upright position and should be checked by a determination of the urea in the blood. In fact, their own figures indicate that there is a heightened chlorid threshold, which may be accepted as evidence of such a change in the general chemistry of the body as might be associated with the increased urea production.

Artificial lordosis in the horizontal produces no definite deviation. Barker and Smith<sup>24</sup> report six cases: two in patients described as "spare," the others having no record of weight or nourishment, but all presenting accentuation of lumbar lordosis. In two, the phenolsulphonephthalein excretion was tested in the lying and standing positions, one patient excreting 64 per cent. in both positions, the other 69 per cent. lying and 54 per cent. standing. There was no accompanying record of albumin. The four other cases gave normal figures for the lying position. At present, there is no means of determining whether this variation in phenolsulphonephthalein excretion in the lying and standing positions is due to changes in the kidneys or changes in general body tissues, or both. Loeb,<sup>25</sup> using Koryani's quotient  $\Delta/\text{NaCl}$ , shows that, in orthostatic albuminuria and cardiac diseases, there is an increased  $\Delta/\text{NaCl}$ , with a lessened sodium chlorid and water output in the upright position as compared to the lying,

17. Teissier: *Semaine méd.* 19:425, 1899.

18. Eppinger and Hess: *Ztschr. f. klin. Med.* 67:68, 1909.

19. Heubner: *Berl. klin. Wchnschr.* 44, 1907.

20. Politzer: *Ren juvenum—Beitrage zur Kenntniss der orthostatischen Albuminurie*, Berlin, 1913.

21. Mason, E. H., and Erickson, R. J.: *Am. J. M. Sc.* 156:830 (Dec.) 1918.

22. Fox, R. H.: *Lancet* 1:116 (Jan. 15) 1921.

23. Barringer, T. B., Jr.: *The Prognosis of Albuminuria With or Without Casts*, *Arch. Int. Med.* 9:657 (June) 1912.

24. Barker, L. F., and Smith, F. J.: *Am. J. M. Sc.* 151:44 (Jan.) 1916.

25. Loeb: *Deutsch. Arch. f. klin. Med.* 83:452, 1905.



a condition not found in nephritis. English workers, using the diastase method, report normal findings, and there is practical agreement on this subject. Teissier describes an albuminuric cycle on arising, the urine showing increased amounts of coloring matter, then albumin, then increased amounts of urine, followed, by increased amounts of urea. This deserves further investigation, and may explain the divergent reports of urea, chlorid, phosphate and water secretions, leading as well to further knowledge of the mechanism.

We have had under observation during the last four years several cases of true orthostatic albuminuria in which appropriate laboratory and chemical tests have been carried out, including the phenolsulphonephthalein, nonprotein nitrogen, urea, creatinin, chlorids and sugar of the blood, the nitrogen index (modification of Ambard's coefficient), and modifications of Mosen-thal's procedure, with particular reference to the variation of specific gravity, as well as alkali reserve (Van Slyke) and bacterial cultures and examination of the urine. Any detailed report of the results would be superfluous, as without exception they were within the limits of normal variation.

#### CHARACTER OF ALBUMIN FOUND

In the recent British literature, "proteinuria" is rapidly displacing "albuminuria," in references to the type of cases under discussion, owing to the adoption of the word by Mackenzie Wallis<sup>26</sup> in his clinical work and biologic chemistry, and to his belief that the substance in the urine of these cases is largely globulin. In a paper read in May, 1920, before the Royal Society, Wallis thus explains his position: "Physiological albuminuria, occurring after severe exertion, is largely serum albumin, which may leak through the kidney with excessive amounts of normal urinary constituents, especially urea, acting as a diuretic." In addition, he makes three more classes of nonnephritic proteinuria, the functional (adolescent, or postural), the familial intermittent, in which, for periods unrelated to any known factors, protein will be continually in the urine and the condition known as leaky kidney, defined as permanent, long-standing, profuse proteinuria showing no evidence of organic or progressive disease.

The blood serum contains two proteins: serum albumin and serum globulin, the former much in excess in organic renal disease, but not the sole constituent of the urinary protein, the latter usually overlooked. According to Wallis, the various classes of proteinuria contain certain proportions of serum albumin and serum globulin, respectively: functional albuminuria, 2:1, leaky kidney, 1:2, chronic nephritis, 6:1, and toxic nephritis, 6:1.

This is true globulin, often called euglobulin, an insoluble lipoglobulin formed by the combination of the water soluble pseudoglobulin with a lipoid and called commonly nucleo-albumin. Thus, in organic renal disease, the less viscous, more diffusible serum albumin predominates, while in the so-called functional and variable proteinurias, the globulin is in relative excess. The albumin of nephritis is thus similar to an inflammatory exudate in which serum albumin is abundant, while the globulinuria of the nonnephritic is of the nature of a transudate, which abounds in euglobulin. Furthermore, the proteinuria of eclampsia abounds in globulin, which decreases rapidly after delivery or with subsiding symptoms, while in nephritis

an increased globulin of urine and blood is distinctly unfavorable, but here the globulin is the pseudoglobulin. Wallis concludes that the protein precipitated by acetic acid in the cold is euglobulin, which occurs in nonnephritic cases and tends usually to disappear in later life; that the condition "leaky kidney" is an excessive globulinuria and tends to remain, but shows no renal disease or structural changes, and that, in the true orthostatic type, both albumin and globulin are present, but during the course of the day or during improvement the globulin may fade and leave small amounts of albumin alone.

As early as 1886, Jaccoud<sup>27</sup> and Maguire<sup>28</sup> reported globulin in these cases, confirmed in 1905 by Teissier, but its presence has been largely ignored. In 1921, Saito found that this body precipitated by acetic acid varies absolutely and relatively in the same person, and Harrison<sup>29</sup> found no constant proportion of lipoglobulin, the variation being from 0 to 100 per cent. in the same person at different times. We have noted the frequent occurrence of the so-called nucleo-albumin, and sometimes have been struck by the large proportion of it, but have made no systematic quantitative comparisons with the amount of serum albumin.

#### ETIOLOGY

Regarding the etiology and mechanism of orthostatic albuminuria, there is less unity of opinion, and discussion centers about seven or eight theories, apparently more or less incompatible. The principal causes held partially or wholly responsible for the condition by various writers are: (1) lumbar lordosis, causing venous stasis of the renal vessels; (2) a subnormal type of constitutional and vascular development; (3) lesions of the renal substance; (4) vasomotor instability with renal hyperemia; (5) deficiency of some normal constituents of the blood; (6) reflection of a general lowered condition, and (7) foci of infection, with diminished respiratory function of the blood.

1. Jehle believes that in addition to orthostatism, or the upright position, lordosis of the twelfth dorsal and first and second lumbar vertebrae is the sole cause of this type of albuminuria, and he names it lordotic. The albuminuria he attributes to venous stasis of the renal vessels. Supplementary evidence confirms the important rôle of lordosis, but proves as well that it is by no means the sole factor, since, in many cases of severe albuminuria, inspection and roentgen-ray examination fail to reveal any lordosis; while the lordosis may exist in marked degree without albuminuria, both in otherwise normal cases and in spondylitis and cast fixations causing an artificial lordosis, and extreme provocative lordosis usually fails to cause the appearance of albumin. Lee finds albumin in three times as many students rated "D" in posture as in those who stand well. Bass states that there is usually present a postural defect causing lumbar lordosis and consequent renal congestion; he believes that the type is prone to lordosis, with albuminuria an expression of the curvature, and he succeeds in eliminating the albumin in many cases by applying a suitable brace. Saito found lordosis in 55 per cent. of forty-four patients of this type, whereas the average for a large number was 32 per cent. Also, among 150 girls were found twenty-six with orthostatic albuminuria, of whom fifteen had lordosis and eleven none, and nine extreme lordotics had no albumin.

26. Wallis, R. L. M.: *Proc. Roy. Soc. Med. (Sect. Med.)* 13:96 (May) 1920.

27. Jaccoud: *Clin. med de la Pitre*, 1887.

28. Maguire: *Lancet* 1:1106, 1886.

29. Harrison, G. A.: *Lancet* 2:991 (Nov. 12) 1921.



2. Politzer and Teissier believe that the condition is due to a subnormal constitutional or vascular development that precludes the upright position being maintained with normal physiologic functions, Politzer adding a second factor of a small renal lesion, and Teissier and Leube classifying kidneys as unpermeable, semipermeable and permeable and locating the permeability in the glomeruli, a result of this developmental defect.

Schlaps declares the condition is four times as frequent in girls as in boys, ascribing this to the frequency of developmental anomalies in girls. Teissier later ascribes the condition to abnormal metabolic processes and consequent nutritional disturbances of the kidney, causing increased permeability, and adds rheumatism and gout to the list; while later he and von Noorden<sup>30</sup> state that it is always a pretuberculous condition. In regard to permeability, the question arises, why does not the colloid of the blood always pass through the walls of the blood vessels of the kidney into the urine? Since urea, uric acid and bile salts pass, why not glucose and albumin, for egg albumin injected intravenously will pass into the urine? The only answer at present is that there is some selective activity associated with living cells, and the kidney normally excretes those substances which the blood brings and which are of no further use to it.

3. Heubner, Posner<sup>31</sup> and Pribram<sup>32</sup> believe the albumin is due to slight lesions of the renal substance, with no evidence of disease other than the presence of albumin in the upright position, but the mere assertion that the albuminuria is due to the upright position is not an explanation of the phenomenon.

4. The theory that orthostatic albuminuria is due to a vasomotor instability or a so-called neurosis developed from clinical observations before the facilities for determining blood pressure, and was carefully investigated without the present instruments. First among these workers were Erlanger and Hooker,<sup>33</sup> whose results follow in some detail. They found that in these cases the pulse pressure in the upright position was lower than in the horizontal, owing to a diastolic rise, the systolic remaining practically constant, as contrasted with a systolic rise in normal individuals, in whom the pulse pressure remains practically constant, and that in orthostatic albuminuria the pulse pressure and albumin vary inversely. Furthermore, when one takes the upright position in water at body temperature or in a pneumatic suit under pressure to overcome "gravity bleeding," the pulse pressure shows no decrease, with consequently no albuminuria. They show that pulse pressure is decreased by immersion in cold water and increased by immersion in warm water and by moderate and severe exercise and eating, and note a gradual increase during the day, with the albumin varying accordingly.

The amplitude of pulse pressure determines the degree of pulsation of current, and they show that a pulsating pressure is much more efficient than a steady pressure of the maximum pulsation. In a perfused, excised kidney, a satisfactory circulation is obtained with a much lower pulsating pressure than with a steady one, and, in an artificially perfused organ, edema which develops with a steady pressure can be prevented or reduced by an intermittent pressure. In addition to the improved renal circulation, the expan-

sile movements of the glomeruli must be of value in the process of excretion. Mason and Erickson entirely confirm these findings, and in addition assert that they observed a decrease in pulse pressure while in the horizontal position by artificial lordosis, while Bass and Wessler<sup>34</sup> fail to find any indication of these blood pressure changes, working, however, with much younger children. Gesell<sup>35</sup> showed that, with the same rate of flow but with lowered pulse pressure, the nutrition of the kidney cells was markedly altered; and several workers have shown that during and immediately after exercise the diastolic and systolic pressures are much increased, the systolic more than the diastolic, this condition giving way to a fall of both with a decreased pulse pressure, at which time albumin appears, regardless of the actual systolic and diastolic pressures; and as the pulse pressure again reaches normal the albumin disappears.

Edel<sup>36</sup> found that diuretics, hot baths and dieting cause the albumin to disappear, and he emphasizes the vasomotor instability, resulting in an inability of the cardiovascular system to respond to ordinary changes.

Lee found wide variations in blood pressure, and, with critical observations, concluded that the alteration was inconstant and associated with the nervous disturbance attendant on the examination, that is, it represents types of labile blood pressure; but he found the incidence of albumin twice the normal in these cases. Sterling<sup>37</sup> notes the adolescent nervous development, which is notoriously unstable and may produce reflex hyperemia of the kidneys, particularly with a vascular system not yet fully developed. Dukes believes it is a renal hyperemia just held in check. Here, then, we begin to find a scientific basis, with well correlated attempts to arrive at a rational explanation of the situation.

5. Recently, the English<sup>38</sup> workers have attempted to show that the albuminuria is based on an abnormality of the blood related to lack of calcium, since many cases were reported cured by administration of calcium lactate: a condition of hypocoagulability and disordered calcium metabolism related to rapid growth of the bony system and characterized by certain skin conditions, such as chilblains, urticaria, eczema and purpura.

6. Parmenter, Pavy and others relate the condition to fatigue, digestive disorders, migraine and generally lowered conditions of vitality and resistance, and from Denmark come reports of a unilateral type, the albumin always appearing in the left kidney.

7. One other point we wish to bring out was first made by Jeanneret, who shows the marked influence of immobility of the body in causing albumin.

With such a variety of factors at work there is only one conclusion to be reached: this variable appearance of albumin is not an entity, but the result of two or more causes, none of which alone is able to produce the condition, but it may appear as the combined effect of several other factors. The condition may be regarded as a stasis of renal circulation as well as a stasis of other portions of the body, producing analogous results in body tissues and in the blood stream itself. Although there are at present no methods of demonstrating them, it is not unlikely that during the

34. Bass, M. H., and Wessler, H.: A Study of the Blood Pressure in Children Showing Orthostatic Albuminuria, *Arch. Int. Med.* **13**: 39 (Jan.) 1914.

35. Gesell, R. A.: *Am. J. Physiol.* **32**: 70, 1913.

36. Edel: *München. med. Wchnschr.* **48**: 1833, 1901.

37. Sterling: *Lancet* **2**: 1157, 1887.

38. Luff: *Brit. Med. J.* **1**: 261, 1909.

30. Von Noorden: *Ztschr. f. Urol.* **1**: 1017, 1907.

31. Posner: *Ztschr. f. klin. Med.* **3**: 42, 1904.

32. Pribram: *Deutsch. Arch. f. klin. Med.* **90**: 367, 1907.

33. Erlanger and Hooker: *Johns Hopkins Hosp. Rep.* **12**: 145, 1904.



period of albuminuria there are taking place in the pancreas, spleen, liver and splanchnic areas changes which correspond to those identified in the kidney function. Pressure above the umbilicus, deep enough to compress the vena cava, results within three minutes in an albuminuria similar in every respect to the orthostatic variety and probably results in some perverted function of numerous other tissues whose circulation is similarly disturbed. From this point of view, then, it is easier to understand the contradictions with which the literature is replete, for in no two individuals will the same factors be equally important. Fat or lean, short or tall, there may or may not be an adequate number of sufficiently potent factors operating synchronously to produce an albuminuria. Lordosis or the upright position may be important in one, while there are well developed cases of albuminuria which are definitely cyclic regardless of position.

Tentatively accepting the stasis hypothesis, it is necessary to examine the numerous elements in its production and roughly evaluate them. The upright position clearly is of primary importance, and reference again to Jeanneret aids in its explanation. A girl, aged 11, normal physically, had albumin at noon after school, but none after three hours in bed and none after playing for an hour in the garden. But albumin appeared after three minutes' standing immobile with artificial lordosis, and failed to appear under the same conditions if the legs were kept in motion.

Experiments in 204 unselected cases were carried out over a period of several months, with these results: Exaggerated lordosis, prone with immobility, gave albumin in 3 per cent. of cases; exaggerated lordosis, prone with movement of legs, in none; upright position alone in 1.3 per cent.; upright position, lordosis and movement of legs in 1.6 per cent.; upright position, lordosis and immobility in 49 per cent. He concludes that lordosis may create some obstacle by pressure on the vena cava or renal veins, but the effect is slight and more than compensated by lying prone, even in a position of maximum artificial lordosis, and lordosis in addition to the gravity slowing of the venous current rarely causes albuminuria without immobility. Bass and Wessler suggest that only those children react to lordosis by the excretion of albumin in whom the vasomotor system is unable to prevent renal congestion.

The muscular factor aiding the venous circulation is evidently as important as the upright position alone. Without it, the lumbar muscles empty into a renal territory embarrassed by a venous current already slowed by immobility of the leg muscles, with a marked stasis resulting. When this is overcome through mechanical means, as by support of the body in water or in a pneumatic suit, the effect of immobility is overcome.

One of the protections against renal venous stasis is the elasticity of the capsule. An insufficient capsule, a dysharmony of development between the capsule and parenchyma, is supposed to exist in all infants and youths and to a pronounced degree in some children. Consequently, a child showing this debility of renal capsule will be more likely to exhibit an orthostatic albuminuria. Concerning the so-called cyclic albuminurias, which appear and disappear regardless of posture, it may not be possible to separate and analyze the distinct factors in their production; but it is safe to say that on a fixed vasomotor basis there have been temporarily added factors important enough to produce, through their combined effects, an albuminuria.

These factors are neutralized later by some compensating activity of the organism or are themselves withdrawn. Thus we can better understand Dubreuilh's classification as (1) transitory, accidental or acute, (2) chronic without periodicity and (3) periodic, intermittent or cyclic. Thus with the generally accepted disappearance or diminution of albumin following the noon meal, the most obvious factors are a decreased acidity of the urine and an improved venous circulation due to activity of the various viscera and increased mesenteric circulation. Also the decrease of albumin in the afternoon and evening is explained when we learn of a progressive increase of pulse pressure during the day.

In enumerating the factors in the production of this condition, we will accept the vasomotor instability, with decreased pulse pressure on standing, and the description of the type of individual and his reactions which generally accompany it, as present in a large proportion of cases, but not essential, as well as the possibility of small renal lesions; remembering that the albumin of a small organic kidney lesion may be postural in type, owing to drainage.

Altered metabolism, due to intoxication from frequent or chronic infections, must receive consideration. There is increasing emphasis being placed on the influence of infections and intoxications on the respiratory function of the blood and tissues, that is, the exchange of blood gases. It is when considered on this basis that these infections are such prominent clinical features in this group of albuminurias; and, in a majority of the cases coming under our observation, there have been distinctly infected tonsils, adenoids, infected processes about the teeth, or prolonged pulmonary or intestinal infection. Eradication of these infections has seemed to be an important step in the remedial program.

A physicochemical basis probably underlies the explanation of all these factors in the production of variable albuminurias, whether they affect the kidney tissue itself, the proteins of the blood or other tissues of the body. In cases in which the mechanical factors leading to an alteration of pulse pressure are prominent, is it not the asphyxiation of tissues through suboxidation, with resultant production of relative acidity, that alters the blood or other body tissues so that they become filtrable through the kidneys? Similarly, in cases of infection, is it not the intoxication which leads, through suboxidation, to the change in the character of the proteins that permits them to pass through the kidneys?

There must be a distinction between those cases in which the kidney tissue alone is involved by these various factors and those in which the blood and other tissues are involved. At the present stage, our facilities for investigation are not sufficiently developed to make this distinction clear, but the field promises to be fruitful for investigation.

#### TREATMENT AS RELATED TO ETIOLOGY

Experience has taught us that these cases are benefited by hygienic measures which bear direct or indirect relationships to the kidney or to circulation. Among these are the removal of sources of infection or intoxication, sufficient sleep, moderate exercise, fresh air and an adequate, balanced diet, though, within reason, the amount of protein taken is of no immediate importance. Closer analysis shows that, by these procedures, we are removing causes disturbing the normal condi-



tion of the kidneys, improving general circulation of the entire body and restoring the integrity of the blood in its ability to carry and distribute oxygen and nutrition, i. e., establishing normal physiologic efficiency.

That the appearance of albumin in the urine can be controlled by keeping the urine neutral or slightly alkaline we have determined to our own satisfaction. We ascribe this result not to the change in reaction of the urine but to the decreased relative acidity of the body tissues and fluids, of which the urinary reaction is only a consequence. So far, no references to this fact have appeared in the literature on orthostatic albuminuria, but Edel<sup>36</sup> came very close to the question in attempting to show that the development of albumin was prevented by saline diuretics. For this purpose, he used potassium acetate and determined the beginning and end of the diuretic action by the alkalinity of the urine. He does not, however, ascribe the absence of albumin to the alkalinity of the urine or to the decreased relative acidity of the body fluids, but to the increased quantity, decreased specific gravity and decreased coloring matter of the urine. The recent British literature contains many references to the inhibition of the appearance of albumin by calcium lactate, which in ordinary doses has no effect, but in repeated doses of from 30 to 60 grains (2 to 4 gm.) will temporarily prevent an albuminuria which otherwise would appear. As a result, the entire condition is being enthusiastically ascribed to a disordered calcium metabolism, with perversion of coagulation, etc. No references have been made to the reaction of the urine as a result of the medication.

In a number of our cases in which the appearance and disappearance of albumin in the urine closely followed the acid-alkaline reaction, calcium was fed in various forms. Only those calcium salts which neutralized or alkalized the urine were able to prevent the appearance of albumin. The same calcium salts, when given with or following doses of acid sodium phosphate sufficient to prevent this neutralization of the urine, failed to prevent the albuminuria, and other salts, such as calcium chlorid, which permitted the acid reaction to persist, failed entirely to prevent albuminuria. It is probable that the explanation of our observation concerning urinary reactions in relation to albuminuria can be found in the light of Martin Fischer's work. In vitro at least certain degrees of acidity dispose protoplasm to a state of colloid dispersion in which the integrity of the protein is decreased, with a tendency toward actual solution, and a decrease of its solidarity; in other words, an increased permeability. It is highly probable that in the kidney, owing to the combined result of venous stasis resulting from any of the accepted causes, in addition to the local increase of acid produced under such conditions, the integrity of the renal membrane is so far destroyed as to allow the passage of constituents of the blood which normally are held back, and that, by the addition of alkali sufficient to correct the acid condition, the permeability of the renal tissue or the physicochemical condition of the blood is so far restored as to prevent the further escape of albumin. It is also fair to suppose that, in our few cases which did not promptly respond to alkalization, there were factors present sufficient to produce a condition that was not corrected by such alkalization.

That urinary acidity beyond a certain degree is of little importance in the appearance of albumin is shown

by Barach,<sup>39</sup> who examined the urines and blood pressures of numerous athletes before and after exertions, such as a marathon race, track meets and practice and baseball, and concluded that the height of urinary acidity does not determine the presence or amount of albumin, red blood cells or casts, but that these depend entirely on the degree of circulatory disturbance shown, as evidenced by the fall of pulse pressure.

#### SUMMARY

Observations covering approximately forty cases of orthostatic albuminuria indicate that the appearance of variable amounts of nucleo-albumin and serum-albumin in the urine in such cases is analogous to changes taking place in the blood and body tissues.

The condition, which appears most frequently in the young, in certain types of individuals, particularly the undernourished, rapidly growing ones, with unstable venous and vasomotor mechanisms and frequent or chronic infections, is accompanied by a pulse pressure smaller in the upright than in the lying position, is aggravated by immobility, and presages no progressive renal disease.

Repeated and accurate functional tests and blood chemistry observations reveal neither constant deviations from the normal nor constant variations between the upright and horizontal positions.

#### CONCLUSIONS

1. Neutralization or mild alkalization of the urine produces changes in the kidney, blood or body tissues which are followed by disappearance of nucleo-albumin and serum albumin from the urine, by restoring to normal the physicochemical state of the proteins and preventing their escape into the urine.

2. Neutralization may be brought about by administration of various alkaline salts, such as sodium or potassium acetate, or sodium citrate or calcium lactate, and similarly by the vegetables and fruits in the diet that contain alkalizing salts.

3. Other factors influencing this form of albumin in the urine are: circulatory efficiency in the kidney itself or in the body itself, and metabolic efficiency in the blood and body tissues as influenced by other factors than circulation, such as the conditions producing rapid growth in youth, and by infections and intoxications.

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39. Barach, J. H.: *Am. J. M. Sc.* **159**: 398 (March) 1920.

**Conservatism.**—Such is the conservativeness of our species that a new idea requires, often not decades but centuries to penetrate thoroughly the public mind. It is nearly sixty years since Darwin brought the theory of evolution into serious consideration and showed the folly of belief in special creation, yet it is not exaggeration to say that a very large majority of people at the present time do not believe in evolution. It is 250 years since the idea that living organisms do not spontaneously spring into existence from nonliving matter was first promulgated, and nearly sixty years since the last vestige of possibility was torn from the theory of spontaneous generation; yet even today the prevalence of such beliefs as that "horsehair snakes" develop out of horsehairs in water is nothing short of astonishing. It is 120 years since Jenner proved the efficacy of vaccination against smallpox, yet there exist at the present time numerous antivaccination societies whose sole purpose is to denounce vaccination as an impractical and illogical proceeding. How can we expect popular belief in the mosquito transmission of malaria which was demonstrated only twenty years ago?—Chandler: *Animal Parasites and Human Disease*, 1922.



OBSERVATION ON THE RESULTS - OF  
ROENTGEN THERAPY IN CHRONIC  
TONSILLITIS

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Great interest in roentgen therapy has been aroused in recent years by remarkable results in many and various pathologic processes. The enthusiastic claims by some advocates of this method of treating chronic inflammation of lymphoid tissue, particularly the tonsils, has stimulated this summary of the results observed in a series of cases, so treated, occurring in the practice of Dr. C. G. Coakley and myself. The cases have been carefully observed clinically, and pathologic and bacteriologic studies have been made, chiefly at Columbia University, by Drs. W. C. Johnson, Hans Zinsser and J. H. Mueller, for whose help I am indebted.

So far as can be judged from published articles, the effects to be expected from roentgen therapy in chronic tonsillitis is a reduction in size, due to diminution of the lymphoid tissue, and an increase, relative if not actual, of connective tissue, resulting in an opening of the mouths of the crypts and their sterilization by improved drainage. This should result in removal of any symptoms due to mechanical obstruction or absorption of toxins or bacteria. Other lymphoid tissue in the pharynx and nasopharynx is also supposed to disappear. A strong point is made of this, as it is difficult or impossible to remove all of this tissue surgically.

To quote Dr. Witherbee,<sup>1</sup> "The absorption of the lymph tissue in the tonsil, adenoid and lymph tissue of the nasopharynx not only drains the infected crypts, but also leaves only fibrous and connective tissue, which nature utilizes in her defense in all local infections." He gives a table showing the growth of from fifty to a hundred colonies of streptococci from the secretion expressed from the tonsils before one roentgen-ray treatment, and the growth of none from a culture made two weeks later. Also a reproduction is given of a section of a tonsil, showing very considerable replacement of lymphoid tissue by a rather homogeneous substance in a tonsil excised four months after one roentgen-ray treatment. He also states that the final results of roentgen-ray treatment of the tonsils can be determined in any given case only after eight exposures have been made at two week intervals, and two months have elapsed after the eighth treatment. This is a modification of earlier statements, when a minimum of four treatments at two-week intervals was advised, and favorable results were observed before the completion of the treatment.

Roentgen therapy would be the treatment of choice on account of the lack of pain, loss of time from business and the admitted possibility of some more or less dangerous complication of an operation, if the results obtained were satisfactory. Dr. Coakley has felt for some time that these results were not satisfactory, and my own observations and those of others agree with his. He has therefore desired that records of some of his cases be included in this article, to bring the subject to the attention of the medical profession. While it is true that patients who have been really cured by

roentgen therapy might not again come under the observation of a laryngologist, it would be strange, when results were satisfactory, if not a single instance reached the attention of a man with the extensive experience of Dr. Coakley. Dr. F. L. Lederer<sup>2</sup> has observed a series of cases of tonsillar disease treated by roentgen ray and he noted no marked change in their condition. He points out that, when diseased tonsils are causing such conditions as rheumatism, endocarditis and nephritis, the long duration of the course of roentgen-ray treatments might jeopardize the life of the patient.

From our observations, we feel that roentgen therapy, as now advocated, may cause more or less diminution in the size of tonsils or other lymphoid tissue in the pharynx or nasopharynx, but the residue has been observed acutely inflamed, and much increased in size while inflamed. It has been demonstrated that it is the small fibrous tonsil that is as likely to serve as a focus of infection with remote symptoms. The observations on tonsils excised indicate that they are not made free of pathogenic bacteria; that there is no evident increase in connective tissue, diminution of lymphoid tissue, lack of activity of the germinal centers or widening of the crypts. Neither the adenoids nor the hypertrophic lymph nodules on the posterior wall of the pharynx disappear; nor do they change in any appreciable way; and they are subject to occasional inflammations similar to those preceding roentgen therapy. General symptoms, involving the heart and joints, have not been relieved in these cases by roentgen therapy, and, in some of the cases, have improved following an operation some time after roentgen therapy. Dr. Zinsser has called attention to the possibility of bacteria, present in the mouth, rather rapidly invading tonsil tissue between the time of tonsillectomy and delivery of the tonsils at the laboratory. This may be true; but Dr. Witherbee's suggestion as to boiling the tonsil for one minute would tend to discourage the growth of most bacteria, whatever their origin.

The case histories and findings are summarized, to support the conclusions offered. We feel that these should be published, as undue enthusiasm about any therapeutic measure is liable to cause injury to those it is designed to benefit, either directly or by supplanting more effective measures. Until it is more definitely shown that diseased tonsils and other lymphoid tissue in the pharynx and nasopharynx can be eradicated as efficiently by a less unpleasant process, reliance must be placed on surgery.

## REPORT OF CASES

**CASE 1.—History and Operation.**—Mr. P. H. B., aged 29, had had several attacks of tonsillitis and one of quinsy. There were intermittent symptoms of toxic absorption, chiefly of the gastro-intestinal tract. Six roentgen-ray treatments of the tonsils, at two-week intervals, were given in the winter of 1921. The quinsy occurred six months later. The tonsils were removed by Dr. Coakley under general anesthesia, Oct. 11, 1921, with smooth convalescence. When the patient was seen four months later, the general symptoms were improved, and there were six or seven scattered lymph nodules on the posterior pharyngeal wall.

**Pathologic Report.**—The epithelium covering the tonsils, where present, was unusually thick. The germinal layer, of dark-staining cells, was thicker than usual, and sharply demarcated from the superficial cells. Lymphoid tissue was abundant. Germinal centers were large and contained many mitotic figures. Connective tissue septums and capsule were slightly infiltrated with lymphocytes. There was no increase

1. Witherbee, W. D.: New York State J. Med. 21: 14 (Jan.) 1921; also a paper read before the American Electrotherapeutic Society, Sept., 1922.

2. Lederer, F. L.: The Roentgen Ray in Tonsillar Disease, J. A. M. A. 79: 1130 (Sept. 30) 1922.



of connective tissue in or around the tonsils. The crypts contained cornified epithelium and lymphocytes.

**Bacteriologic Report.**—Cultures were taken from the center of the tonsils after careful incision with a sterile knife, and *Streptococcus viridans* was found in both of them. In one of them, *Staphylococcus albus* was also present.

**CASE 2.—History and Operation.**—Mr. W. A. B., aged 57, had had frequent colds, sore throat and sinusitis. He received twelve roentgen-ray treatments of the tonsils from March to September, 1922. No improvement was noted, and a thin secretion remained in the tonsil crypts. Tonsillectomy was performed, Oct. 5, 1922, by Dr. Coakley, under local anesthesia, with smooth convalescence.

**Pathologic Report.**—The crypts were rather large and contained epithelial cells mixed with lymphocytes and polymorphonuclear leukocytes. Surrounding the crypts was a moderate amount of lymphoid tissue with germinal centers. At the periphery of the lymphoid tissue, extending diffusely into the adjacent fibrous tissue, were numerous plasma cells, with a moderate number of lymphocytes and a few eosinophils. Broad bands of connective tissue passed through the tonsils, separating the regions of the crypts with their adjacent lymphoid tissue into what appeared as islands. This was probably only a relative increase of fibrous tissue, due to condensation from loss of lymphoid tissue. There had evidently been a marked decrease in lymphoid tissue, which it did not seem possible to ascribe to treatment, unless the tonsils were known to be distinctly hypertrophic before roentgen-ray exposure. If there had been any necrosis of lymphocytes from the roentgen ray it is possible that the dead cells and nuclear fragments would have been completely removed in the two months which had elapsed since the last treatment.

**CASE 3.—History and Operation.**—Mr. B. L. S., aged 56, suffered rheumatic pains, especially in the shoulders. He also had diabetes. The tonsils were large, with buried crypts. Roentgen-ray treatment of the tonsils was given July 15 and Aug. 10 and 25, 1920. October 25, the tonsils seemed slightly smaller, but the crypts still contained a secretion which showed *Streptococcus viridans* and staphylococci on culture. The pains in the shoulders persisted. Nov. 8, 1922, the patient was still having attacks of arthritis; the tonsils were moderately large, and there were buried injected pillars and crypts yielding a thin secretion. There was no glycosuria. Tonsillectomy was performed, Nov. 14, by Dr. Coakley, under general anesthesia. Convalescence was smooth and the pain in the shoulders improved.

**Pathologic Report.**—The tonsils were covered with normal epithelium. They were surrounded by thick capsules of dense, fibrous connective tissue. The crypts were not dilated, and most of them were comparatively free from evidence of infection. One crypt, however, contained a small amount of pus, and the wall was infiltrated with leukocytes. The lymphoid tissue was moderate in amount, and contained many distinct germinal centers. The change appeared to be, in part at least, what might be expected in a man 56 years of age; slight atrophy of lymphoid tissue and relative fibrosis. Inflammation may have been a factor, but the present evidence of infection was slight. Apparently, there was no change which could definitely be ascribed to roentgen-ray treatment.

**CASE 4.—History and Operation.**—Mr. R. G., aged 50, suffered from malaise, loss of weight and anemia, suggesting malignant endocarditis, but no positive evidence of this was obtained. The tonsils were suspected, as the crypts contained thin pus, and were treated eight times by roentgen-ray at two-week intervals during the fall of 1921. No change was noted except some sore throat, a week or ten days after each treatment. Cultures of the tonsils taken July, 1922, showed only staphylococci; but thin pus was still present in the crypts. Tonsillectomy was performed, July 17, by Dr. Coakley, under local anesthesia, with smooth convalescence. Two months later, the patient had gained 12 pounds (5.5 kg.) and was greatly improved in appearance and vigor.

**Pathologic Report.**—The tonsils were covered with stratified squamous epithelium which showed no abnormal change. The crypts were large and contained many polymorphonuclear

leukocytes, clumps of bacteria and desquamated epithelial cells. The walls of the crypts were in places densely infiltrated with leukocytes. The crypts were surrounded by a moderate amount of lymphoid tissue, with numerous distinct germinal centers. At the periphery of the lymphoid tissue, extending for a variable distance into the connective tissue, were large numbers of plasma cells, with a few polymorphonuclear leukocytes and eosinophils. The tonsillar tissue was surrounded by a thick connective tissue capsule, and several septums of connective tissue separated the masses of lymphoid tissue which surrounded the crypts. There was no definite "scarring" of the tonsils.

**CASE 5.—History and Operation.**—S. B., a youth, aged 17, had had chronic cardiac valvular disease since childhood. He was undersized and underweight and had had chorea and frequent tonsillitis, but no attack in the last three or four years. The tonsils had been treated by roentgen ray five times, eighteen months before. No improvement was noted. The tonsils and a moderately large mass of adenoids were removed, May 3, 1922, by Dr. Babcock, under general anesthesia, with smooth convalescence. Six months later, the patient had made a marked gain in weight, strength and activity.

Cultures showed *Streptococcus viridans* in great numbers in both crypts and tissue, and a few hemolytic streptococci in the crypts.

**Pathologic Report.**—The tonsils showed abundant lymphoid tissue, with numerous germinal centers. The crypts were not enlarged, and contained only a few lymphocytes and red blood cells. There was no fibrosis.

**CASE 6.—Mrs. E. W. C.,** aged 38, underwent incomplete tonsillectomy in Chicago in 1919, a portion of the lower pole being left in the right fossa. Three treatments by roentgen ray failed to produce any appreciable change in this tissue, which was periodically inflamed, in association with colds resembling vasomotor rhinitis. The remainder of the right tonsil was removed May 26, 1922, with apparent cure to date.

**CASE 7.—Mr. C. Z.,** aged 23, had had malaise and irregular, slight fever four or five months when first seen by Dr. Coakley in February, 1920. Occasionally, he had sore throat. The tonsils were moderately large and buried, with cheesy secretion crypts. There was no cervical lymphadenitis. Two treatments by roentgen ray were given in April, 1920. In December, the patient felt somewhat improved; the tonsils seemed smaller, but still contained thick and thin secretion in crypts, showing *Streptococcus viridans* and *Staphylococcus aureus*. The cervical lymph nodes were now palpable. Symptoms recurred, and the tonsils were removed in the fall of 1921. The patient has been well since.

**CASE 8.—W. P. E.,** a youth, aged 17, had had several attacks of acute rheumatic fever with endocarditis. The tonsils and adenoids were removed by Dr. Coakley in 1915. The patient suffered attacks of rheumatism with cardiac involvement in 1918 and 1921, and a fatal attack occurred in 1922. He was in fairly good shape between attacks. He had considerable lymphoid tissue on the posterior pharyngeal wall, which became acutely inflamed at intervals. This was treated by five roentgen-ray treatments during the early spring of 1921 and one in the fall of 1921. The attack in 1922 came on subsequent to roentgen-ray treatment. This also showed no appreciable effect on the pharyngeal lymphoid tissue, which became acutely inflamed with his attacks of rheumatism.

**CASE 9.—I. M. F.,** a boy, aged 11, had three operations on the left mastoid at the age of 2, and there had been occasional discharge since. There was frequent acute rhinitis. An early operation on the tonsils left a small portion of the right tonsil. There was great hypertrophy of the lymph nodules on the posterior pharyngeal wall. He received several treatments by roentgen ray between November, 1920, and March, 1921, without any change being noted except that which occurred before roentgen-ray treatment in that the tissue was more swollen when inflamed than when not inflamed. Colds and attacks of pharyngitis have persisted to the present. The ear, however, does seem improved, but it is hard to tell whether the roentgen ray benefited this or not.

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## EGGS AS A SOURCE OF VITAMIN B\*

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That hen's eggs contain vitamins is evident from experiments conducted long before the importance of these food factors in nutrition was recognized. Thus, in 1891, Socin<sup>1</sup> reported having successfully fed mice on a mixture of starch, cellulose and egg yolk for ninety-nine days, and he believed that they could have continued to thrive on this diet. Following the discovery of experimental polyneuritis in birds, egg products were repeatedly tested, with successful outcome, for their antineuritic potency.<sup>2</sup>

As the white of egg is said to contain no vitamin,<sup>3</sup> the yolk acquires the preeminent interest in respect to this factor. One finds the statement that the yolk is "especially rich" in both vitamin A and vitamin B.<sup>4</sup> Eggs are frequently classed with milk in such generalizations. Our experience with the latter food has shown that its content of vitamin B, while noteworthy, is by no means invariably as large as students have been led to assume.<sup>5</sup> Feeding tests with commercial desiccated eggs showed us that the amounts required to promote growth at a normal rate on a diet adequate except with respect to vitamin B were nearly twice as large as is the quantity needed of a dried green vegetable, such as spinach.<sup>6</sup> Not until the admixture of dried whole egg with a ration of casein, from 11 to 16 per cent., starch from 38 to 52 per cent., butter fat, 9 per cent., lard, 16 per cent., and inorganic salts, 3 per cent., exceeded 15 per cent. of the food was the rate of growth satisfactory. As the solids of the yolk constitute about 70 per cent. of the total egg solids, this means a content of more than 10.5 per cent. of dry egg yolk in the successful feeding tests.

The outcome of these earlier incidental tests was surprising, in view of the impression which we had gained from published statements regarding the richness of the water extract of boiled egg yolk in vitamin B. McCollum and Davis<sup>7</sup> have stated that the water-soluble substances, mostly inorganic salts, and amounting to 4.5 gm., extracted from 200 gm. of dry egg yolk sufficed to render 3.12 kg. of ration efficient for growth in the case of rats on a diet devoid of vitamin B. The extracted product thus represented only 0.14 per cent. of the food—an order of magnitude approaching that requisite in the case of the most potent yeast

extract fractions prepared in our laboratory.<sup>8</sup> Calculated in terms of dry egg yolk, the figures of McCollum and Davis represented an equivalent  $200\frac{1}{3120}$  or 6.4 per cent. of their ration. They themselves state that 5 per cent. of desiccated egg is not sufficient to supply the water-soluble accessory.

As the percentage of a component in a ration gives no adequate quantitative index of its nutritive potency, unless the comparisons are made between equal ingested quantities of food mixtures of equivalent energy value and otherwise suitable, it will be preferable to state our experience in feeding egg yolk as a source of vitamin B to rats in terms of the absolute daily intake. Rats weighing 100 gm., living on a standard food mixture, of which they consumed about 50 gm. per week, have required not less than 0.8 gm. of dried egg yolk a day (equivalent to 10 per cent. of this food mixture) fed apart from the rest of the ration, to secure even an approximation to the normal rate of growth; and in every case the rate of gain was increased when 0.2 gm. of dried brewers' yeast replaced the egg yolk preparation. For the 100-gram rat, an intake of 0.8 gm. of dried egg yolk is equivalent to about 4 gm. of fresh whole egg. As an average sized egg weighs 43 gm., or ten 100-gram-rat doses of vitamin B, and we have found that such a rat requires about 15 c.c. of cow's milk for its daily allowance of vitamin B, a simple calculation indicates that one (average) hen's egg is equivalent to about 150 c.c. of cow's milk in vitamin B potency.

We have prepared a water extract of egg yolk as follows:

The yolks were separated from hard boiled eggs and repeatedly extracted with distilled water. The extracts were then centrifugated, and the fluid was filtered through paper pulp. The filtrate was concentrated and dried in vacuo. In this way, 5.66 gm. of dry egg yolk extract was obtained, in one case, from the moist yolks (415 gm.) of twenty-four eggs, or 1.4 gm. for each hundred grams of moist egg yolk; another lot of eggs yielded 1.5 gm. of dry extract for each hundred grams of moist egg yolk.

A daily intake of 33 mg. of this dried extract product (equivalent to 2.25 gm. of moist or 1.12 gm. of dry egg yolk), fed apart from the ration free from vitamin B, permitted growth at less than normal rate; when 66 mg. of the same product was fed daily as the sole source of vitamin B, the increments in body weight were demonstrated over a period of a month or more to be satisfactory. This dosage is equivalent to about 4.5 gm. of moist egg yolk a day, a requirement somewhat higher than that indicated by our feeding trial with dried egg and egg yolk, and due doubtless to the incomplete extraction of all the vitamin B in the preparation of the residue from the water extract of the yolks, or to the adsorption of some of it on the surfaces with which it was brought into contact in filtration.

## SUMMARY

By extraction of egg yolk with water, it is possible to secure a product comparatively rich in vitamin B, the daily dose required for a 100-gram rat being considerably less than that of the most potent dried yeast hitherto examined. The content of the egg yolk in vitamin B is not large, a daily intake of at least 1.5 gm. of the fresh yolk being required when it furnishes the sole source of vitamin B to a 100-gram rat. The

\* From the Laboratory of the Connecticut Agricultural Experiment Station and the Sheffield Laboratory of Physiological Chemistry of Yale University. The expenses of this investigation were shared by the Connecticut Agricultural Experiment Station and the Carnegie Institution of Washington, D. C.

1. Socin, C. A.: *Ztschr. f. physiol. Chem.* **15**: 93, 1891. Similarly E. V. McCollum (*Am. J. Physiol.* **29**: 127, 1909) states that mice grew well on boiled egg yolk as the sole food.

2. Eijkman, C.: *Arch. f. Schiffs- u. Tropen-Hyg.* **15**: 698, 1911. Cooper, E. A.: *J. Hyg.* **12**: 436, 1912. Steenbock, H.: *J. Biol. Chem.* **29**: xxvii, 1917. Funk, Casimir: *München. med. Wehnschr.*, 1913, p. 2614.

3. Plimmer, V. G., and Plimmer, R. H. A.: *Vitamins and the Choice of Food*, London, Longmans, Green & Co., 1922, p. 149.

4. McCollum, E. V.: *Newer Knowledge of Nutrition*, New York, the Macmillan Company, 1919, p. 81.

5. Osborne, T. B., and Mendel, L. B.: *J. Biol. Chem.* **34**: 537 (June) 1918, **41**: 515 (April) 1920; *Biochem. J.* **16**: 363, 1922.

6. Osborne, T. B., and Mendel, L. B.: *J. Biol. Chem.* **37**: 191 (Jan.) 1919.

7. McCollum, E. V., and Davis, M.: *J. Biol. Chem.* **23**: 181, 1915.

8. Osborne, T. B., and Wakeman, A. J.: *J. Biol. Chem.* **40**: 383 (Dec.) 1919.



whole egg is accordingly not exceptionally rich in vitamin B, when contrasted with other foods already investigated. Judged by the comparative trials on rats, the average sized hen's egg is equivalent in vitamin B potency to about 150 c.c. of cow's milk, or a quart of milk and six or seven whole eggs of the average sort have an approximately equivalent vitamin B value.

## CAPILLARY PERMEABILITY IN ANAPHYLAXIS

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The acute anaphylactic shock in dogs is characterized by a sudden pronounced fall in arterial blood pressure. This fall usually begins about forty seconds after the beginning of the intravenous protein injection. The pressure usually reaches a minimum of about 25 mm. of mercury by the end of ninety seconds. In shocks of moderate severity, the pressure remains at this low level for about twenty minutes, and then gradually increases, reaching normal in from one to two hours, depending on the severity of the reaction. With highly sensitized dogs, injected with relatively large doses of the specific foreign protein, little or no recovery takes place, the pressure remaining at a low level till the death of the animal, which usually occurs in about forty minutes.

This characteristic fall in arterial blood pressure does not take place in dehepatized (Eck-fistula) dogs. This is true, not only for the mildly sensitized dogs previously reported,<sup>1</sup> but also for highly sensitized dogs giving the fatal type of anaphylactic shock. From this fact, we have concluded that the characteristic fall in arterial blood pressure is in some way dependent on liver function. The theory we have proposed to account for this relationship assumes that the characteristic fall in arterial pressure is due to an explosive hepatic auto-intoxication, the formation or liberation of hepatic products having a histamin-like reaction on the extra-hepatic blood vessels.

As a preliminary to the study of these hypothetic, anaphylactic, hepatic internal secretions, we have tested anaphylactic reactions in various isolated canine tissues. It is our hope to find a tissue that will serve as a reliable reacting index for the hypothetic hepatic products. The present report is based on reactions observed in isolated canine lungs. The lungs were tested by perfusion methods.

To make the perfusion test, the inferior vena cava is ligated close to the heart, and an afferent cannula is tied in the superior vena cava. The ascending aorta is then ligated within the pericardial sac, and an afferent cannula is placed in the left auricular appendage. The lungs are now inflated to their midrespiratory volume, and the trachea is clamped. The perfusion fluid is well aerated Ringer's or Locke's solution, with a temperature of 38 C. and a perfusion pressure of from 25 to 30 mm. of mercury.

If the lungs of a normal dog are perfused for about three minutes with Locke's solution, followed by Locke's solution containing from 0.25 to 1 per cent. of horse serum, no recognizable pulmonary reaction takes place. The rate of perfusion flow remains constant on change from the Locke's solution to the dilute serum. When the tracheal clamp is released, the lungs collapse promptly and normally. No frothy fluid escapes from the trachea. If, however, the lungs of a sensitized dog are similarly perfused, very marked pulmonary reactions occur. For example, the rate of perfusion flow, which usually varies from 1,200 to 1,500 c.c. a minute in medium sized dogs, is rapidly reduced to about 300 c.c. a minute. With smaller serum doses, a slight tendency to recovery is occasionally noted after the third minute.

During this reaction, the lungs increase in size and take on a rubber-like consistency. When the tracheal clamp is released, practically no pulmonary collapse takes place. A large amount of clear, frothy fluid escapes from the trachea. If the perfusion is now continued, fluid continues to pour out of the trachea almost as rapidly as it escapes from the efferent cannula.

To us, the most striking feature of these reactions is the marked increase in capillary permeability thus demonstrated. We believe that increased specific capillary permeability will ultimately be shown to be the dominant fundamental physiologic change in protein sensitization, to which all other anaphylactic reactions are secondary. This view is in accord with clinical evidence.

### SUMMARY

If the lungs of a dog previously sensitized to horse serum are perfused with Locke's solution, followed by Locke's solution containing from 0.25 to 1 per cent. of horse serum, these reactions are observed: (a) a 75 per cent. reduction in the rate of perfusion flow; (b) noncollapse of the lungs when the tracheal clamp is released, and (c) the escape of large amounts of fluid from the trachea when this clamp is released.

We believe that the increased capillary permeability thus demonstrated will ultimately be shown to be the dominant fundamental physiologic change in protein sensitization, to which all other anaphylactic reactions are secondary.

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**Medical Aid in Russia.**—A communication from the secretary of Dr. Nansen, from Geneva, November, 1922, states that Dr. Haigh, a member of the epidemics commission of the League of Nations, who visited the provinces of Nikolaieff, Kherson, and Odessa, Russia, describes the serious situation of the medical and health institutions in a report addressed to Dr. Nansen. The hospitals lack everything necessary for good work, drugs, linens, soap and disinfectants are all needed; even clinical thermometers are very scarce. Dr. Haigh fears that the lack of preventive equipment will result in a grave extension of the epidemics of typhoid, typhus and relapsing fever during the winter. The medical staff, badly equipped, and even suffering from hunger, is making a desperate struggle with the situation.—It is stated that the American Relief Administration at one time supplied 1,663 hospitals in Russia, containing 120,858 beds, with supplies; 818 ambulatories, serving daily 75,329 patients, and 819 children's homes totaling 60,031 inmates. In addition, the organization distributed 97,110 boxes, barrels, bales and cases of medical equipment; supplied vaccines and serums for the inoculation of millions of the population, and distributed bed linens, rubber goods, bandages and laboratory equipment. At one time, 11,000,000 were being fed by the administration, and it is expected that it will continue to function during this winter, feeding about 3,000,000 people.

1. Manwaring, W. H.: Intestinal and Hepatic Reactions in Anaphylaxis, J. A. M. A. 77: 849 (Sept. 10) 1921.



PRESENCE OF THE "ALKALINE TIDE"

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In two recent papers we<sup>1</sup> have reported certain conclusions based on the results of studies of the alkaline tide in urine. In neither of these papers is there a detailed presentation of the results on which the conclusions were based; and, since the presence of the alkaline tide has been questioned in a communication<sup>2</sup> recently published in THE JOURNAL, we wish to present a summary of our results and a brief discussion of the methods used. We shall not attempt to discuss the literature dealing with the subject, as that has been discussed in an earlier publication.<sup>3</sup>

The conclusions were based on twenty experiments carried out on nineteen subjects who did not show evidences of acidosis by clinical or laboratory tests, and who were not receiving alkali or acid therapy. The urine voided during a twenty-four hour period was collected in seven portions. From 7 a. m. to 7 p. m. a specimen was taken every two hours, and all voided from 7 p. m. to 7 a. m. the next morning was combined as a single specimen. Each sample was analyzed separately for the amounts of acid and

TABLE 1.—AVERAGE VALUES

Time	Reaction pH	N/10 Acid Per Hr., C.c.	Volume Per Hr., C.c.
7-9	5.56	11.83	59
9-11	5.79	9.59	68
11-1	5.86	10.58	80
1-3	5.45	14.89	54
3-5	5.87	14.65	71
5-7	5.69	13.21	58
7-7	5.50	13.80	42

ammonia which it contained; the reaction (hydrogen ion concentration) of each was determined with a fairly high degree of accuracy. As the excretion of ammonia in this series has been discussed already,<sup>3</sup> we shall confine ourselves here to a discussion of the reaction and acid content.

The amount of acid present was determined by the method of Folin.<sup>4</sup> In this method an aliquot of the urine is titrated with alkali to the first pink color with phenolphthalein after the addition of an excess of neutral potassium oxalate. Calcium phosphate is precipitated when alkali is added to urine; part of the acid (acid phosphate) is therefore removed, so that it is not included in the acid determined by this titration. When a large excess of oxalate is present, the calcium combines with it instead of with the phosphate, and all the acid in the urine can be determined by titration.

The reaction (hydrogen ion concentration) was determined by a method approximately the same as that recently described by Marshall.<sup>5</sup> A series of tubes was prepared, each of which contained 20 c.c. of a solu-

tion whose reaction (hydrogen ion concentration) was known; the differences between the reactions of the solutions in the different tubes was small (0.2 or in some cases, 0.1  $p_H$ ); to each of these tubes a measured amount of an appropriate indicator was added. For each indicator there is a definite reaction at which it shows a maximum development of color, a range of differences in reaction over which it shows differences in tint; these facts determine the appropriate indicator to use in estimating the hydrogen ion concentration in any given range. The indicators used in this work

TABLE 2.—MAXIMUM AND MINIMUM VALUES

Time	Reaction		N/10 Acid per Hour		Volume	
	Max. pH	Min. pH	Max. C.c.	Min. C.c.	Max. C.c.	Min. C.c.
7-9	4.8	6.4	28.2	2.9	245	10
9-11	4.9	7.1	23.3	4.3	205	9
11-1	4.9	7.7	25.3	3.7	325	10
1-3	5.0	6.7	29.7	0.75	143	11
3-5	4.9	7.7	25.0	1.5	208	11
5-7	4.9	8.0	21.6	2.1	173	13
7-7	4.9	6.4	20.1	7.1	92	12

were methyl red for the distinctly acid range, brom cresol purple for the slightly acid range, and phenol-sulphonephthalein for the neutral to alkaline range. Ten cubic centimeters of the urine under examination was diluted to 20 c.c. with distilled water, and the amount of indicator used in the standard tubes was added. The diluted urine plus indicator was then compared with the series of standard tubes in an apparatus (comparator block) designed to correct for the color of the urine. In no instance were urines found outside the range of the indicators used in the standard tubes, but it was often necessary to carry through more than one determination because the correct one of the three indicators was not chosen at first.

This use of different indicators for different reactions is familiar. Many samples of urine are alkaline to litmus but are acid (not alkaline) to phenolphthalein. Again, specimens of gastric juice, especially from patients with achylia, are often alkaline to Töpfer's reagent which are acid to phenolphthalein.

The three tables show the results of the determinations made in this series. The first table shows the average values of the reactions, amount of acid

TABLE 3.—SPECIMENS THAT SHOWED DIFFERENT REACTIONS

Reaction Range pH	Total No.	Time						
		7-9 No.	9-11 No.	11-1 No.	1-3 No.	3-5 No.	5-7 No.	7-7 No.
Above 5.0	10	1	1	1	1	1	2	3
5.5-5.0	58	9	6	8	11	6	10	8
6.0-5.5	33	5	6	4	4	3	4	7
6.5-6.0	23	5	4	1	3	7	1	2
7.0-6.5	8	0	2	4	1	1	0	0
7.5-7.0	5	0	1	1	0	1	2	0
8.0-7.5	3	0	0	1	0	1	1	0

excreted per hour, and of the hourly volumes of urine of all specimens collected during the different periods; the second table shows the maximum and minimum values of the amount of acid, reaction, and volume found for any specimen collected during each period; the third table shows the number of specimens which showed different reactions, arranged in groups not varying from each other by more than 5.0  $p_H$  and the times during the day when these specimens were voided. The amount of acid is expressed as the number of cubic centimeters of tenth normal acid which

1. Hubbard, R. S., and Munford, S. A.: A Comparison of the Alkaline Tide in Urine, with the Results of Fractional Gastric Analysis, Proc. Soc. Exper. Biol. & Med. 19:429, 1922; The Excretion of Acid and Ammonia, J. Biol. Chem. 54:465, 1922.  
2. Benedict, A. L.: "The 'Alkaline Tide' in Urine," J. A. M. A. 79:2021 (Dec. 9) 1922.  
3. Hubbard and Munford (Footnote 1, second reference).  
4. Folin, Otto: Laboratory Manual of Biological Chemistry, New York, 1916, p. 103.  
5. Marshall, E. K., Jr.: The Effect of Loss of Carbon Dioxide on the Hydrogen Ion Concentration of Urine, J. Biol. Chem. 51:3 (March) 1922.



were excreted in an hour, and the volume as the number of cubic centimeters of urine which were eliminated during the same period. The reaction is expressed as " $p_H$ ", that is, as the negative logarithm of the actual hydrogen ion concentration. The figures representing hydrogen ion concentrations are fractions with very large denominators, and the negative logarithms of the values have been accepted as a convenient way in which results may be recorded. The values of this expression increase as acidity decreases (or as alkalinity increases), and decrease as acidity increases.

Table 1 shows the presence of the alkaline tides. The reaction was less acid (more nearly alkaline) during the forenoon and afternoon periods than it was in the morning, at night, or during the period which corresponds to the time when the noon meal was taken. The average figures for the amount of acid excreted show a similar decrease in the morning and again in the afternoon. The change in the afternoon was slight, possibly because the acid produced from the catabolism of the food taken in the morning obscured the tide. The figures for the average volumes of the specimen show that this change in the amount of acid was independent of changes in volume, for during the forenoon period, when the amount of acid excreted showed a marked decrease over that excreted in the morning, the volumes of the specimens increased.

Table 3 shows that the number of specimens which showed alkalinity or decreased acidity increased during the forenoon and afternoon periods, as did the average alkalinity of the specimens. There were only eight samples out of the 142 collected which gave an alkaline reaction—that is, which showed a  $p_H$  greater than 7.0, the reaction of absolutely pure (negative conductivity) water. These specimens would all have given an alkaline reaction with litmus; but only one of them, which showed a  $p_H$  of 8.0, would have given a slight pink color if tested with phenolphthalein. Specimens were not tested with phenolphthalein; the statements just made are based on the tables given on page 74 of the war manual.<sup>6</sup>

A study of the average values of the reactions, and hourly excretion of acid in these cases, and of the times at which alkaline and nearly alkaline specimens of urine were voided shows that the reduced acidity following meals, commonly known as the "alkaline tide," was shown. This accords with the observations made by many others.<sup>2</sup>

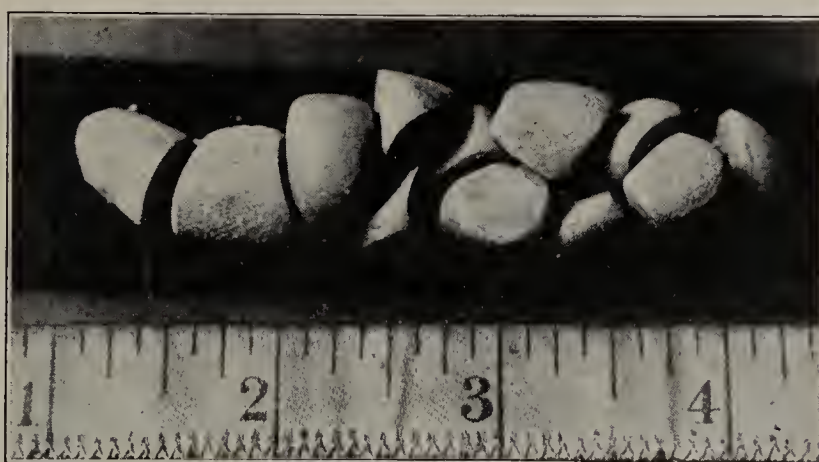


Fig. 1.—Twelve cystin stones from right ureter.

## CYSTIN CALCULI: A COMPLEX SURGICAL PROBLEM

REPORT OF CASE OF MULTIPLE CYSTIN CALCULI \*

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Cystin calculi are comparatively rare. Until 1882 only fifty cases of cystinuria had been reported in the literature. Kretschmer,<sup>1</sup> in his comprehensive study of the subject of cystinuria and cystin stones, found reports of only 107 cases of the stones, including two cases of his own, which occurred in twin boys, aged 9 years. The chemical examination of these two cases demonstrated that they were pure cystin, the diagnosis having been made in each case before operation. Both patients had vesical stones.

Watson and Cunningham<sup>2</sup> report one case of cystin calculus in thirty-two cases of cystinuria, Morris,<sup>3</sup> two in seventy-seven, and Sir Henry Thompson three in 114 cases. That cystinuria is a constitutional problem and the etiologic factor in cystin calculi is well known.

According to Abderhalden,<sup>4</sup> "the metabolism of the cystinuria patient is always normal, and urinary stones are frequently found in the disease." That these stones may be multiple and located in several portions of the urinary tract simultaneously is quite evident from the case here reported.

Cystinuria tends to run in families, there having been found in twenty-two cases compiled by Poland a group of ten occurring in four families. The disease has also been found in three successive generations.

From the diverse views appearing in the literature, it is evident that there is little known as to the etiology of cystinuria, and much confusion as to the frequency and character of stones occurring in this disease.

Kayser<sup>5</sup> says:

I can find no figures showing the relation of cystinuria to cystin calculi, but the impression is that it is usually accompanied by calculus formation. This may be due to the fact that the cases unassociated with calculus formation escape notice, as the metabolic error seems to be accompanied by no other serious or constant complication.

The case here reported is presented with the hope that it may be an aid in the final solution of this intricate problem.

### REPORT OF CASE

Miss R. B., aged 21, was referred by Dr. T. R. Love for acute appendicitis, with a provisional diagnosis of cystinuria

\* Read before the Western Surgical Association, Minneapolis, Dec. 8, 1922.

1. Kretschmer, H. L.: Cystinuria and Cystin Stones, *Urol. & Cutan. Rev.* **20**, No. 1 (Jan.) 1916.

2. Watson, F. S., and Cunningham, J. H.: Diseases and Surgery of Genito-Urinary System, Philadelphia, Lea & Febiger **2**: 107, 1908.

3. Morris, Henry: Surgical Diseases of the Kidney and Ureter, Chicago **2**: 58, 69, 1901.

4. Abderhalden, Emil: Further Contribution to the Knowledge of Cystin Occurring in the Urine and Urinary Stones, *Ztschr. f. physiol. Chem.* **104**: 129-132, 1919.

5. Kayser, L. D.: Personal Communication to the author.

6. Laboratory Methods of the United States Army, Medical War Manual 6, Philadelphia, 1918.

**Correct Estimate of One's Own Surroundings.**—It is so difficult to form any correct estimate of one's own surroundings, largely on account of our very familiarity with them, that historical students have generally evaded this responsibility. They have often declared it was impossible to do so satisfactorily. And yet no one will ever know more than we about what is going on now.—Robinson: *The Mind in the Making*.



on account of the presence of cystin in the urine. Her average weight was 119 pounds (54 kg.). The family history was unobtainable, as she had been adopted when an infant. Menstruation began at 14 years, and was regular, of twenty-eight day type; the flow was profuse for six or seven days, with much clotting. The patient was always delicate as a child,



Fig. 2.—Cystin stone in left kidney.

being bottle fed and having malnutrition in infancy. She had not been active, and did not play as other children. She passed blood in the urine several months at the age of 4 and again at 10. The appetite was usually good. She was especially fond of meat, but ate no butter, or milk containing cream. For several years she had had painless swelling of the feet and ankles. She had influenza in 1918. In the early part of 1919 the left foot and ankle were in a cast for several weeks. For the last year she had had a feeling of distress (pain) in the right side. The eyes filled with tears occasionally during urination, but there were no other urinary symptoms except the hematuria noted. There were no gastric symptoms, and no constipation or diarrhea. The patient usually drank only a little water. June 24, 1921, she was taken with severe pain in the right side, but no nausea or vomiting. The pain gradually became worse, although the temperature and the leukocyte count were within normal limits. Rigidity was well marked, and was high up and far out to the right, suggesting a retrocecal appendix since it was too far out for the ureter. Cystin crystals had been found in the urine, but on account of the location of the pain and the fact that the patient kept her right leg elevated for comfort, the diagnosis of appendicitis seemed more reasonable than that of cystin calculus.

The abdomen was opened by a median incision. Fluid escaped, and a moderately acutely inflamed appendix was removed. A series of twelve stones was palpated in the right ureter, extending from a point 2 inches above the brim of the pelvis downward to the ureterovesical junction. As the patient was in good condition, an intraperitoneal opening was made into the ureter, and with light common duct forceps, ten stones, each approximating 1 cm. in diameter, were removed. Two at the ureterovesical junction beyond reach were pressed upward, along the ureter, by the hand of an assistant placed in the vagina. When they came within reach of the operator's hand within the abdomen, they were stripped upward to the opening, from which they were successfully removed (Fig. 1).

A probe passed upward within the lumen of the ureter then disclosed a stone in the right kidney, which on palpation

gave evidence of being of unusual size and located above the pelvis of the kidney. Further operative work was not done at this time. The ureter was closed; the ureteral mucosa was infolded and sutured with plain catgut; the margins of the peritoneal coats were everted and also sutured with plain catgut. A strip of soft rubber dam was then placed in close apposition to this sutured area, but not in contact with it, and the abdomen was finally closed. The rubber drain was removed on the fourth day, and the wound healed by first intention as though merely an interval appendix operation had been performed. The patient returned home on the fourteenth day.

The pathologist, Dr. W. S. Dennis, reported a mild grade of acute appendicitis, and stated that the twelve calculi were composed of a central core with two distinguishable layers surrounding them. The layer adjoining the core was

BLOOD CHEMISTRY

	Mg. to 100 C.c.	Normal
Nonprotein nitrogen.....	33.3	30 to 35
Urea nitrogen.....	20.0	12 to 15
Creatinin .....	1.0	1.25
Sugar .....	80	80 to 100

yellowish gray, while the outer layer was more grayish and slightly rough. The consistency of the mass was uniform, and was easily scraped with a knife blade. Chemical analysis of the two layers and central core revealed that the scrapings burned on platinum with a bluish flame and gave off a sharp odor. The scrapings were dissolved in ammonia, and on evaporation of the ammonia, six sided, thin, transparent crystals formed which, morphologically, were identical with cystin crystals. The total weight of the twelve stones was 14 gm.

Following this, a series of roentgenograms of both kidneys and ureters was made, one stone being found in the left kidney and two in the right with both ureters negative (Figs. 2 and 3).

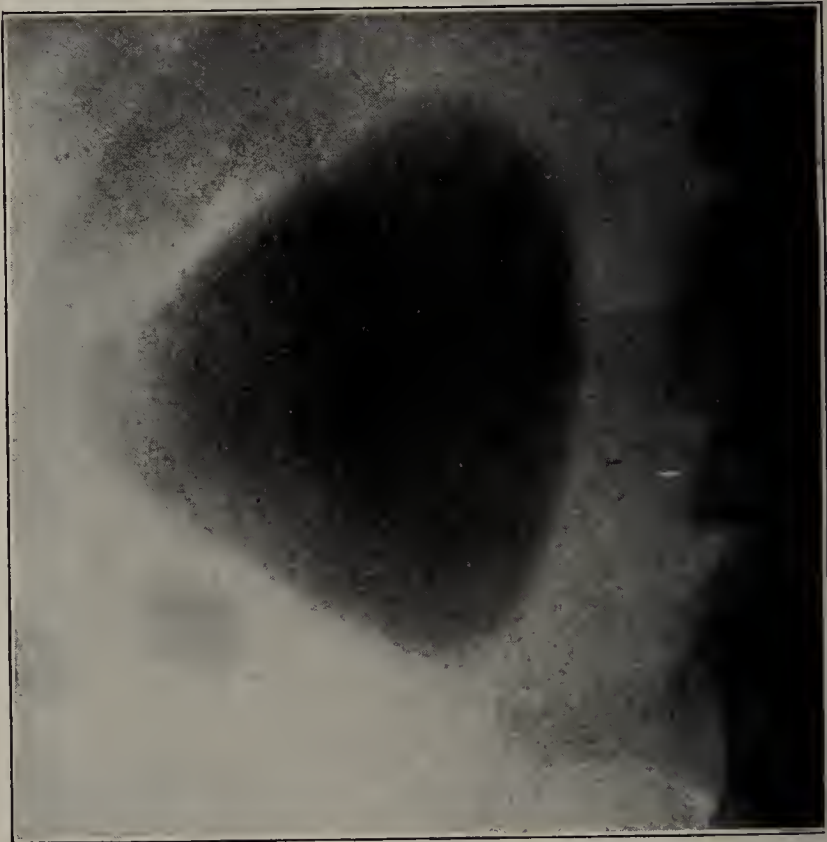


Fig. 3.—Cystin stones in right kidney.

Plans were then made for the removal of the stones from both kidneys. Feb. 12, 1922, a blood chemistry and phenol-sulphonephthalein test was made for the purpose of operating on the better functioning kidney first. The phenolsulphonephthalein test resulted in elimination of 20 per cent. from the left kidney in thirty minutes, and less than 5 per cent. from the right kidney in the same length of time.



At this time her weight was 108 pounds (49 kg.), and she was complaining of weakness and sleeplessness, with a drawing sensation in both flanks when urinating, but without smarting and burning. There was constant pain and soreness in the area over both left and right kidneys and in the back, and constipation had prevailed since the first operation. She had been on a limited protein diet, hoping by this means to curb further cystin concretions.

She returned to the hospital, February 14, and a stone was removed from the pelvis of the left kidney through an opening in the kidney pelvis. This was quite difficult, owing



Fig. 4.—Cystin stones from right kidney, weighing 50 gm.; smaller cystin stone from left kidney, weighing 9 gm.

to the size of the stone, and a piece of fascia and fat was used as a flap to cover this rent in the pelvis after it had been sutured with plain catgut. Drainage was used and continued for ten days, the incision finally closing on the fourteenth day. The patient returned to her home on the seventeenth day.

Although thirteen stones had already been removed from the right ureter and the left kidney, a problem was still present in this case, because of the large and medium sized stones remaining in the right kidney, and a right renal efficiency which had been very low.

The left kidney was now coming up to its normal functional test, however. April 22, the patient was again placed in the hospital for her final operation, and the same Mayo incision was made on the right side as had been made on the left, care being taken to duplicate the curve in order that there might be symmetry in the scars. The right kidney was then exposed.

In this instance it proved necessary to remove the two stones from the cortex of the kidney, as these stones were located in this portion of the right kidney. A vertical incision was made from the convex border on the posterior aspect down to the pelvis. The cortex here was but one-fourth inch in thickness, owing to the enroachment of the stones on the parenchyma.

Delivery of the stones was easily made, the capsule sutured with plain gut, and drainage instituted as before, the patient leaving the hospital, May 1, eight days after the operation. All discharge disappeared after the thirteenth day (Fig. 4).

Only once during any of the operations did the temperature go above 101, and this occurred on the third day after the appendectomy and the simultaneous removal of the ureteral stones. This fact would suggest that operation in cases of cystin calculi can be done with reasonable safety, since cystin calculi are due to perverted metabolism and are not associated with or the product of infection.

The left kidney stone weighed 9 gm., the right kidney stones, 50 gm., and the right ureteral stones, 14 gm., a total of 73 gm.

Since the third and last operation, I find that the urine still carries heavy deposits of the cystin crystals. Three major operations on a woman, aged 21, for the removal of fifteen large stones, involving both kidneys and one ureter, constitute, in my judgment, a complex surgical problem.

Empire Building.

## AN UNUSUAL CASE OF TRAUMATIC URETHRAL STRICTURE\*

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BALTIMORE

The treatment of injuries to the urethra is one of the most interesting fields of the surgery of the genito-urinary tract, and it is well recognized that there are few cases which require a nicer choice of operative procedure and, especially, more careful postoperative treatment, if satisfactory and permanent results are to be obtained. In most of these cases, the diagnosis is, of course, self-evident, and the extent and location of the injury can be accurately determined by simple diagnostic methods, so that the indications for operation are usually quite definite. The aim of the operation should, of course, be complete restoration of function with a minimum of scar tissue formation. Cicatricial contraction along the course of the urethra is very difficult to prevent, and it is the chief cause of the disappointing results which so often follow operation in this type of case.

When a recent injury to the urethra is first seen, it is most important to determine, as far as possible, the exact extent of the injury and any existing complications. Injury to the urethra, however, is usually accompanied by injuries to other nearby structures, and, in the majority of cases, instrumental examination is quite impossible. Prompt operative interference should be undertaken at once to control the spread of extravasation; attempt should be made to repair the torn urethra, and ample provision for drainage must be provided.

The after-care of the wound requires constant and painstaking attention, if one is to avoid excessive formation of scar tissue, which so often leads to dense traumatic strictures of the urethra. Infection must

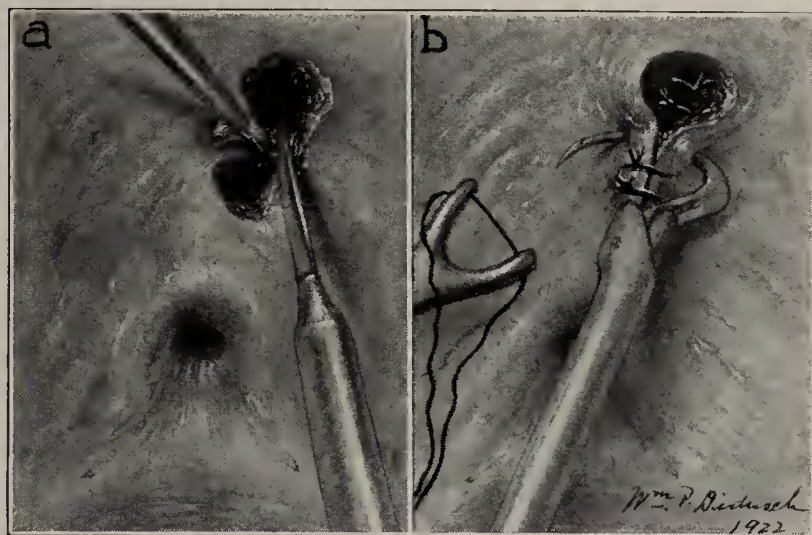


Fig. 1.—a, excision of margins of fistulas and intervening septum; b, closure of vesical orifices of fistulas in two layers.

be actively combated, and every effort must be made to establish normal flow of urine through the urethra and to avoid a persistent perineal fistula, which, together with infection, is one of the most important factors in the production of scar tissue. Frequent irrigations of the perineal incision and of the fistula with the new mercurial antiseptic solutions, such as mercurochrome-220 soluble or potassium permanganate, has, in our experience, led to a much more rapid healing

\* From the Brady Urological Institute, Johns Hopkins Hospital.



of the incision and closure of the fistula, provided, of course, that the urethra has been properly repaired.

In cases of long standing traumatic stricture, great care must be exercised to obtain as much preoperative knowledge as possible in regard to the nature and the extent of the injury. In most of these cases, however, the urethra will be found to be impermeable, so that instrumental examination and endoscopic and cystoscopic studies are impossible, and the operator must be guided almost entirely in his choice of procedure by the operative findings.

Most commonly, a constricted, tortuous urethra is found at operation, the extent of the stricture depending on the injury and on the amount of scar tissue present. In these cases, increasing difficulty in urination, and sometimes complete obstruction, is invariably present. Incontinence following trauma to the urethra results usually from a very extensive injury which has involved both the internal and external vesical sphincters, with either destruction of these sphincters or their fixation in scar tissue. A recent unusual case of incontinence following extensive injury to the urethra, in which the true cause of the incontinence was not recognized prior to operation, presented many unusual and instructive features, and the excellent result obtained is an illustration of what can be accomplished by the proper choice of operative procedure and by painstaking after-care. This case has already been briefly reported by Dr. Young,<sup>1</sup> but the later history of the case is so instructive that a more detailed report has been undertaken.

#### REPORT OF CASE

**History.**—J. F., referred, March 17, 1922, complaining of incontinence of urine following an injury sustained three years previously, gave no history of venereal disease and had never had any urinary symptoms prior to his injury. In November, 1919, while following his occupation as telephone lineman, a pole fell with him, with a resultant fracture of the right ischiopubic ramus and severe injury to the perineum. An external urethrotomy was done immediately, and the bladder was drained by a perineal tube. A persistent perineal fistula and complete incontinence of urine resulted, so an external urethrotomy was performed in May, 1921. As a result of this operation, the perineal fistula closed temporarily, but incontinence persisted. The fistula, however, soon reopened and for the last four months the patient had had increasing difficulty in starting urination, with overflow incontinence. During this time, he had been using a catheter almost daily and had noticed more and more difficulty in introducing it. Sexual power had been destroyed as a result of the accident.

**Examination.**—The patient was a sparely nourished but healthy looking man. No abnormalities were revealed on general physical examination. The external genitalia were normal. In the perineum, there was a broad scar midway between the anus and the scrotoperineal juncture, in the

center of which was a raised projection of granulation tissue about a small fistula.

On rectal examination, no abnormalities were noted except marked adhesions and infiltration about the membranous urethra and the apex of the prostate.

A catheter met some irregularity in the prostatic urethra but finally passed, and found 300 c.c. residual urine. The bladder was filled with thorium solution, and the cystogram revealed a large dilated bladder, with regurgitation of the solution into the posterior and anterior urethra. With the patient standing, the fluid dribbled out of the urethra, and he was in no way able to control it.

On cystoscopic examination, study of the vesical orifice revealed a smooth and normal outline anteriorly, to the left and posteriorly. On the right side anteriorly, an irregular cleft was seen, and it was possible to draw the cystoscope out into the urethra for a distance of several centimeters and still get a good view of the surface. Numerous ridge-like projections were seen in this cleft, the whole giving the appearance of an old contracted scar. The trigon was not seen. The bladder mucosa, aside from slight trabeculation, was normal.

As a result of the cystoscopic findings, it seemed evident that as a result of the accident, the internal sphincter had been torn completely through on the right side of the orifice.

**Operation.**—Suprapubic cystostomy was undertaken, March 23, 1922, with the object of repairing the injury to the internal sphincter. With the bladder opened, two orifices were immediately encountered on the anterior bladder wall, separated from one another by a thick bridge of tissue. About 2 cm. below the lower orifice another opening was found, which was readily recognized as the true prostatic orifice. The trigon could now be seen in proper relationship, and the ureteral orifices identified and seen to function. These relations can be plainly seen in Figure 1a.



Fig. 2.—Longitudinal section showing preprostatic medical urethral fistula with two orifices in the bladder; obliterating stricture at the apex of the prostate.

With the finger in the true orifice, it was found to end blindly about 2 cm. from the surface. A large sound introduced through the urethra entered the bladder through the lower of the two anterior openings. This sound was gradually removed until its tip could be felt by the finger in the blind prostatic urethra, from which it was separated by a fairly thick septum of tissue. This septum was incised and the sound forced through, thus joining the anterior to the blind posterior urethra somewhere in the region of the apex of the prostate.

The urethra thus reconstructed was dilated to No. 30 F.; as much as possible of the scar tissue at the site of the junction was excised, and a large catheter was fixed in place in the urethra. The bridge of tissue between the two anterior openings was then excised and the fistulous tract followed down to the urethra, with which it was continuous in the region of the apex of the prostate. This tract was then excised as thoroughly as possible with knife and curet, and closed, as shown in Figure 1b, by two layers of chromic catgut. The placing of the deeper sutures would have been impossible without the use of the boomerang needle, described by Dr. Young.<sup>2</sup> The bladder was then closed in the usual way about a large tube.

**Outcome.**—The postoperative convalescence was somewhat slow, but urination without obstruction and with perfect con-

1. Young, H. H.: The Operative Cure of Incontinence of Urine, with Illustrated Cases, *J. Urol.* 8: 361 (Nov.) 1922.

2. Young, H. H.: An Operation for the Cure of Incontinence of Urine, *Surg., Gynec. & Obst.* 28: 84 (Jan.) 1919.



trol was established on the thirty-first day. The urethra was dilated at intervals. Following one of these treatments, a right epididymitis developed, which further delayed progress.

The patient was discharged, June 16, fifty-four days after operation, with the suprapubic wound still leaking small amounts of urine at intervals. He was able to void with perfect control and without difficulty about every four hours.

It was evident that, as a result of the accident, the urethra in this case had been torn completely across somewhere in the region of the apex of the prostate. At the same time, a tear had occurred in the bladder wall, the urine finding its way out through this avenue, and, in the process of cicatrization, this fistulous tract had become connected with the anterior urethra. In the meantime, the prostatic urethra had been completely obliterated by scar tissue. These relations can be best seen in Figure 2.

The subsequent history of this case is of especial interest, as it so well illustrates the difficulties which may occur from contraction of the scar tissue which had been left in the region of the membranous urethra.

At the time of operation, the question of the advisability of doing an external urethrotomy with resection of scar tissue was considered, but, on account of the duration of the operation and the probability that the urethral constriction could be controlled by subsequent dilation, it was considered best to do nothing further.

*Subsequent History.*—A few days after the patient arrived at his home, the suprapubic fistula closed, and the patient was in excellent condition for several weeks. He then began to experience increasing difficulty in urination, and the fistula reopened at intervals. The urinary stream became smaller and smaller, and the patient had several attacks of acute retention, which were relieved by the opening of the fistula.

He returned to the hospital, September 19. Examination revealed the presence of a small suprapubic fistula in the middle of the old scar. The patient was able to express a few drops of urine through the urethra by straining, but a filiform encountered a dense stricture in the region of the membranous urethra and could not be introduced into the bladder.

*Second Operation.*—September 20: External urethrotomy was performed in the usual manner, following the technic described by Cecil,<sup>3</sup> in which methylene blue is used as a urethral injection to facilitate the exposure of the tortuous urethral canal. The operation was rendered somewhat more difficult by the fact that the usual landmarks of the perineum were distorted by scar tissue. As much as possible of this scar tissue was excised, and the urethra was reconstructed over a large catheter introduced through the anterior urethra into the bladder.

*Outcome.*—Following operation, the patient made an uninterrupted recovery, and the suprapubic fistula closed firmly in a few days. After removal of the catheter on the seventh day, the patient was able to void a stream of normal size and force, and a small perineal fistula healed on the fifteenth day.

Cystoscopic examination revealed a normal prostatic orifice, with slight hypertrophy of the trigon. The ureteral orifices were normal, and the bladder mucosa showed slight trabeculation, with depressed scars in the region of the suprapubic incision.

The patient left the hospital on the twenty-fourth day, with suprapubic and perineal wounds firmly healed. He was able to void a good stream of urine at normal intervals.

In a letter received three months after operation, the patient states that he has had no further difficulty in urination, has normal control and has been able to take up his former work.

## COMMENT

This case was most instructive to all who saw the patient. The distressing nature of the injury had had a marked psychic effect on him which rapidly disappeared with the restoration of normal urinary flow. A permanent ultimate result was not obtained until the urethra had been freed by the excision of the excess of scar tissue by which it was constricted.

It is interesting to note that there had been a total destruction of the patient's sexual powers as a result of the accident. This phenomenon was probably caused by laceration of the nerves in the posterior sheath of the prostate and by direct injury to the verumontanum and ejaculatory ducts. Although the patient reported a distinct improvement, it seems probable that a complete restoration of normal sexual function cannot be expected, in view of the extensive injury which had been suffered by the prostate, ejaculatory ducts and verumontanum.

THE TREATMENT OF OLD, UNUNITED  
FRACTURES OF LONG BONES

WITH SPECIAL REFERENCE TO THE USE OF THE  
OSTEOPERIOSTEAL GRAFT \*

HENRY BASCOM THOMAS, M.D.

CHICAGO

Of the great number of factors of importance in the technic of transplantation in ununited fractures of long bones, only four will be mentioned here:

1. The length of time which should elapse between the healing of a compound infected fracture and the time of transplantation.
2. A method of fixing a transplant in selected cases without screws, pins or suture.
3. The use of the periosteal-compacta transplant, or wafer graft.
4. The care of the hard ends of an old ununited fracture.

WHEN TO TRANSPLANT IN FORMERLY INFECTED  
WOUNDS

It is said that mild infection stimulates osteogenesis and thus favors repair; but the latent infection present in the majority of cases of healed compound ununited fractures threatens the success of transplantation. If it is not molested by trauma or operative interference, it generally gives no trouble and will remain latent even when it is situated within or extremely close to the operative field. If it is cut or torn into, however, it is liberated from its encapsulation, a flare-up results, and in most instances the operative repair is a failure.

During the war it was at first considered safe to open a formerly infected fracture defect for repair six months after closure of the wound; but in many cases in which operation was performed at the end of that length of time by what was believed to be a faultless technic, severe infection resulted. Therefore, the time was extended to a year, and as a further precaution the operation was performed in two stages. In the first stage the bed was prepared for the transplant in the fractured bones and the wound then closed. A few days later—usually five, if all went well—the

3. Cecil, A. B.: A Method of Performing External Urethrotomy in Impassible Strictures, J. A. M. A. 60: 1606 (May 24) 1913.

\* From the University of Illinois College of Medicine, and the Orthopedic Department of St. Luke's Hospital.



second stage, the placing of the transplant, was done. If infection set in, the wound was opened wide and irrigated with surgical solution of chlorinated soda (Dakin's solution). It was found that the prospects of success were greatly improved if, before the first stage of the operation, a greater blood supply was gained by removing all scar tissue and sliding thick, well-vascularized skin over the area thus denuded.

A case in which operation was performed successfully in the presence of unrecognized encysted infection was a fracture of the ulna treated by a stage operation at Camp Upton in March, 1919. The tentatively prepared sutured wound remained clean, and the transplant from the tibia was successfully placed. Three weeks after the operation the patient was sent to Plattsburg, and the operator was transferred to Fox Hills. Four months later, after a wrestling match which resulted in

graft in a second two-stage operation revealed that one end was broken near its insertion in the radius. Very near this fracture, and within a quarter of an inch of the previous incisions, was a very small area of encysted pus which undoubtedly had been in the

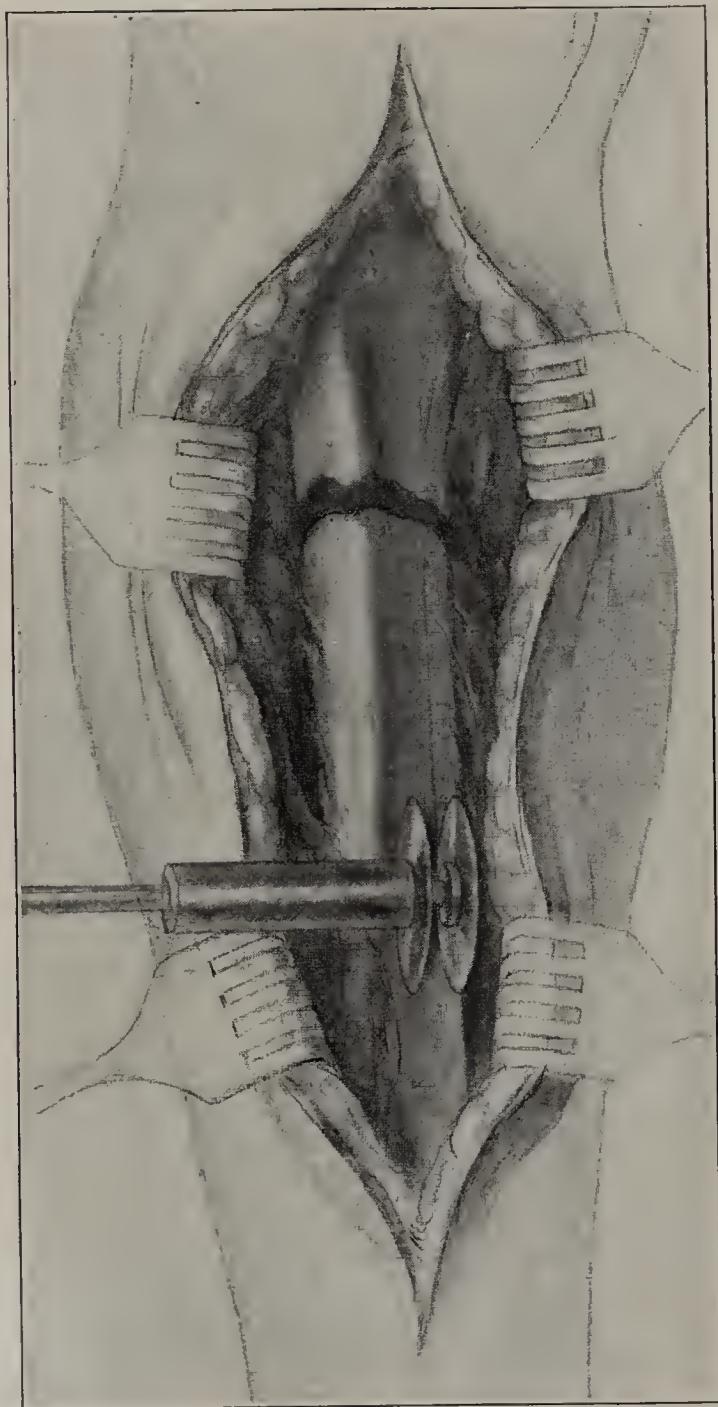


Fig. 1.—Double saw marking out the width of the proposed bed over and near the ends of the ununited fracture. The ebony bone has been only slightly disturbed in preparation. To remove this bone for the graft, the single saw is kept precisely on the guiding line so that the bed will be smaller than the graft. The graft is obtained by sawing on the outside of the guiding line. We could easily make a sliding graft here, using no bone from the opposite leg, but it would be loose-fitting, involving the use of screws, or wedges or pegs of bone for fixation, and would have the disadvantage of the presence of ebony bone. The wider tight-fitting bone from the opposite leg is therefore preferable.

fracture of the transplant in the arm and of the leg from which it had been taken, the patient was transferred from Plattsburg to Fox Hills. Exposure of the

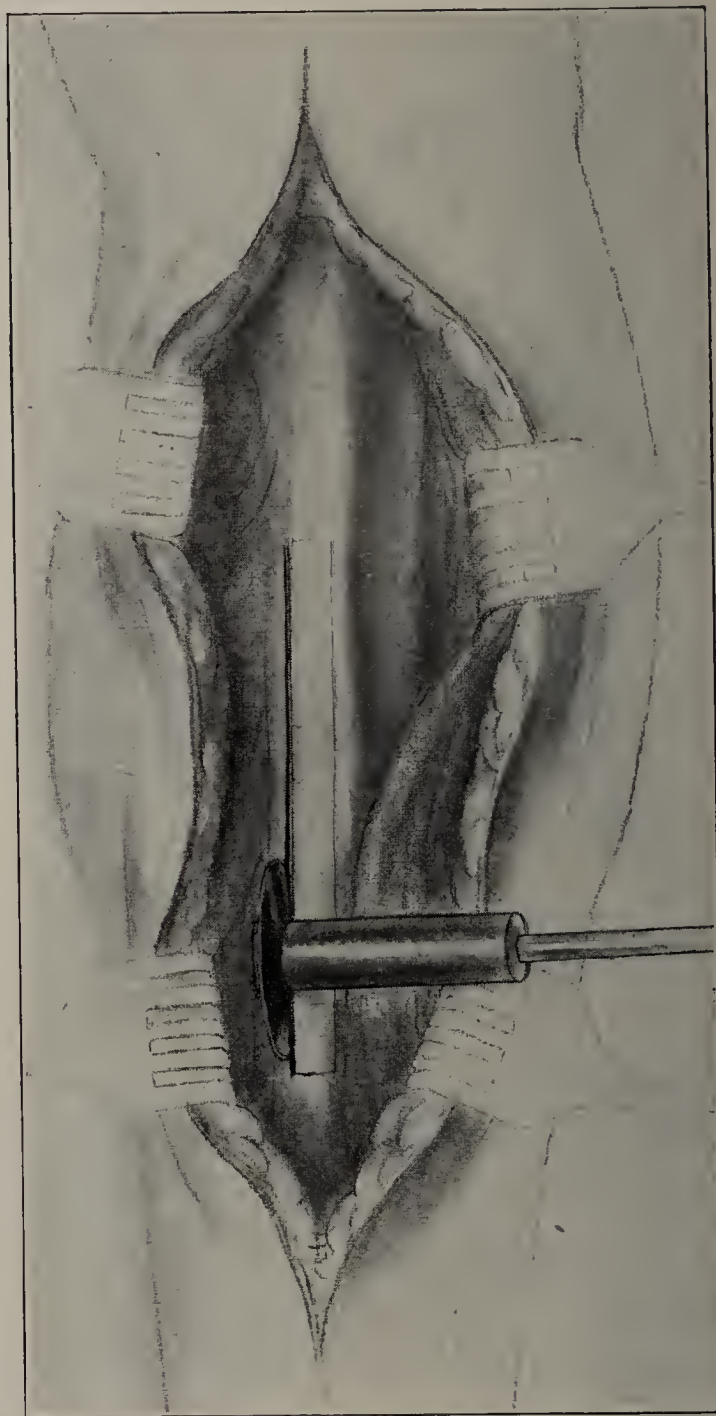


Fig. 2.—Single saw removing the graft as outlined by the double saw. The cuts are made outside the guiding lines. The cuts to free the ends and the opposite side will also be made in the same manner in order to make the graft larger in all dimensions than its bed.

field at the two previous operations but had not been disturbed either then or during the wrestling match.

After this experience, operation and manipulation in the preparation of transplant beds were restricted to the minimum. The ends of old fractured bones were no longer dug out, freed and exposed as formerly, unless this was strictly necessary. There was no cleaning away of old callus. One fourth of the surface of the bone was exposed very gently and with the least possible disturbance of the surrounding soft tissues and bone callus. By such a technic, virulent bacteria were not released, and the successful results of operative bone repair were greatly increased.

#### TRANSPLANTS IN SELECTED CASES FIXED WITHOUT SCREWS, PINS OR SUTURE

In the effort to reduce the trauma of the tissues to the minimum, attempts were made also to avoid the



boring of holes for sutures, pegs or screws with which to fix the transplant. In making the bed for the transplant, the exact size of the proposed graft was marked out superficially with the twin saw (Fig. 1), and these markings were followed exactly with the single saw (Fig. 2). In taking the graft we varied the technic by guiding the single saw along the outer border (Fig. 3) of the lines marked off by the twin saw. The resulting graft was therefore slightly broader than its bed, and could be forced into it so snugly that no further fixation was necessary. The success of this technic was particularly gratifying in those cases in which the ends of the fractured bones were old and hard, but in fair to good alinement. The hard bone made a bed with strong side walls between which the graft could be forced safely and tightly.

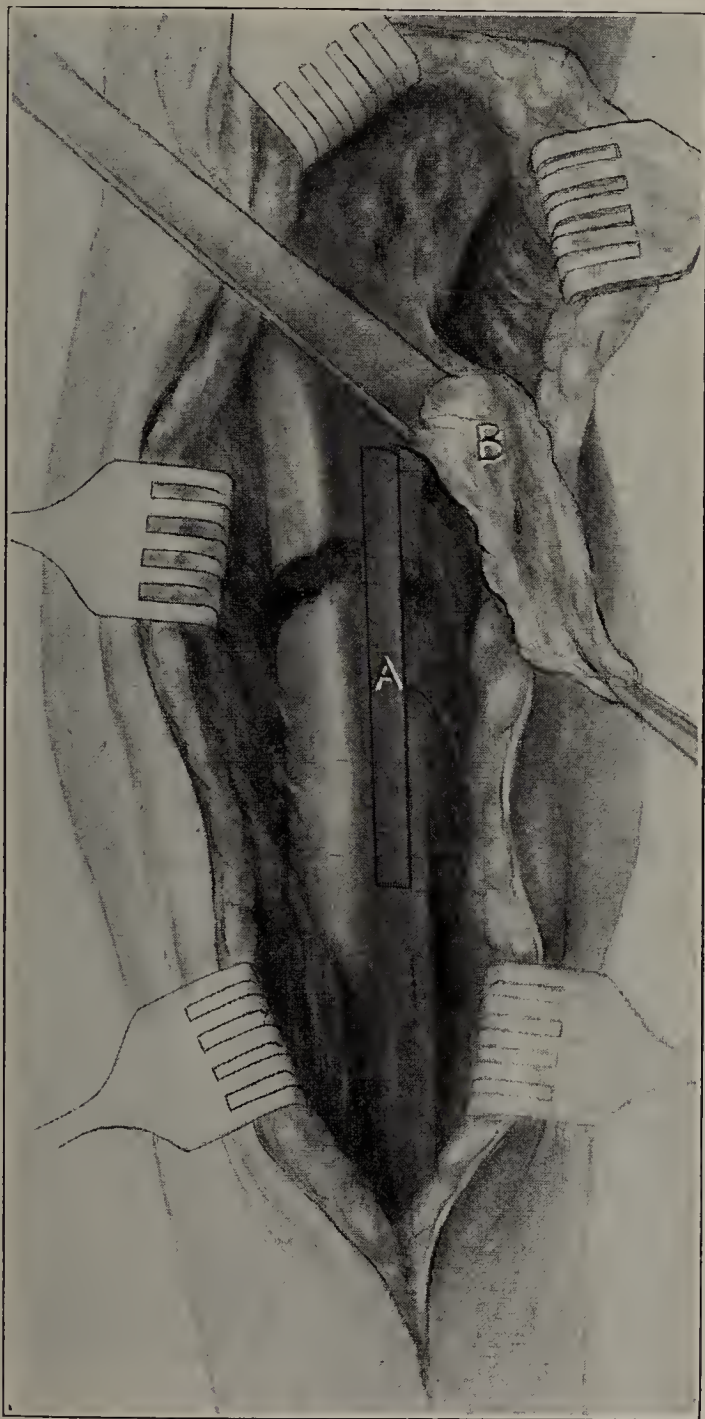


Fig. 3.—A, the slightly wider and longer graft, placed in its smaller bed, is wedged in; no screws, pegs or side chips are needed; B, removal of the periosteal wafer graft from the upper inner side of the tibia.

#### THE OSTEOPERIOSTEAL OR WAFER GRAFT

Of great value in stimulating osteogenesis, especially in the neighborhood of ebony bone, is the periosteal-compacta, or wafer graft, a graft of periosteum with a thin layer of the underlying bone. It was my pleasure to see Chutro use this method of bone repair when he worked in New York City for the government at the

close of the war. The results in war wounds were most gratifying.

Such a graft can often successfully take the place of a bone transplant, thereby eliminating much trauma and decreasing the chances of infection.

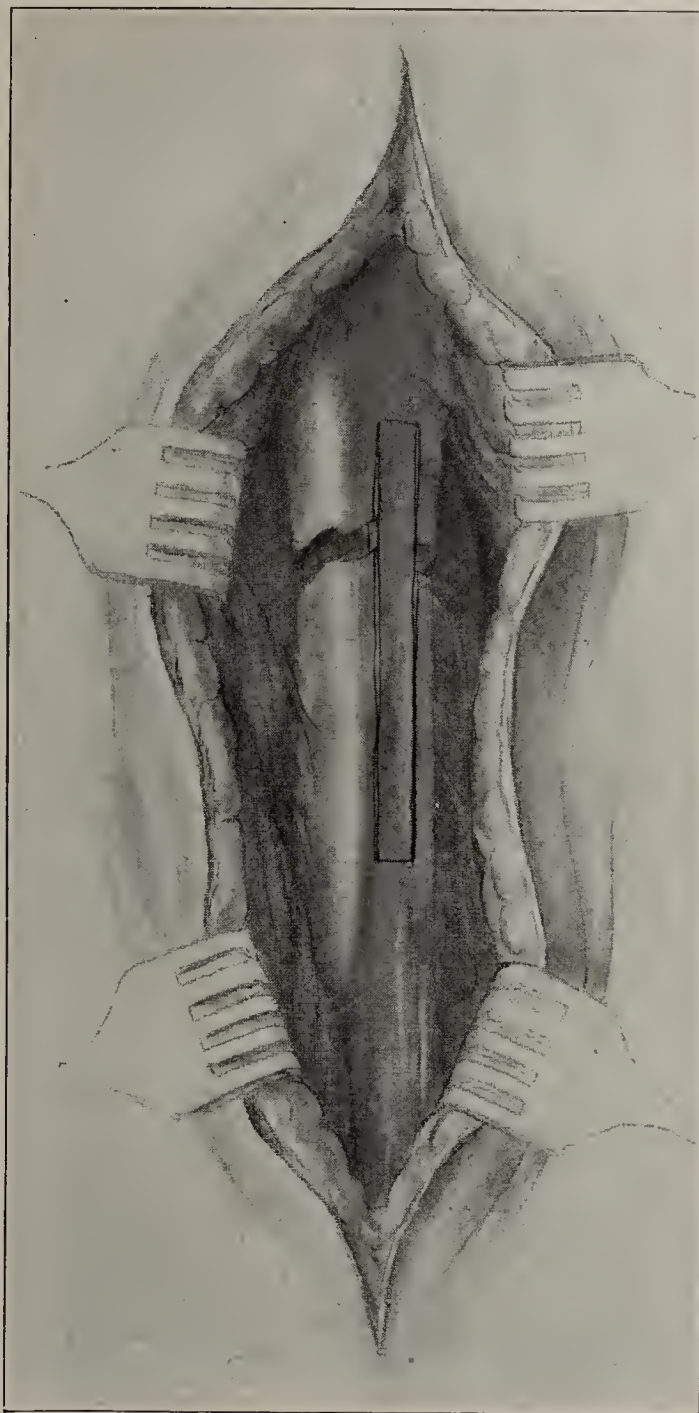


Fig. 4.—An insert placed in its bed. Insert was sawed by the same twin saw set exactly as it was in making the bed. The insert is loose and needs suturing, pegging or screwing. Note chips of bone placed between the edges of the bed and the transplant. Sutures and pegs are often employed also to immobilize when the graft is smaller than its bed.

According to Delagénière,<sup>1</sup> the idea of repairing losses of bony substance by means of a periosteal graft was due to Ollier, who reported a case of transplantation of a piece of tibial periosteum in 1835. Ollier failed to obtain the results obtained today because, in stripping the periosteum, he robbed it of some of its osteogenic cells, and placed it under abnormal physiologic conditions. In present practice a strip of the underlying bony tissue is taken with the periosteum.

An excellent area from which to obtain such a graft is the anterolateral inner side of the upper third of the tibia (Fig. 4). The outline of the graft is made with a bistoury, and the graft is then removed with a chisel,

1. Delagénière, H.: Repair of Loss of Bony Substance and Reconstruction of Bones by Osteoperiosteal Grafts Taken from the Tibia (with 118 New Personal Cases), *Am. J. Surg.* **35**: 281 (Sept.) 1921; *Greffes ostéopériostiques: technique et applications*, *J. de chir.* **17**: 305 (April) 1921.



its thickness being controlled by inclining the chisel more or less toward the center of the bone. Care must be taken not to hold the chisel obliquely enough to loosen the bony lining, or perpendicularly enough to penetrate the bony canal.

The graft may be laid over a bony defect, such as an ununited fracture with loss of bony substance, applied over and around the ends of a transplant where it is attached to the host bone, or placed over the entire transplant, including its body, so that it spreads over the area of lost bone and covers the ends of the transplant where they are fixed (Fig. 5). The wafer graft has been used frequently also for repair when the transplant bridging the gap between the fractured ends of two bones has been broken from one of its attachments or pulled out from a medullary bed. Instead of traumatizing the tissues in an attempt to unite the end of the transplant to the fractured bone, the graft is laid over the gap and, if it is easily done, applied also around the faulty area. The limb is then fixed by plaster of Paris.

Delagénère<sup>2</sup> states that in the roentgen-ray examination, after the graft has been put into place, the two bony extremities are first seen to be separated by a clear space. In about a month there appears a clouding, in the center of which is a bony track which resembles a twisted cord stretched between the fragments. In rapid cures the bone requires about two or three months to resume a normal outline; in slow cures, about six months. The new bone secreted by the graft takes the form of the graft. When ossification is complete, the new bone seems to resemble that which it has replaced. The clinical evolution of the case is equally interesting. After the operation, the skin and tissues have an inflamed appearance if the wound has not been drained. In a few days the inflammation is confined to the limits of the graft. The wound is then united as an ordinary wound, and the graft grows normally. If the wound is drained, all that flows out is a little blood

mixed with lymph. In 200 cases in which this type of graft was used, Delagénère has not seen a single case in which the graft was absorbed.

Imbert and Jourdan<sup>3</sup> state that in two pieces examined by them after twenty and thirty days, respectively, in cases in which the bony tissue and periosteum remained alive, the appearance of the transverse cut of the graft was somewhat like that of spongy tissue. The haversian spaces had small medullary cavities. The bony canals were often deprived of their osteoblasts, and the bony corpuscles were gone except near the periosteum. These medullary cavities were enclosed by numerous polykaryocytic cells in the sinus which fringed the cross section of bony canals. At certain points, veritable nests of these cells were found under the periosteum. It was evident that in the process of extracellular digestion, which appeared to be the activity of these cells, the inclusion of the bony débris completed the destruction of the tissue. Imbert and Jourdan believe that in the osteoperiosteal graft the bony tissue is, in a way, a regression. Simultaneously, a bony tissue of new formation appeared under the periosteum. The building activity of the periosteum was shown by the line of osteoid tissue of the new formation which appeared at the border of the subperiosteal bony canals, and also by the osteoblasts which, arranged in series, lined the edges of these canals.

Chutro<sup>4</sup> and Dujarier<sup>5</sup> use the osteoperiosteal graft with the segmentary graft in certain cases of injury of the humerus and femur. Maurice, Gosset and Willems recommend its use in cases of loss of bony substance not exceeding 3 cm. Leriche and Policard<sup>6</sup> state that the only cases in which it is contra-indicated are those in which it is necessary to maintain rigidity to hold the reduced bones in place, as in the humerus and femur. For all other cases, they consider it the best of all transplantations. Of 254 cases reviewed by Ramsdell,<sup>7</sup> the results were successful in 237, and partially successful in eleven.

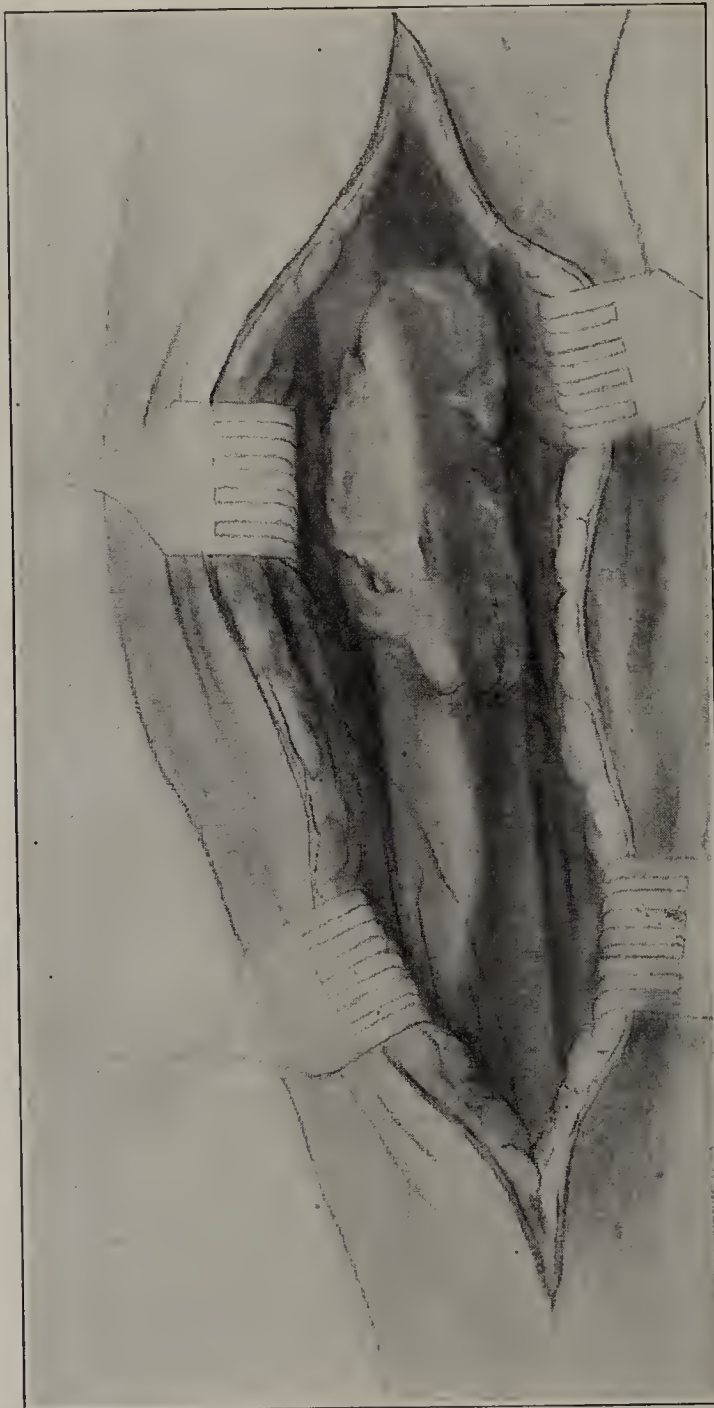


Fig. 5.—The placed wafer graft of periosteum with its attached compacta. It covers the ebonized ends of the ununited fracture. It also covers the transplant as shown in Figure 3 a.

2. Delagénère, H.: Méthode générale et technique des greffes ostéopériostiques prisés au tibia pour la reconstitution des os ou la réparation des pertes de substance osseuse, d'après 188 nouvelles observations personnelles, avec présentation de blessés, Bull. et mém. Soc. de chir. de Paris **93**: 2288, 1917; Des greffes ostéopériostiques prisés au tibia pour servir à la reconstitution des os ou à la réparation des pertes de substance osseuse, en particulier pour réparer les pertes de substance du crâne suite de trépanation et les pseudarthroses des membres (41 observations), ibid. **42**: 1048-1076, 1916; Des greffes ostéopériostiques prisés au tibia pour la réparation des pertes de substance osseuse et la reconstitution des os: Méthode générale, technique, et résultats d'après 159 observations, J. de méd. et de chir. prat. **89**: 81-88, 1918.

3. Imbert and Jourdan: Sur l'état d'évolution de tissu osseux dans les greffes ostéopériostées, Compt. rend. Soc. de biol. **82**: 115-118, 1919.

4. Chutro, M. P.: Quelques cas de greffes osseuses du tibia et de l'avant-bras, Bull. et mém. Soc. de chir. de Paris **44**: 1331-1337, 1918.

5. Dujarier, C.: À propos de 17 cas de greffes osseuses, Bull. et mém. Soc. de chir. de Paris **43**: 1389, 1917; Des pseudarthroses des deux os de l'avant-bras, ibid. **45**: 327, 1919; Des pseudarthroses du membre inférieur, ibid. **45**: 582, 1919.

6. Leriche, R., and Policard, H.: Résultats éloignés de 19 transplantations osseuses de divers types, Lyon chir. **17**: 428, 1920.

7. Ramsdell, E. G.: The Delagénère Bone Graft, M. Rec. **94**: 776, 1919.



McWilliams<sup>8</sup> analyzed all graftings reported in the literature, and the results as indicated by the replies to a questionnaire. A comparison of the various methods of bone grafting shows definitely that the procedure that gives greatest promise of success is the osteoperiosteal method. The advantages of the latter, McWilliams thus summarizes: (1) increased likelihood of success of the grafting; (2) greater simplicity of technic in obtaining the graft, there being no necessity for the use of complicated motor saws; (3) less liability of fracture of the tibia from which the graft is taken.

Forgue,<sup>9</sup> professor of clinical surgery at the Faculté de médecine of Montpellier, also recognizes the superi-

technic should not be allowed to exclude each other but should rather supplement each other, and that, in complex cases, the more rational solution would be to combine the two methods, and to proceed in stages as developments indicated.

We must employ both methods, but we must select the osteoperiosteal or the rigid graft or both combined, according to the demands of the particular case.

#### THE CARE OF THE HARD ENDS OF OLD UNUNITED FRACTURES

The idea that there must always be thorough denudation of old ends of bone and removal of all cicatricial



Fig. 6.—Appearance in case reported, Aug. 30, 1920, four and one-half years after injury: Bismuth paste in soft tissues; infection in paste area; deformity of united fibula; in paste area; deformity of united fibula; loss of tibial substance; gap of considerable size.



Fig. 7.—Appearance, May 23, 1921, eight months after operation: Paste is gone; one tight-fitting bone graft from the opposite leg was placed in one side of the tibia to bridge the gap; a wafer osteoperiosteal graft from the opposite tibia was placed over the transplant and over the gap between the ends of the tibia; the planned second transplantation to support the opposite side of the tibia was abandoned; wafer graft has covered the gap; the growth is on very hard bone; the ebony bone was not removed; it was denuded.



Fig. 8.—Appearance from same angle in same case, Feb. 21, 1922, eighteen months from time Figure 6 was taken and ten months from time Figure 7 was taken. Patient walks without crutch or cane; no motion can now be produced in the tibia. It must be admitted that either the transplant or the graft or both have grown firmly in and about the ebony bone, and that the space between the fractured ends of the tibia at least look as though it were filling in with good bone.

ority of the Delagénière graft in the majority of cases.

Would it not be wiser to keep in mind the special importance and adaptability of both the osteoperiosteal and the rigid autobone graft, each in particular cases? In this connection I agree with the opinion expressed by Cuneo and Rouvillois,<sup>9</sup> who hold that these two forms of

tissue is wrong, dangerous, and very often fatal to the good result sought. Many poor results due to overcautious preparation of the hard ends of old ununited fractures have taught us to be satisfied with only fair alinement of the bones, and frequently no denudation of fresh bone in or around the area in which the wafer graft is to be used. The army results with such preparation surprised us by the absence of infec-

8. McWilliams, C. A.: The Values of the Various Methods of Bone Graftings Judged by 1,390 Reported Cases, *Ann. Surg.* 74: 286-293 (Sept.) 1921.

9. The Thirty-First French Congress of Surgery, abstr. J. A. M. A. 79: 1532 (Oct. 28) 1922.



tion and flare-ups, the great osteogenic stimulation exerted by the wafer graft, the ability of the wafer graft to become a part of the ebony bone, and the efficiency of the wafer-graft bridge in gaps, even when no autogenous transplant was used.

#### POSTOPERATIVE CARE

The operating room application of the splint following open reconstruction, which, in some cases, may include bone grafting of fractures, is frequently neglected, though it is of great importance. Many are convinced, however, that it is the ability and patience to observe these points in the technic that make or mar the results. Those who do not have the inclination to see the case through postoperatively should not undertake the operative treatment. An example of careless management was that of a case of fracture of the femur. Excellent coaptation and alinement had been obtained, and the dressings applied. The surgeon then walked out, leaving the plaster fixation of the leg, a very important part of the work—considered by some the most important—to his assistant. Moreover, as the operation was performed on an ordinary operating table instead of a fracture table, it was necessary to move the patient after the operation and before the application of the cast. When this moving was done, the screws of the metal plate were ripped out so that overriding occurred. In such cases the patient cannot be blamed if he refuses to submit to a second necessary operation by the same surgeon.

A case of fracture is selected for report because it is in itself an example of the methods and technic here considered:

1. The removal of scar tissue and the use of the sliding skin graft to provide nourishment for a prospective superficial bone graft, as for example, a graft placed in a tibia.
2. Closure of a persisting osteomyelitic sinus.
3. Care of ebonized ends of an ununited fracture.
4. The employment of an autograft without pegs, screws or sutures.
5. The utilization of the osteoperiosteal graft as a support for the autograft.
6. The problem of muscle and joint fixation following the transplantation.
7. The presence of latent infection near the operative field. Its flare-up without damage to the transplant or to the osteoperiosteal graft.

#### REPORT OF CASE

*History.*—A man, aged 24, sustained a severe compound infected fracture of both bones of the right leg in April, 1916. In November, 1920, the patient appeared healthy, and walked on the left leg with the aid of crutches. There was a discharging sinus over the junction of the upper and middle thirds of the right tibia which was surrounded by a large area of scar tissue. Motion and loss of bone substance in the tibia were apparent. The fibula had healed with overlapping, shortening, and the characteristic bowing which follows loss of bone in an ununited tibia when the fibula is normal or nearly normal and longer than the tibia.

The roentgen-ray examination substantiated the clinical findings, and revealed a considerable loss of tibial substance and a large mass of bismuth paste encysted in the soft tissues.

The usual laboratory tests, including the Wassermann test and a coagulation test, were negative.

*Treatment.*—The sinus was injected with methylene blue mixed in bismuth paste to give it body. The use of antiseptics, as advocated at some of the army hospitals, is not considered safe. (The color guidance for thorough dissection is more important than the disinfection, offers no danger, and usually meets all requirements.) A local anesthetic was used.

The walls of the sinus were dissected out, and the encysted mass of paste was removed. The presence of infection necessitated the introduction of a drain posteriorly and through new tissue. The scar tissue was dissected out, the skin undermined, and a sliding skin graft applied. Closure was effected through the aid given by a second incision 3 inches medial and parallel to the first, which allowed freer and fuller sliding of the skin. The small drain placed posteriorly from the bed of the encysted paste was taken out the fourth day. Healing followed. The sutures for the closure were removed the ninth day. Primary healing resulted.

Instead of waiting a year after closure for the walling off of all latent infection, we performed the grafting operation four months after the closure. There was no bone infection.

An incision was made on the tibia, and the ununited fracture was exposed, but the ends were not dug out or freed from their scar beds. One of the beds for the proposed transplants across the gap between the ends of the tibia was outlined with the double saw, but sawed with the single saw, the tissue being disturbed as little as possible. The second bed, which was planned at first to bridge the other side of the bone separation, was not made. It was decided during the operation to defer this transplantation.

The question now presented itself as to whether the operation should be continued or the wound closed for a few days, as indicated in most war wounds.

The good condition of the parts favored a one-stage operation. Therefore, the transplant was measured and marked out from the other tibia with the double saw, but sawed out with the single saw, and the cuts were made just outside the twin saw marks. The transplant was then transferred to the bed in the frac-

ture and forced into place. It fitted snugly and needed no other fixation.

A wafer graft,  $2\frac{1}{2}$  by 3 inches, was then taken from the upper inner surface of the left tibia and laid over the entire field of the graft, over the ends as well as the space between the fractured bones, and tucked over the crest of the tibia and its posterior border. One or two sutures were used to hold it down.

The dressings were so made and so placed that when the window was cut in the cast for inspection of the wound and removal of the stitches, the delicate superficially placed grafts were not disturbed. The wound was closed with due care and respect for the grafts, and healed by first intention.

The leg, including the foot and knee, was enclosed in a properly fitting plaster cast extending to the trochanter, the knee being slightly bent.

The building of the cast met the requirements of proper reinforcements to facilitate window cutting and stability.

*The Flare-Up.*—Three months after the transplantations, there were indications of infection. The cast was still on.



Fig. 9.—Healed right leg, with multiple scars, and left leg, from which bone grafts were taken.



Roentgenograms gave no indication of any bone infection in or about the grafts, and clinical examinations indicated no trouble in the neighborhood of the incision. Tenderness, swelling and redness were found on the upper third of the inner side of the leg, and above the upper end of the graft incision on the side of the leg opposite the drain which had been placed to safeguard the bismuth paste injection.

As the graft appeared to be uninjured, it was determined to protect it by continued cast fixation and noninterference. The abscess was drained by two incisions made without the use of an anesthetic, and the cast, which had been carefully removed for examination, was replaced. Observation at daily careful dressings soon showed the disappearance of all suspicious signs indicating further infection, and the wounds were healed after a period of three weeks. Both grafts took perfectly, and steady improvement is reported with ever-increasing weight-bearing. The plan for the second transplant, opposite the first, has been abandoned, as the functional results make it unnecessary.

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## EXPERIMENTAL HYDRONEPHROSIS

SIGNIFICANCE OF COMPENSATORY HYPERTROPHY  
AND DISUSE ATROPHY TO REPAIR\*

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Evidence of some experimental work and a greater amount of speculation is found in the medical literature on the degree of recovery that may be expected from repair procedures in cases of hydronephrosis. The generally expressed experimental opinion is frankly



Fig. 1.—Normal kidney of a dog, injected with collodion preparation: How distention of the calices will strangle and pinch the arterial branches coursing between them. Ureter and pelvis, light; arterial tree, dark.

pessimistic; and, while experimental results cannot be too closely applied to clinical problems, in this case they seemingly correspond. Technical difficulties and complicating infections are factors often held responsible

by surgeons for many of their clinical failures, which have been so frequent that there is a pronounced reluctance to attempt the surgical repair of hydronephrotic sacs. The experience of persistent urinary fistulas and the occasional necessity of later nephrectomy is a real discouragement to one conservatively minded, and forms the chief argument of the radical class for an initial nephrectomy. Ureteropyeloplastics, pyeloplications, lateral ureteral anastomoses, ureteropyeloneostomies, nephrocystoneostomies, pyelorenal orthopedic resections, and other plastic repair procedures have fallen into general disfavor.

The problem of repair in hydronephrosis has interested me for many years, and in this time sufficient experimental and clinical data have accumulated to give an entirely new outlook on the subject and to establish that a pathologic and physiologic principle is involved which is fundamental and has been heretofore insufficiently realized. It is my purpose in this paper briefly to present some experimental work indicative of this fundamental principle.<sup>1</sup>

The experimental investigation of the recovery, both functional and anatomic, of a hydronephrotic kidney after the obstruction causing it has been removed has not been extensive. Anatomic recovery obviously is of the first importance, as without it there cannot be any lasting recovery of function, and, in order to have any sort of a control of the findings, complete ureteral obstruction rather than partial obstruction, which is not possible of uniform application and may be therefore quite variable in its effects, is required. There have been, however, several valuable contributions relative to the effects of partial obstruction on function and the behavior to diuretics.<sup>2</sup> Complete obstruction of the ureter gives fairly uniform results in experimental animals, so that one has with it a basis for comparison in a repair series. But too close an analogy to clinical hydronephrosis cannot be taken, as the latter almost invariably follows partial or intermittent types of obstruction. Furthermore, it is questionable whether one can consider the hydronephrotic atrophy of partial and complete block even as relative, for anatomically similar degrees of dilatation will not show analogous histologic changes, though the differences are slight. A kidney with complete obstruction may be more injured both functionally and anatomically than

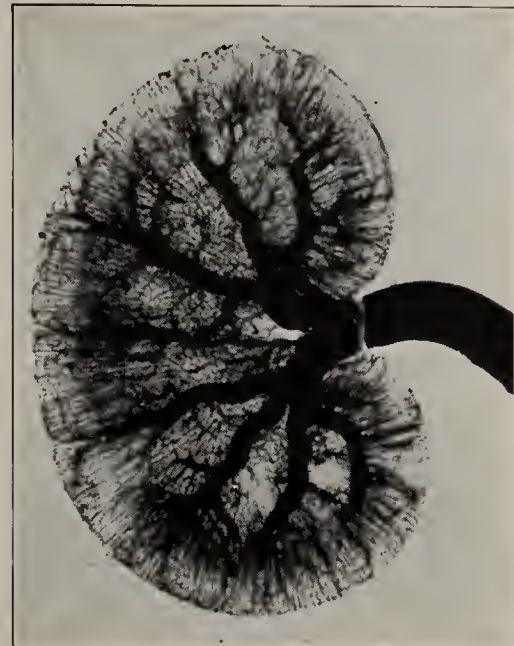


Fig. 2.—Roentgenographic appearance of normal kidney of a dog after barium sulphate injection of arterial tree, showing the remarkably rich blood supply to the cortex; for comparison with Figures 3 and 4, in which the kidneys were injected with the same pressure and similar solution.

1. Complete experimental results, with protocols and bibliography and consideration of related clinical problems, will shortly be presented in the form of a monograph entitled "Renal Counterbalance." An experimental study of this subject was presented at Washington, May 3, 1922, before the Association of Genito-Urinary Surgeons, and is published in the transactions of that meeting.

2. Keith and Snowden, Keith and Pulford, Hermann, Lepine and Porteret, Lindemann, Schwartz, Filchul and Ruschaupt, Brodie and Cullis. The reader is referred to the monograph for the bibliography.

\* From the Department of Urology and the Hooper Foundation of Medical Research, University of California Medical School.



one with only a partial hindrance to urinary outflow, even though in gross appearance there is a similar degree of dilatation and atrophy. Nevertheless, there is a sufficient similarity between the experimental and the clinical conditions to render of interest all experimental results.

The few investigations of this particular problem fall into one of two groups. In one group the opposite

This sudden and often overwhelming burden is a very unphysiologic test of repair possibilities. In the accompanying table are listed, according to this grouping, the actual experiments which we have been able to find reported that have been performed for the purpose of testing repair after hydronephrosis. It will be seen that the results do not offer very much encouragement to the conservative surgeon. Donati rather indefinitely

DURATION OF PERIOD OF REPAIR

Name of Experimenter	Animal Used	Duration of Complete Ureteral Obstruction	Ureteral Transplan- tation to	Group 1		Group 2			Result	Comment
				Opposite Kidney Undisturbed	Nephree- tomy	Ureteral Ligation	Resec- tion	Subsequent Period		
Donati.....	12 rabbits, 2 dogs	10 to 100 days	Bladder	.....	.....	.....	.....	.....	.....	In 11, a fragment from kidney re- moved for com- parison with late result
Amas.....	Rabbits	14 days	Skin	35 days	.....	.....	.....	.....	Killed	Opposite kidney showed no change
Bortzel.....	Rabbits	21 days	Bladder	15 hours	.....	.....	.....	.....	Killed	Studied excretion of toluidin blue; re- pair of ability to excrete it up to 20 to 30 days
		21 days	.....	15 hours	.....	.....	.....	.....	Killed	
		22 days	.....	17 hours	.....	.....	.....	.....	Killed	
		22 days	.....	24 hours	.....	.....	.....	.....	Killed	
		27 days	.....	48 hours	.....	.....	.....	.....	Killed	
Hinman.....	White rats	31 days	.....	68 hours	.....	.....	.....	.....	Killed	Studied reaction to intravital stain, diamin blue and anatomic changes of repair
		40 days	.....	68 hours	.....	.....	.....	.....	Killed	
		14 days	Bladder	146 days	.....	.....	.....	.....	Killed	
		60 days	Bladder	119 days	.....	.....	.....	.....	Killed	
		60 days	Bladder	165 days	.....	.....	.....	.....	Killed	
Rautenberg.....	Rabbits	95 days	Bladder	99 days	.....	.....	.....	.....	Killed	Quoted by Rauten- berg
		120 days	Bladder	116 days	.....	.....	.....	.....	Killed	
		120 days	Bladder	92 days	.....	.....	.....	.....	Killed	
		21 days	Bladder	24 days	.....	.....	.....	.....	Killed	
		42 days	Bladder	34 days	.....	.....	.....	.....	Killed	
Bradford.....	Rabbits	42 days	Bladder	70 days	.....	.....	.....	.....	Killed	Living
		45 days	Bladder	86 days	.....	.....	.....	.....	Killed	
		11 to 40 days	Bladder	7 to 50 days	.....	.....	.....	.....	Killed	
Ederlein.....	Dogs	After some time	Bladder	At various periods	.....	.....	.....	.....	Killed	Living
Latham.....	Dogs	14 days	Bladder	311 days	.....	.....	.....	.....	Killed	
Corbett.....	Rabbits	14 days	Bladder	326 days	.....	.....	.....	.....	Killed	
		24 hours	Bladder	.....	8 days	.....	.....	Not stated	.....	Living
		6 days	Bladder	.....	7 days	.....	.....	Not stated	.....	
Fiori.....	Rabbit	*22 days	Bladder	.....	Same time as ligature removed	.....	.....	37 days	Killed	
		*23 days	Bladder	.....	Same time as ligature removed	.....	.....	55 days	Killed	Living
		28 days	Bladder	.....	At same time	.....	.....	26 hours	Died	
Rautenberg.....	Dog	90 days	Bladder	.....	.....	10 days	.....	7 days	Died	Living
		160 days	Bladder	.....	At same time	.....	.....	9 days	Died	
		14 days	Bladder	.....	9 days	.....	.....	49 days	.....	
Donati.....	Rabbit	15 days	Bladder	.....	19 days	.....	.....	9 days	Died	Living
		16 days	Bladder	.....	15 days	.....	.....	49 days	Died	
		21 days	Bladder	.....	11 days	.....	.....	5 days	Died	
		21 days	Bladder	.....	23 days	.....	.....	26 weeks	Died	
		*21 days	Bladder	.....	22 days	.....	.....	1 year	Died	
		21 days	Bladder	.....	28 days	.....	.....	3 days	.....	
		*22 days	Bladder	.....	31 days	.....	.....	1 year	.....	
		28 days	Bladder	.....	24 days	.....	.....	2 days	Died	
		29 days	Bladder	.....	16 days	.....	.....	2 days	Died	
		42 days	Bladder	.....	155 days	.....	.....	4 days	Died	
		42 days	Bladder	.....	.....	74 days	.....	4 days	Died	
		42 days	Bladder	.....	.....	74 days	.....	4 days	Died	
		42 days	Bladder	.....	117 days	.....	.....	4 days	Died	
		10 days	Bladder	.....	.....	15 days	.....	16 days	Died	
		14 days	Bladder	.....	.....	16 days	.....	3 days	Died	
Johnson.....	Rabbit	.....	Bladder	.....	.....	.....	1/2 kidney	6 days	Died	Living
		.....	Bladder	.....	.....	.....	1/2 kidney	4 days	Died	
		24 days	Bladder	.....	35 days	.....	.....	4 days	Died	
		40 days	Bladder	.....	15 days	.....	.....	3 days	Died	
		70 days	Bladder	.....	136 days	.....	.....	24 hours	Died	
		80 days	Bladder	.....	160 days	.....	.....	2 1/2 days	Died	
		3 days	Bladder	.....	5 days	.....	.....	23 days	Died	
		* 7 days	Bladder	.....	16 days	.....	.....	40 days	Killed	
		*14 days	Bladder	.....	35 days	.....	.....	152 days	Killed	
		17 days	Bladder	.....	14 days	.....	.....	9 days	Died	
Johnson.....	Rabbits	19 days	Bladder	.....	3 days	.....	.....	4 days	Died	Living
		19 days	Bladder	.....	18 days	.....	.....	3 days	Died	
		21 days	Bladder	.....	11 days	.....	.....	6 days	Died	

\* Animals successfully surviving opposite nephrectomy.

and healthy kidney has not been disturbed in the course of the repair experiment, but has been allowed to hypertrophy and thus compensate for the total loss of function of the side with a completely occluded ureter. This compensatory hypertrophy must later have a considerable influence on the process of repair after the ureteral obstruction is removed. In the other group, the opposite and compensatory kidney has been removed either at the time of the ureteral repair or at some time later, thus throwing at once the complete load of total renal work on the injured repair side.

concludes that the usefulness of the conservative treatment of hydronephrosis is not great, and Rautenberg's eighteen experiments apparently show that the repair parenchyma is not viable, but that the injury of even a fourteen days' obstruction is that of a true progressive toxic degeneration with ultimate destruction similar to nephritis. Johnson found that kidneys, the obstruction of which had been removed within two weeks, regained their normal structure except for varying amounts of atrophy in the lateral portions, and that these repair kidneys also regained the ability to compensate for the



loss of their opposite healthy partner as measured by phenolsulphonphthalein; but it took forty days for a seven-day and 152 days for a fourteen-day hydronephrosis thus to regain normal function. These kid-

neys, however, had been subjected to a sudden and almost overwhelming burden at the very onset of their repair periods. In our own experiments on rats, the repair nodules developing after the removal of sixty

days' obstruction were insignificant in comparison to the needs of the animal, although anatomic evidence of considerable recovery was present, and the behavior of these repair nodules to intravital stains evidenced a marked functional restoration.

### THREE GROUPS OF REPAIR HYDRONEPHROSIS

The great objection to most of this experimental work is that it deals with short-time experiments. The evidences of repair, both functional and anatomic, must have a certain basis of permanence to be of value; and, while Rautenberg's contention of the regressive changes of repair is well taken, we differ with him in the explanation of this progressive degeneration. Our point of view may be best expressed by a consideration of repair hydronephrosis in three groups in place of two.

1. *Ureterocystoneostomy with Nephrectomy*.—If the ureteral obstruction is removed after about fourteen



Fig. 3.—Roentgenographic appearance after barium sulphate injection of the arterial tree of a forty-two day hydronephrosis (dog): The kidney has been cut sagittally after injection, but before roentgenography, so as better to show the blood supply of the two portions; the same injection pressure and similar solution as in Figure 2 were used; extravasation into the parenchyma from rupture of middle artery is seen; capillary supply is very limited.



Fig. 4.—Roentgenographic appearance after barium sulphate arterial injection of a forty-two day hydronephrosis three days after ureterocystoneostomy, showing a remarkable revascularization on relief of ureteral and intrapelvic pressure; capillary supply, in comparison to that of kidney in Figure 3, is surprisingly reestablished.

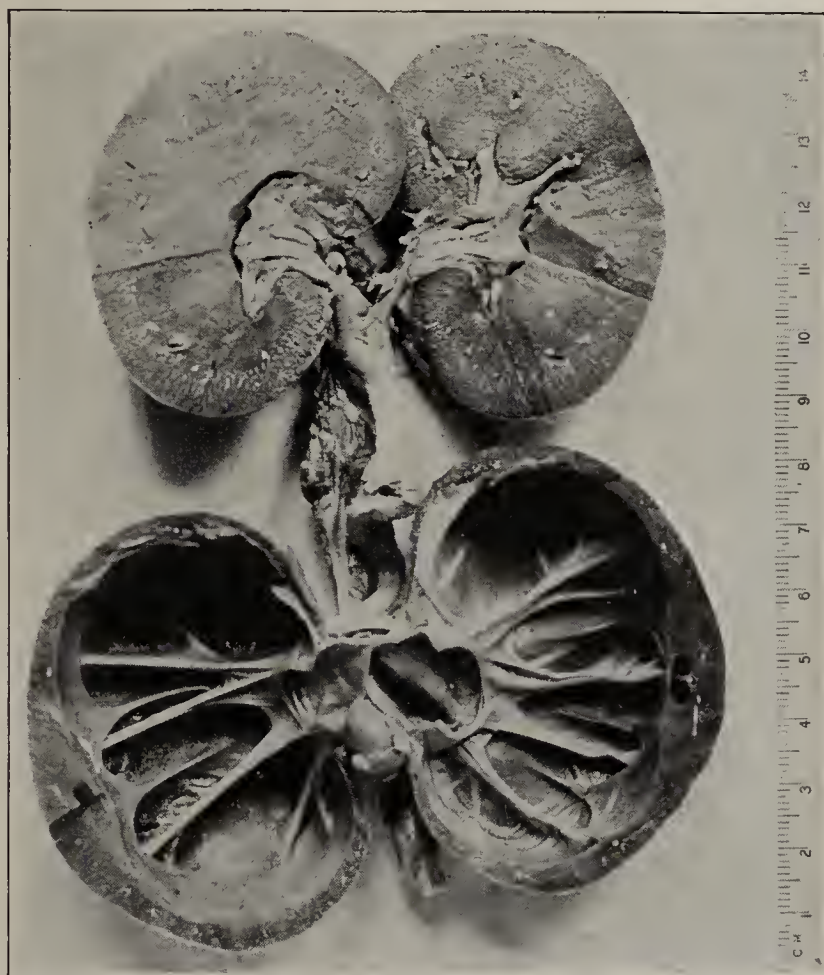


Fig. 5.—Gross specimen of a thirty-day hydronephrosis after complete ureteral obstruction in a dog; the opposite hypertrophic kidney is shown; for comparison with Figures 6 and 7.

days or less, and opposite nephrectomy is performed, there will be a certain number of animals which will fully recover and the repair kidney not only regain normal function but so hypertrophy as to care for total function. We have successfully performed this experiment in cats. The success or failure is proportional to the absence or degree of infection present in the hydronephrosis at the time of the repair procedure, and Rautenberg and Corbett have reported successes even after twenty-one, twenty-two and twenty-three days' complete ureteral block (as shown in the accompanying table).

2. *Ureterocystoneostomy Without Nephrectomy*.—If, in these short-time hydronephroses, the opposite kidney is not removed or in any way disturbed at the time of the ureterocystoneostomy, and the animal is killed after a relatively long interval of repair, say from one to two years after ureterocystoneostomy, the repair



kidney will be found to have undergone various degrees of atrophy and necrosis, the least when infection is absent and marked when infection is present; but, provided there was a healthy kidney on the opposite side to start with, the repair kidney will never be anatomically or functionally its equal.

In the long-time hydronephroses, from thirty to sixty days, these differences are much exaggerated. None of these animals will survive opposite nephrectomy. Examination of such animals, in which the opposite kidney has not been disturbed, say in from one to two months after ureterocystoneostomy, i. e., early in the repair period, will disclose a complete compensatory hypertrophy of the healthy side and varying degrees of repair of the hydronephrotic side, which may often be considerable. If, however, these animals with a thirty-day hydronephrosis and an undisturbed opposite kidney, as stated above for short-time hydronephroses, are killed from one to two years after ureterocystoneostomy, this kidney, which previously showed considerable repair, will be found invariably to have undergone complete atrophy and degeneration. This atrophy corresponds to Rautenberg's progressive toxic degeneration, which, if a true pathologic condition, should be uninfluenced by alterations or changes in the opposite kidney.

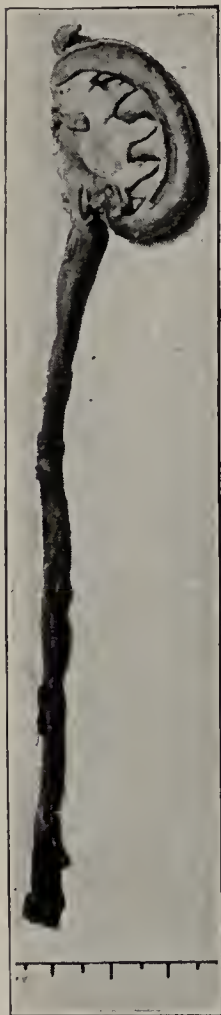


Fig. 6.—Gross specimen of a thirty-day hydronephrosis in a dog 360 days after ureterocystoneostomy: Complete atrophy has occurred; only a few atrophic glomeruli remain; the ureter is freely patent.

will be found to take place, and in from one to two years, instead of a complete atrophy of a thirty-day hydronephrosis, a complete compensatory repair has occurred, and the opposite kidney, which was the compensatory side in the beginning, has itself undergone complete destruction from hydronephrotic atrophy.

By way of illustration of this very instructive experiment, attention may be drawn to the accompanying illustrations. The importance of blood supply is demonstrated by injected specimens as shown in Figures 1, 2, 3 and 4. Simple thirty-day hydronephrosis in a dog is shown in Figure 5; a repair of such a thirty-day hydronephrosis when the opposite kidney is undisturbed, as it appears three days after, in Figure 4, and as it appears 360 days after ureterocystoneostomy in Figure 6; and a repair of a thirty-day hydronephrosis 390 days after ureterocystoneostomy when the opposite ureter has been partially obstructed at the time of ureterocystoneostomy in Figures 7 and 8. The difference in these kidneys of the same period of complete ureteral obstruction (thirty days) is striking. Figure

5 shows hydronephrotic atrophy (thirty days); Figure 4 shows the early repair (three days), and Figure 6 the late atrophy (360 days) of such a hydronephrosis when the opposite kidney is undisturbed; whereas, in contrast, Figures 7 and 8 show the remarkable counterbalance 390 days later of such a hydronephrosis when given the proper opportunity and stimulus.

#### COMMENT

The foregoing experimental studies not only confirm the fact that renal reserve and compensatory hypertrophy effect a counterbalance following unilateral nephrectomy, but also demonstrate that in unilateral diseases without nephrectomy an additional factor, which may be termed renal competition, is active in the final anatomic readjustment. There is created by the unilateral lesion an unequal ability to work; one side is healthy and active, the other diseased and less active. Activity is just as essential to renal growth as exercise is to muscle hypertrophy. A gradually increasing demand for more work stimulates renal tissue to greater activity, and results in renal hypertrophy. So, too, inactivity is just as significant to renal atrophy as to muscle atrophy, and a diseased renal mass in competition with a hypertrophic mate gets less and less stimulation as the other side becomes more and more efficient, and this progressive inactivity leads to a disuse

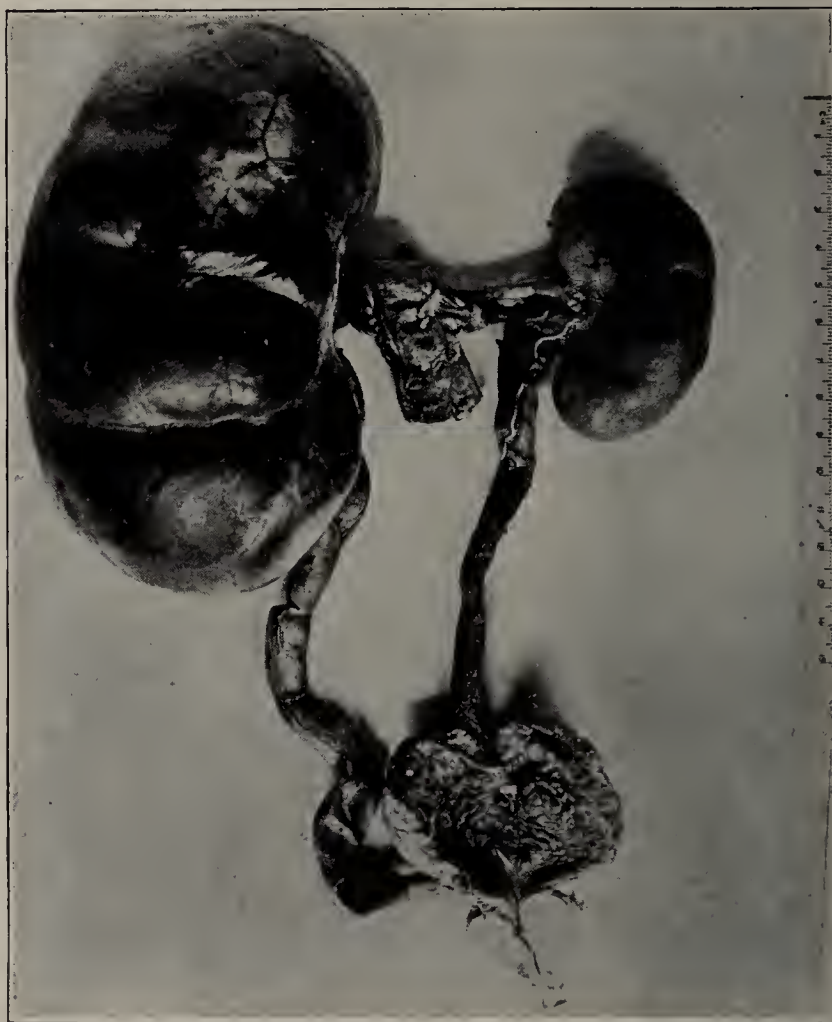


Fig. 7.—Specimen in the experiment illustrating renal counterbalance: The small kidney had a complete obstruction of its ureter for thirty days, and was then the duplicate of the kidney shown in Figure 5; the ureter was then transplanted to the bladder, and the patent ureterovesical orifice is shown with a white straw projecting out of it; five days later a rubber band was placed around the lower end of the opposite ureter belonging to the healthy and compensatory kidney so as partially to obstruct it; the animal was killed 390 days later, having been in perfect health and shown normal renal function by repeated retention and excretion tests.

renal atrophy. Furthermore, just as overexercise of muscle leads to muscle atrophy, so an overwhelming demand for work produces renal inactivity, and renal atrophy would result and be demonstrable if it were



not for the occurrence of early death from renal insufficiency in these experimental cases.

The conception of renal reserve power and compensatory hypertrophy, on the one part, and of renal competition and disuse atrophy, on the other, is important for thorough consideration in contemplation of renal surgery. Their significance in relation to repair operations is obvious. Such procedures throw a hitherto



Fig. 8.—Same kidneys shown in Figure 7 after bisection: Remarkable reparation of cortex and medulla of the thirty-day hydronephrosis is obvious, as is the complete hydronephrotic atrophy of the opposite and earlier compensatory kidney.

inactive injured and inefficient renal mass into direct competition with an active and hypertrophic fellow already accustomed to and thoroughly capable of doing all the renal work. The initial response on the diseased side to the changed condition for better work is one of repair, but this tendency is too feeble to withstand the strain of active competition. Stimulation of its latent reserve power is insufficient to effect a permanent hypertrophy of its remnants. The final atrophy is not wholly a progressive toxic degeneration, as Rautenberg believes, but largely an atrophy of disuse. This difference would seem to be proved by the fact that inhibition of the capable hypertrophic kidney by means of partial obstruction of its ureter, which gradually increases the stimulus given the diseased side, prevents the late atrophy of this diseased kidney, and produces, instead, a remarkable compensatory repair which appears in every way capable, permanent and healthy.

One can conclude that the bad results of repair procedures in hydronephrosis are not always due to technical failures. The fundamental principles of compensatory hypertrophy and disuse atrophy must be taken into account. Attempts to repair a unilateral hydronephrosis in the presence of a complete compensatory hypertrophy on the opposite side are always doomed to failure, and success is uncertain even with a partial compensation of the healthy side in case the diseased side has been much injured or infected, or

the repair procedure in any way imperfect. In bilateral disease, conservative surgery is always indicated; but in view of the necessity of repairing the two kidneys in two separate operations, the second operation cannot be safely delayed for too long a period because the initial repair operation may have placed this kidney in such favorable conditions as to allow it to undergo complete compensatory hypertrophy, and an atrophy of the unoperated side from gradually increasing inactivity would then surely result.

516 Sutter Street.

## Clinical Notes, Suggestions, and New Instruments

### A NEW SPLINT FOR FRACTURED PATELLA

H. C. MASLAND, M.D., PHILADELPHIA

Splints for the fractured patella have been generally unsatisfactory. The adhesive plaster used in making traction on the bones must pull on the skin and the soft tissue before it starts to draw on the bone. There is, in consequence, a redundancy, a wrinkling and compression of the soft tissues in the area between the broken fragments. The correct application of the splint here illustrated will give a direct grip and pull on the bones, while the superficial soft tissues can be drawn from under, both above and below the clutches. This gives a sufficiently taut superficial tissue covering the patella to prevent encroachment between the bones, which can be manipulated to coax out any synovial membrane that might be caught between them.

As a preliminary, the splint should be trued. It can be placed on a table or other flat surface. The upright arms are placed vertical, and opposite their respective mates. The thumb screws should be tightened, clamping the arms rigidly to the side arms in this position. The cross arm should be left free until the splint strips are adjusted to the width of the limb. The middle section of the side strips can be bent above the clutch brackets to fit a large thigh diameter.

The plaster on the leg should extend above and below the maximum diameter of the calf. This prevents lengthwise slipping. In none of my splints do I use padding of any description under the plaster. Mechanically, padding allows

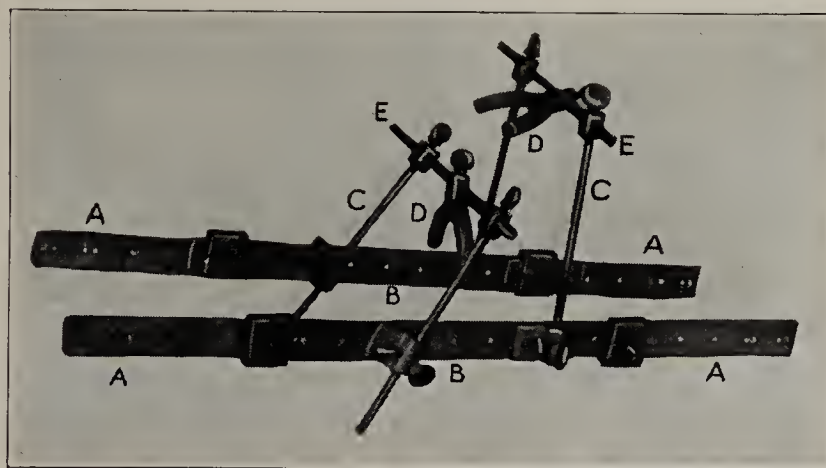


Fig. 1.—A, end splint sections; B, middle splint sections; C, side bracket arms; D, patellar clutches; E, cross arms.

some slip. It also sweats and macerates the skin, and encourages ulceration.

Each side splint is in three sections. The end sections are buried in the plaster on the leg and the thigh. The parts attached to the middle section should be left exposed. The middle section can thus be removed completely, or disconnected at either end from the end sections. When the side splints are in place, the thumb screws are freed, that the clutch may be moved up and down and lengthwise. The clutch is freed to move on the cross arm, and the jaws of the



clutch are bent to engage, but not to pinch, the edge of the patella.

The jaws are caught with the thumb and index fingers of one hand, and serve as would the thumb and finger of that hand. With the thumb and index finger of the other hand, and the clutch following immediately after, the skin and soft tissue are coaxed away and the bone drawn into position. The lower fragment is adjusted first, as the patellar ligament gives this a stable position. As soon as a clutch holds a bone

passive movement of the joints will yield normal function almost if not quite as quickly as bone reconstruction.

Figure 3 illustrates how the joint can be manipulated by simply freeing the sleeves that bind the middle section to the thigh section of the splint. The clutches are not disturbed in their grip on the patella. As the patellar ligament holds the patella in fixed lengthwise relation to the tibia in flexion or extension of the limb, so the splint mechanism, being rigidly attached to the tibia, maintains a similar lengthwise relation. Naturally, the surgeon exercises due skill in this manipulation. He can perform it as early as his judgment indicates.

When an open operation is necessary, this is a good fixation splint. The middle section can be removed during operation. It can then be reapplied, and without disturbing dressings or handling the limb, we have full immobile extension.

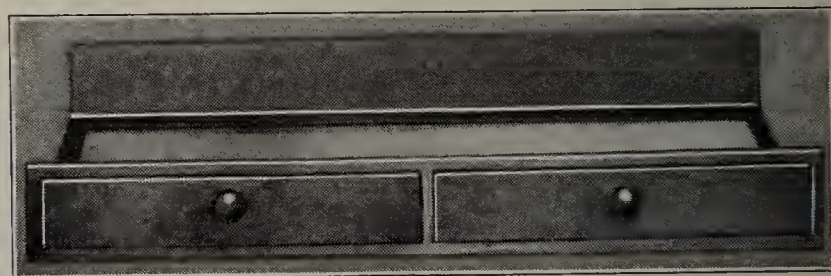
This splint can be used for certain fractures of the olecranon process. Here, we would use but one clutch, bending the jaws to engage the fractured process.

2130 North Nineteenth Street.

#### ELECTROCARDIOGRAPHIC FILM EXAMINING ILLUMINATING BOX

MORRIS H. KAHN, M.A., M.D., NEW YORK

Heretofore, it has been customary for physicians reading electrocardiographic films to hold them up to the artificial light and move them back and forth. This position is not conducive to accurate analysis, and is not practicable for demonstration to a class.



Illuminating box for electrocardiographic films.

The illuminating box that I have perfected for the reading of electrocardiographic films is essentially analogous to that used for the reading of roentgenograms, except that the light here, which is in the upper compartment, is reflected from an inclined mirror placed on the floor of the cabinet. Vent openings are placed to the rear of the upper compartment. With this arrangement, the film may be studied for a considerable time without perceptible heating.

The accompanying illustration shows the translucent glass plate over which the film is inserted. The two drawers are a convenience: one to contain the electric cord and the other for the measuring instruments and magnifying lens.

The apparatus was manufactured at my suggestion and perfected with fine architectural skill and excellent finish by Mr. Samuel Katz of 48 West Forty-Sixth Street.

I have used the apparatus with great satisfaction in demonstrating electrocardiographic films to a large number of physicians and students at one time.

140 West Sixty-Ninth Street.

**Artificial Pneumothorax.**—Artificial pneumothorax is not a new method of treatment. In 1822 Dr. James Carson of Liverpool suggested its use in the treatment of disease, and the previous year he made a series of experiments showing the effects of artificial pneumothorax on the circulation. It was noticed that patients in whom spontaneous pneumothorax occurred did well, but little is heard of artificial pneumothorax until the end of the last century. Caley treated a case of hemoptysis at the Middlesex Hospital by this means in 1885, and about this time Forlanini began to use the treatment in Italy. It was not, however, until the beginning of this century that it became at all extensively practiced.—Medical Research Council, London, 1922.



Fig. 2.—Splint in usual position.

properly, all its thumb screws are made tight, so that the clutch cannot move in any direction. The clutch can be used either in a vertical position, catching the bone with its ends, or in a more horizontal position, engaging the bone over a greater area. In cases in which considerable traction is exercised, varying the position will relieve the pressure.

It cannot be emphasized too strongly that the prompt reduction of any fracture is most important. Treated early, most fractures can be reduced as to both anatomic and functional position. In cases of delayed treatment, it may prove beneficial to use continued elastic traction on the upper clutch. This operates to exercise compression and ultimate absorption of the intervening plastic tissue. Elastic traction can be applied by attaching rubber bands or tubing to the cross arms at the side brackets and drawing downward by attaching the other ends of the bands to the side splints. This operates best when the brackets on the splints are placed to give a vertical

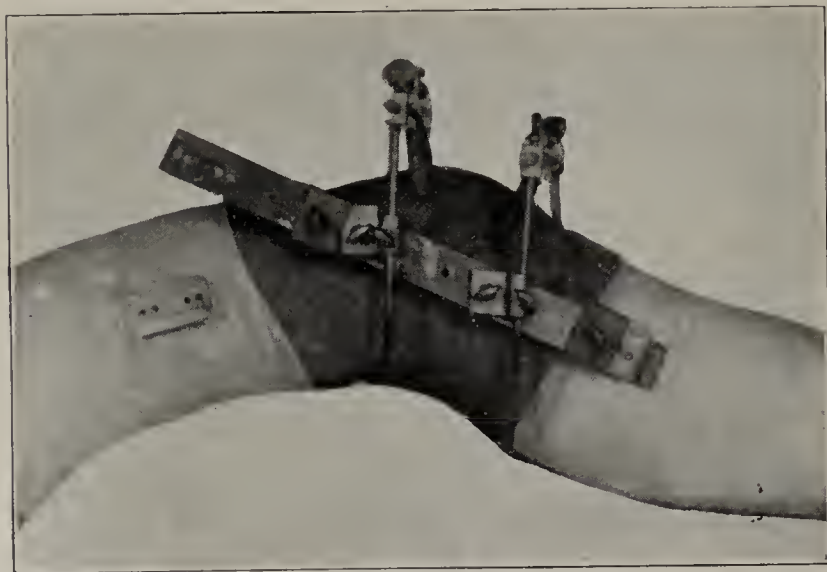


Fig. 3.—Splint disconnected at thigh junction to permit passive motion.

direction to the side arms, and the side splint brackets are left free to permit a forward movement. This absorption of new tissue by compression was beautifully illustrated in a case of downward dislocation of the scaphoid and cuboid, unreduced twenty-three days after injury. I succeeded in causing the absorption of the soft tissue and the reduction of the dislocation.

If a fracture is completely reduced and held in this position one week, the soft tissues will have so bound the parts that subsequent retention is easy. I am convinced that early



# A DIFFERENTIAL SIGN IN ABDOMINAL RIGIDITY

C. FREMONT VALE, M.D., DETROIT

Abdominal signs and symptoms in diaphragmatic pleurisy have been emphasized times innumerable. Let us add chest injury to the pleurisy. There are few internists who have not placed the lesion in the peritoneal cavity, and few surgeons who have not operated in such cases for appendicitis or other acute abdominal condition—all of which means that the differential diagnosis is often extremely difficult.

It is hoped that the simple sign here described may be of value to some in such cases when rigidity is present. So far as I have been able to learn, it has not been mentioned in the literature. When the lesion is intrathoracic, the rigidity of the abdominal muscles momentarily relaxes at the end of expiration. This is typical, and is not present regularly at any other period of the respiratory excursion. When the lesion is intraperitoneal, the rigidity is usually constant; but, if intermittent, is not regularly so, as in the chest condition. When the signs are marked, there is also a pause often prolonged, between the end of inspiration and the beginning of expiration, with a rapid excursion.

This was first observed and is best demonstrated in traumatic chest conditions. Here it is often greatly exaggerated, and cannot be mistaken. The abdominal rigidity is so marked as almost or quite to equal the characteristic boardlike rigidity of perforated ulcer, and at first one feels sure that serious intra-abdominal injury has occurred. I operated in one such case, and my surprise at finding no injury led to the more careful study of this type of rigidity.

This sign has been observed in a great many traumatic cases, and fewer chest infections. So far we have not seen it fail. It is now used as a routine in the emergency department of Receiving Hospital as the main differential diagnostic sign.

613 David Whitney Building.

# A SAFE METHOD OF ANESTHETIZING CHILDREN WITH ETHYL CHLORID

JOSEPH E. LUMBARD, M.D., NEW YORK

Ethyl chlorid is a serviceable anesthetic, though it has limitations. Its proper field is in the induction stage, as a preliminary to ether anesthesia for children. For adults, I have found that nitrous oxid is better; but it may also be used as an adjunct to ether for adults. Its greatest field is with children under 10 years of age. Most of the textbooks on general anesthesia rely on the loss of consciousness as the indication to stop its administration. This is too indefinite and dangerous.

## PROCEDURE

To administer ethyl chlorid, a Yankauer mask is covered with eight or ten layers of gauze for children under 8 years of age, and from ten to fifteen layers for older children. The mask is placed over the mouth and nose, and the child is asked to count slowly. The ethyl chlorid is slowly dropped, never sprayed, over different parts of the mask, until the count becomes confused. Then the anesthetist immediately changes to ether as in the usual "drop ether" method. When children are too young to count, the cry is used as a guide, and the anesthetic switched at once to ether when the cry begins to diminish. Occasionally one will encounter children who neither count nor cry. This may be overcome by tickling the feet, pinching the skin of the neck, or pushing the jaw forward. At all times if there is any doubt as to the depth of anesthesia, one should switch to ether, and if it is not tolerated, simply add a few more drops of ethyl chlorid. My old anesthesia slogan applies here: "It is easier to add than subtract, when administering anesthetics."

One should be sure to use ethyl chlorid from a glass container having a good dropper attachment.

By this method we have a safe, simple, quick and easy way of using ethyl chlorid for children.

1925 Seventh Avenue.

## Special Article

# THE CARE AND FEEDING OF INFANTS

(Continued from page 253)

[NOTE.—This is the fifth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

## CARE AND FEEDING OF PREMATURE INFANTS

Preparation for the care and protection of premature infants, in order to insure them the best opportunity for survival, must be started with the first intimation that labor is to begin, if spontaneous; and, when labor is to be induced, the infant, as well as the mother, should receive the best thought of the physician. The infant must be protected from the dangers of refrigeration, skilled nursing care must be supplied, and it must receive a suitable diet.

## PRESERVATION OF BODY TEMPERATURE

Even though the mother may be so situated as to receive proper attention in the home, if facilities for caring for the infant are not at hand, the confinement should be conducted in a properly equipped hospital.

Syphilis should be suspected as a possible cause in all cases of premature birth.

The labor should be conducted with the strictest attention to asepsis, because of the high mortality following infections in this class of infants. Every effort should be made to prevent chilling of the infant immediately after birth. Owing to the instability of the heat-regulating centers, the infant's body temperature is rapidly affected by its surroundings. It should be received in a heated blanket and placed in an improvised heated basket or incubator bed, as soon as possible after the cord has been severed. The face alone should be left exposed. Protection is best afforded by a cotton pack, or, better still, by woolen garments. A nurse or another person experienced in the handling of infants should be assigned to the care of the baby and give it her entire attention so that spells of asphyxia and cyanosis may receive the immediate attention of the physician. As a rule, the initial bath should be omitted until the infant, if it is a small one, has adapted itself to its new environment. Every effort should be directed to the prevention of overheating and burning infants, as they do not resist high temperatures to much better advantage than they do refrigeration, and they are easily burned; and burning, even though slight, would be associated with a high mortality. The room in which the infant is placed should be light and easily ventilated, without being cooled to a greater degree than may be desired. If the room temperature can be kept between 72 and 75 F., a well protected basket or crib can be temporarily heated to meet the infant's needs by surrounding it with hot water bottles placed a sufficient distance from and properly protected so that contact with the infant will be avoided. An electric pad protected by an insulated copper jacket will answer the purpose when placed under the pillow on which the infant rests. Suitably equipped obstetric departments are usually furnished with a heated bed as part of their permanent equipment. It is rarely necessary to surround the infant with a temperature greater than



from 85 to 88 F., and usually it can be reduced to 80 F. in a few days except in the case of the smallest infants. A thermometer should be placed alongside the baby under the robes used as a covering.

Aseptic nursing is imperative to the welfare of these small infants. This applies to linens, clothing, thermometers and also utensils used in the care of the baby. During the bath, whether by sponging or by tubbing, it must be protected from chilling and infection, and of equal importance is the prevention of scalding. The water should be tested by allowing the hand to remain in the water for at least thirty seconds before placing the baby in the bath tub, if it is to be tubbed. The baby should be bathed in a warm room. After the first dressing, all garments which come in contact with the body, except the napkin, should be made of a medium weight flannel, as the infant is best protected by woolen garments. As an outer garment it may be wrapped in a woolen blanket or one made from non-absorbent cotton between cheesecloth which has been quilted to protect it. A more permanent gown may be made of blanket material or eider-down in the form of a rectangle of sufficient size to surround the body and permit pinning over the feet. To this may be attached a smaller square at the top which will fold over the head and allow the face to remain exposed. A more permanent sleeping bag may be made of similar material. These have a disadvantage of requiring considerable handling of the infant for changing napkins and inspecting the genitalia. The most practical garments for the infant consist of a light-weight wool flannel undershirt with blind sleeves, so that the hands remain covered. Above this an overshirt of a heavier flannel or French piqué is to be worn. The extremities are wrapped in a flannel pinning skirt or blanket, fastened to the overshirt by small safety pins. The advantage of this type of clothing is that soiled napkins can be removed without exposing the upper part of the body, and the handling of the infant is at a minimum. A small pad of cotton should be placed inside the napkin so that the outer clothing may be better protected. The diaper should be changed as soon after soiling as possible, and this in itself will require regular inspection. It should therefore be dressed accordingly. The importance of properly clothing these infants becomes evident when consideration is given to the fact that they stand handling very poorly. As the infant becomes older, its clothing should be similar to those used in full term infants so that it may have freedom for its extremities. The position of the infant should be changed at stated intervals in order to prevent hypostasis.

#### WORK OF THE NURSE

The nurse should appreciate the requirements of her charge. She must be willing to make necessary sacrifices while the infant is passing through its first critical days, and must be properly instructed to meet the emergencies of asphyxia and to counteract the spells of cyanosis. These will require almost constant diligence. She must also be possessed of good judgment in the matter of feeding, in order to avoid both underfeeding and overfeeding. She must also be able to appreciate the indications for and the methods of administering catheter feeding, as well as the simpler methods by use of the medicine dropper or miniature feeding flasks. She should be instructed in the proper preparation and tubbing of the infant for its bath, the giving of low colonic flushings, and the application of artificial respiration.

#### FEEDING

The majority of prematurely born infants will not survive artificial feeding; therefore, the difficulty in the interpretation of the needs of the individual infant should lead to the conclusion that a supply of breast milk is imperative to fulfil the food requirements of these infants in order to insure a low mortality. The administration of the feedings offers no difficulties which cannot be overcome if the infant is viable, persistent vomiting is absent, and breast milk is at hand. No definite rules can be outlined as to the quantity to be given at each feeding, and the same statement applies to the interval between feedings. This statement implies that each infant must be fed to meet its *individual* needs.

For the purpose of feeding, premature infants must be divided into two large classes: (1) those able to nurse directly from the breast, and (2) those which will require hand feeding. If the infant is sufficiently developed to nurse from a well formed nipple, it should be placed at the mother's breast two or three times during the second twelve hours after birth and, following this, at three-hour intervals. The nursing period should, however, be short at first, beginning with two or three minutes at the breast, as this will soon educate the child to expect its food at regular periods. It will also help to stimulate the mother's breasts, as well as to develop the infant's sucking muscles.

During the first days, until there is sufficient flow of milk, the infant must receive its breast milk from another source. The necessity of an early supply of food cannot be overemphasized, as even the better developed infants do not withstand prolonged starvation. When a wetnurse is available and her infant is at hand, her baby can be used to stimulate the breasts of the mother, and the premature infant can be placed on one of the breasts of the wetnurse. In the case of very weak infants, the breast designated for its use can be made to secrete more freely by placing the wetnurse's baby on the opposite breast during the feeding period. As a weak infant may receive only a very limited amount of milk, even after a prolonged period at the breast, a proper scale is a necessary part of the equipment, so that it may be weighed before and after feeding. There is far less danger from overfeeding because a too rapid flow or an excessive amount usually results in regurgitation, and this can easily be remedied by shortening the period at the breast. The capacity of the stomach in some of the smaller infants, even though they are able to nurse at the breast, is such that shorter intervals may be necessary. They may be nursed at two or two and one-half hour periods.

#### FEEDING DURING THE FIRST DAY

During the first day, milk may be withheld for twelve hours until the respiratory and circulatory functions are well established. During the second twelve hours, from one to three feedings of breast milk may be started if the infant's condition warrants.

#### FEEDING FROM THE SECOND TO THE TENTH DAY

For practical feeding purposes, the second to the tenth days may be grouped as the second feeding period. From the second day the infant should be fed regularly, day and night, the number and time of feedings depending to a great extent on (1) whether the food is given with or without the use of a catheter; (2) the gastric capacity, and (3) the infant's general condition.



Further fluids, preferably inert, such as water or 1 per cent. lactose solution, are administered to compensate for the loss of body fluids through the kidneys, bowels, lungs and skin. The infant requires about one sixth of its body weight of water, inclusive of that contained in the milk, in twenty-four hours while in the heated bed. Such quantities, however, should not be attempted on the first days; usually it will be possible to approximate one eighth of the body weight by the fourth day. The early feedings must necessarily be small, and the increases gradual.

*Each infant must be fed individually*, as it is impossible to formulate definite rules for feeding, at least during the first ten days. The physician must have a definite idea of (1) the minimal food requirements for life; (2) the amount of food necessary to maintain at least a stationary weight, and (3) the amount of food needed to meet the requirements for growth and development.

Approximately one seventh of the body weight of fluids and human milk of a food value of 70 calories per kilogram every twenty-four hours are required to maintain life. Little can be expected in the way of weight increase until 90 calories is reached; and, depending on the weight, body surface, and physiologic development, the later needs of infants will approximate from 100 to 140 calories per kilogram of body weight.

Infants, to fulfil all their needs, will therefore require from 140 to 200 c.c. of breast milk per kilogram, or from one seventh to one fifth of their body weight daily. They can, however, maintain life on 100 c.c., and hold their weight in most cases on 130 c.c. per kilogram.

Beginning (in most cases by the second day) with from 20 to 40 c.c. of human milk per kilogram of body weight, the quantity may be increased by from 8 to 15 c.c. daily per kilogram until, usually by the tenth day, feedings averaging from 80 to 140 c.c. per kilogram can be fed.

These feedings should, as rapidly as possible, be supplemented by water or sugar-water by mouth, or saline by rectum to meet the required 140 to 200 c.c. per kilogram of fluids required daily.

After the *tenth day*, in larger infants the milk can be increased more rapidly, usually by 15 and occasionally 20 c.c. per day, until from 140 to 200 c.c. per kilogram are fed, the methods of giving the food, as well as its frequency, being dependent on the general development of the infant.<sup>12</sup>

The *size of individual feedings* will vary with the method of feedings. When the infant is *catheter* fed, from six to eight feedings a day are given, with an average of from 4 to 6 c.c. for each feeding during the second day. The feedings are now increased daily by an average of 2 c.c. at each feeding. When feeding from the *bottle* or by *dropper* is employed, smaller feedings are usually given more frequently, usually from eight to ten daily, although twelve may be needed when larger feedings are not retained. Beginning with from 2 to 4 c.c., one may increase by 1 or 2 c.c. each feeding on each succeeding day, until from 140 to 200 c.c. per kilogram daily is reached.

The food and water to be administered should be noted in writing for the nurse's instruction each day, after a thorough inspection of the infant and its clinical chart.

*The diet of a premature infant making a satisfactory gain in weight should not be changed arbitrarily without a well-defined indication.*

*Initial Weight Loss.*—The lower the birth weight, the greater is the percentage of weight loss to be expected. Artificially fed infants lose more weight than breast-fed infants in whom the diet is started early. An average loss of not more than 8 to 12 per cent. of the birth weight may be considered satisfactory. By regular administration of inert fluids during the first days, the total loss can frequently be reduced to 5 per cent.

*Daily Gains.*—These are not necessarily in proportion to the changing quantity of milk administered, as many factors—the condition of the bowels, the quantity of urine passed, the temperature of the infant's surroundings, and numerous others—will necessarily influence the weight.

An average daily gain greater than 20 gm. is unusual when the infant's food is limited to one fifth of its body weight. Although occasionally an infant holds its birth weight, most infants do not regain their birth weight before the end of the second or third week.

In the very small premature infants, an average daily gain of from 10 to 15 gm. with a doubling in birth weight in from seventy-five to 100 days may be considered satisfactory. In the larger infants, a gain of from 15 to 20 gm. may be expected with a doubling in birth weight in from fifty to 100 days. The birth weight is frequently trebled within 180 days.

(To be continued)

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## New and Nonofficial Remedies

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THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

**BACILLUS ACIDOPHILUS MILK-LEDERLE.**—Whole milk cultured with *Bacillus acidophilus*. It contains not less than fifty million of viable organisms (*B. acidophilus*) per cubic centimeter.

*Actions and Uses.*—See Lactic Acid-Producing Organisms and Preparations (New and Nonofficial Remedies, 1922, p. 156). During recent years reports have been published which indicate that the growth in the intestinal canal of the normally present *Bacillus acidophilus* may be increased so as to make it the predominating organism by the administration of milk inoculated with *B. acidophilus*, by the administration of viable cultures of the *Bacillus acidophilus* in conjunction with lactose, or by the administration of lactose alone. The therapeutic value of the administration of cultures of *B. acidophilus* is still in the experimental stage.

*Dosage.*—For adults, 1,000 Cc. of bacillus acidophilus milk-Lederle per day, increased or decreased to meet requirements. When employed in infant feeding, it may be diluted with boiled water. *Bacillus acidophilus* milk-Lederle must be kept on ice and should be used within one week of the expiration date which appears on each package.

Lederle Antitoxin Laboratories, New York. No U. S. patent or trademark.

Whole milk is sterilized at 100 C. for 2 hours, cooled to 37 C. and inoculated with a twenty-four hour culture of *B. acidophilus*. After inoculation, the milk is kept at 37 C. for from 20 to 24 hours until an acidity is reached so that 10 Cc. will require for neutralization 11 Cc. of tenth-normal sodium hydroxide solution, using phenolphthalein solution as indicator. The product is then cooled to 5 C., agitated until homogeneous and transferred to 200 Cc. bottles, which are closed with seals. The strain of *B. acidophilus* used is one isolated by Rettger. To insure its adaptability to intestinal implantation, the bacillus is freshly isolated from intestinal contents as frequently as is necessary.

12. One kilogram equals 2½ pounds; 30 c.c. equals 1 ounce; 4 c.c. equals 1 dram; 1 ounce of breast milk contains 21 calories; 100 c.c. of breast milk contains 70 calories.



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SATURDAY, FEBRUARY 3, 1923

## ANIMAL AND VEGETABLE PATHOLOGY IN RELATION TO HUMAN DISEASES

At the recent meeting of the British Medical Association, a special session was devoted to the relation of animal and vegetable pathology to human diseases.<sup>1</sup> Vegetable diseases, so far as we know, have no significance as sources of human disease, if intoxication with the products of fungus infection, as in ergotism, is excepted. These diseases do, however, offer many problems that are of importance as sources of information concerning human pathology. Thus, several plant diseases are produced by filtrable viruses. Much of our knowledge concerning these important pathogenic agents we owe to the discovery, made as long ago as 1892, that the mosaic disease of tobacco is produced by an invisible agent that passes through filters that are impervious to ordinary bacteria. Several infectious diseases of plants share with animal diseases the peculiarity of insect transmission, and in at least one of them, it seems, part of the life cycle of the ultramicroscopic organism is consummated within the insect host. Thus, the "curly top" disease of beets cannot be conveyed by the insect until several hours after the virus has been taken up, presumably because this period is required to accomplish a certain part of its life cycle. Although the filtrable viruses, in plants as in animals, are usually not microscopically visible, in some mosaic diseases bodies have been found that resemble such structures as Negri bodies, *Cytorrhycles variolae* and *Rickettsia*. Even if plant infections are not transmissible to man, the plant pathologists can lay claim to having been first to show that a disease may be produced by a filtrable invisible virus, and that diseases may be transmitted by insects. They were first to show that either resistance or susceptibility to infection may be hereditary, and that this property may be transmissible in strict accordance with the mendelian principles, as Maud Slye claims for mouse cancer. However, despite many examples of natural immunity in plants, no examples are known in plant pathology of the conferring of artificial immunity by inoculation of a

susceptible plant with a weak strain of an otherwise virulent parasite. Parasitic attack in plants is usually localized, and there is no mechanism for the circulation to other parts of the host plant of any antibodies that may be produced in consequence of this attack. Plants attacked by parasitic diseases not infrequently recover, but this is no guarantee against attack again in the immediate future.

In this country the important work of Erwin Smith on the crown gall disease of plants is well known. Notwithstanding the numerous points of resemblance which the lesions of crown gall bear to animal tumors, the British plant pathologists who participated in this discussion seem unwilling to accept the conclusion that it is established as a true neoplasm; hence observations on its etiology cannot be accepted as evidence as to the etiology of human neoplasms. Brieryly says:

The unbridgeable gulf between the morphology, anatomy, and physiological processes of animals and plants resulting from the complete divergence in their evolutionary sequences must be recognized. There is in animals nothing comparable with the rigid-walled cells of plants, and in plants nothing comparable with the blood vascular system, the lymphatic, alimentary, nervous, muscular, and skeletal systems. It is these characteristic features that give rise to and make possible the specific pathological responses associated with disease. Occasionally interesting but purely superficial general parallels exist; but to find exact analogies in development and structure, and even more to trace exact correspondences in the details of the morbid histology of diseased host tissues of animals and plants, and to reason from one to the other is to falsify and confuse every issue. These differences are fundamental, and comparative investigations can only have value if they are borne acutely in mind. The conclusion to which I am drawn from a comparative review of diseased states in animals and plants is that as regards the host tissue responses there is little if anything in common save the most general reaction of wound healing.

With animal diseases the matter is altogether different. Hobday recalls that even in Great Britain there are at least these infectious diseases of animals which are indisputably communicable to man: glanders, rabies, anthrax, tuberculosis, foot-and-mouth disease, cowpox, mange of all animals (horses, cattle, dogs and cats), ringworm (especially of the horse, calf, cat and mouse), and certain forms of seborrhea (such as blacksmiths contract from handling horses with greasy legs). To this group must be added, as diseases or infections common to the two, which animals may transmit to man, diphtheria, infections with *Bacillus enteritidis* and *Bacillus paratyphosus* B, tetanus, and gas bacillus infection, to say nothing of the numerous animal parasites, such as trichinae, echinococcus and the tapeworms. In this country we must also consider plague, Rocky Mountain spotted fever, Malta fever and infections with *Bacterium tularensis*. *Bacillus abortus* of Bang is also under suspicion as a source of contagion from cattle, and apparently is related to the organism that causes Malta fever, if not identical with it.

Glanders and rabies, two of the most horrible diseases that can affect man or beast, show what can be done by organized collaboration of the medical and the

1. Brit. M. J. 2: 955 (Nov. 18) 1922.



veterinary professions. Each is primarily a disease of animals, and comes to man only from them. Let the veterinary scientist eradicate glanders from his patients of the horse tribe, and rabies from the canine race, and neither of these diseases will appear in man. As evidence of this, the story of rabies in Great Britain is most instructive. Aided by their island location and adequate laws, the energetic watchfulness of the veterinary officials of the ministry of agriculture kept Great Britain free from rabies for nearly twenty years; and until some thoughtless person committed the stupid and criminal offense of surreptitiously smuggling a dog (which happened to be infected and in the incubative stage) into the country, the much dreaded disease existed in that country only in name. The first case was reported in the district of Plymouth about May, 1918, and in 1919 alone 179 persons were bitten by animals in the scheduled areas, forty-six of them by animals proved to be rabid. It is a triumphant tribute to the memory of Pasteur that there have been no deaths in England from hydrophobia since his day.

The record of glanders is not much less brilliant. Twenty years ago, 2,370 horses were destroyed in Great Britain for glanders in one year, whereas in the first half of 1922 no case was reported. Not a single case of human infection from glanders was reported in the British army during the war, despite the great amount of contact between men and horses. The mallein test is entitled to a large part of the credit for virtually eliminating glanders as a human disease. The foregoing examples emphasize the importance of the development of the field of comparative pathology or, better, of comparative medicine, in order that all progress made in one branch of pathology may find its application in the other branches without fail and without undue delay.

#### GOATS AND MALTA FEVER IN THE UNITED STATES

According to a recent report,<sup>1</sup> goat's milk is being sold in a number of cities in the United States, usually as a fancy article and at a high price. It is consumed largely by infants and invalids, particularly by patients with tuberculosis. This may come as a surprise to readers who have never considered the fact that in some parts of the world the milch goat is a competitor of the dairy cow. The small quantity of milk that is used, chiefly by children, in the dry summer countries of Europe is largely supplied by goats, which can live on a poorer and drier diet than is possible for the cow. It was recently reported<sup>2</sup> that in the whole of Greece there are only 4,000 cows, most of them near Athens, goats being more important as a source of milk. Some varieties of milch goats in Mediterranean countries are said to give a greater amount of milk in proportion to

their weight and food consumed than does any other milk producer. From the standpoint of chemical composition and nutritive value, in which it closely resembles the mammary secretion of the cow, goat's milk has much to recommend it. For some time, however, it has been known that this fluid may carry the infectious agent of Mediterranean, undulant, or Malta fever. How this disease, due to *Micrococcus melitensis* of Bruce, disappeared from Gibraltar, pari passu with the disappearance of Maltese goats, has become an instructive chapter in the history of preventive medicine.<sup>3</sup> That Malta fever is spread chiefly through the use of goat's milk was clearly established in the reports of the British commission for the investigation of the disease. Before the conclusions of this commission were announced in 1905-1907, this common mode of infection was not appreciated. Our present knowledge makes the prevention of the disease a comparatively simple problem. The infection should be eliminated from goats; but until this is done, all milk from this species should at least be pasteurized before being applied to human dietary uses.

That the United States is not free from the menace of Malta fever was made clear by the investigations of Gentry and Ferenbaugh<sup>4</sup> of the U. S. Army, who reported in 1911 that the disease had in all probability been present for a quarter of a century in the older goat raising sections of Texas. This endemic center embraced an area approximately 300 miles along the Rio Grande, extending 90 miles to the north. Serologic tests on more than 100 goats gave positive reactions for the organism of Malta fever in about one fifth of these animals. The human patients gave a history of drinking unboiled milk, or were associated with the goat-raising industry. Even today the menace continues. Surgeon Lake<sup>1</sup> of the U. S. Public Health Service has reported fully a recent outbreak, of which mention was made several weeks ago in THE JOURNAL. More than thirty authentic cases were discovered at Phoenix, Ariz., and Lake concludes that conditions favorable for the existence and spread of Malta fever are present in all the southwestern states. He asserts that goat's milk is being sold in a number of cities in the United States. As Malta fever, according to the government experts, has in all probability existed in Texas for at least thirty-six years and in Arizona for at least fourteen years, and absolutely authentic cases have been known in Texas since 1911 and in Arizona since 1912, effective measures for prevention are clearly called for. Lake suggests that the prohibition of the sale of goat's milk in cities where an ample supply of cow's milk is available should be seriously considered by health officers. Where it is necessary to allow the sale of goat's milk to secure sufficient fresh milk, efficient pasteurization under constant supervision by

1. Lake, G. C.: Malta Fever in Southwestern United States, Pub. Health Rep. 37: 2895 (Nov. 24) 1922.

2. Smith, J. R.: The World's Food Resources, New York, Henry Holt & Co., 1919, p. 249.

3. Bruce, D.: Osler's Modern Medicine 3: 17, 1907.

4. Gentry, E. R., and Ferenbaugh, T. L.: Endemic Malta Fever in Texas, J. A. M. A. 57: 889, 1045, 1127 (Sept. 9, 23, 30) 1911.



the health authorities should be required. If such a provision seems unduly drastic, it should be recalled that from the clinical symptoms alone the disease may remain unrecognized for a long time or may be confused with other infections. It is particularly insidious in infants. Consequently, prophylactic or preventive measures need to be doubly exacting; and the goat certainly is not indispensable as a source of milk in this country.

#### THE BILE AND PANCREATITIS

Although the phenomena of the occurrence of pancreatitis have been extensively observed and made the subject of exhaustive reports, the actual cause of the disease still remains one of the unsolved problems of pathology. Various sorts of experimental interference with the normal functions of the pancreas may lead to pathologic conditions and symptoms characteristic of pancreatitis; in fact, the agencies that lead to these manifestations may be so varied and seemingly unrelated in character that this fact of itself has served to confuse the student of the subject. At one time it seemed as if the entrance of infectious micro-organisms through the duct of Wirsung must be the predisposing cause of pancreatitis, whether acute or chronic. Some writers are strongly of the opinion that the possible infecting organisms are brought to the pancreatic tissue by way of the lymphatics. Such views were formulated at a time when bacteriology was the favorite domain from which to recruit the causes for obscure diseases. There seems to be little doubt, however, that cases of hemorrhagic pancreatitis occur in which infection has not been demonstrable despite careful search.

Other theorists have charged to trauma the stasis of the pancreatic juice, the acute inflammation of the gland and the consequent escape of enzymes held responsible for the fat necrosis. Experimentally, this outcome has followed injections of quite unlike substances into the ducts of the pancreas. By others, who perhaps constitute the majority of the writers on this subject, particular emphasis has been placed on the etiologic importance of gallstone and gallduct disease. They postulate a reflux of bile into the pancreatic duct, with the consequent sequence of familiar untoward symptoms. An elaborate investigation of such a possibility has been completed recently at the Mayo Foundation laboratories by Mann and Giordano.<sup>1</sup> They studied the relationship of the common bile duct to the pancreatic duct and their mode of entrance into the duodenum in man in order to determine the percentage of instances in which there would be an anatomic basis for the foregoing hypothesis. The data conclusively prove that the number of instances in which the anatomic arrangement in the relationship of the two ducts would permit bile to pass into the pancreatic duct is very small. The other possibility that the sphincter at

the duodenal end of the common bile duct could contract and convert the two ducts into a continuous channel has been investigated. Here, too, it is shown that in most instances in man the sphincter is located at a point at which contraction will close both ducts and will not convert them into a continuous channel. In a very small percentage of instances a small bundle of muscle fibers is found in a position where possibly it could convert the two ducts into a continuous channel.

Even when sterile bile is introduced into the pancreatic duct at a pressure comparable with the maximum that might be expected in the common bile duct, the resulting damage was in no case identical with typical hemorrhagic pancreatitis. Indeed, on careful investigation the indications are that reflux of bile into the pancreatic duct is at most rarely the cause of the disease. This negative outcome of the search should not disappoint or discourage the investigator. It is a step in advance when one knows what not to expect. He can then look farther.

#### NEW FACTS ABOUT SALICYLATES

The widespread use of salts and other derivatives of salicylic acid in medical practice, as well as by the undirected layman, justifies the conviction that these drugs have therapeutic potencies of real worth. Their vogue is not merely a passing fad stimulated by popular advertisements or some other temporary device of exploitation. The compounds of salicylic acid continue to retain recognition, not because their pharmacology has been clearly formulated, but rather because somehow they seem to "produce results." For this reason it is interesting and all the more provocative of further study to learn how the traditional or assumed explanations of therapeutic reaction are being shattered by the results of current investigations. Thus the claims made for a superiority of the "natural" salicylates derived from oil of wintergreen or oil of sweet birch versus the "synthetic" manufactured in the chemical laboratory have been negated in the extended investigation of the subject undertaken under the auspices of the Council on Pharmacy and Chemistry of the American Medical Association.<sup>1</sup> Hewlett,<sup>1</sup> who summarized results of a clinical investigation (carried out by physicians with hospital facilities who had been supplied with "natural" sodium salicylate and "synthetic" sodium salicylate in such a way that they did not know which of their samples were "natural" and which were "synthetic") reported that there is no difference between the natural and the synthetic product so far as observable results are concerned. The natural salicylic acid has been many times as expensive as the synthetic.

1. Mann, F. C., and Giordano, A. S.: The Bile Factor in Pancreatitis, *Arch. Surg.* 6: 1 (Jan.) 1923.

1. Waddell, J. A.: A Comparative Investigation of the Effects and Toxicity of Sodium Salicylate of Natural and Synthetic Origin, *Arch. Int. Med.* 8: 784 (Dec.) 1911. Eggleston, Cary: The Relative Value of the "Natural" and the Synthetic Salicylates, *J. A. M. A.* 59: 2057 (Dec. 7) 1912. Hilpert, W. S.: The Purity of Commercial Sodium Salicylate, *ibid.* 60: 1137 (April 12) 1913. Hewlett, A. W.: Clinical Effects of "Natural" and "Synthetic" Sodium Salicylate, *ibid.* 61: 319 (Aug. 2) 1913. Report of the Council on Pharmacy and Chemistry: Natural and Synthetic Salicylates, *ibid.* 61: 979 (Sept. 20) 1913.



Salicylic acid is known to be inhibitory to bacterial development. Consequently, it seemed likely at first glance that the salicylates exert some antiseptic effect on micro-organisms that have invaded the tissues, as is the case in some of the rheumatic fevers. The bactericidal action of salicylic acid is far more pronounced than that of salicylates, *in vitro*. The newer studies, already reported<sup>2</sup> in *THE JOURNAL*, indicate clearly, however, that the reaction of the body fluids, even in localities where foci of bacterial invasion may affect the immediate environment of the bacilli, is never adequate to insure a hydrogen ion concentration requisite for the development of bactericidal power from salicylates. In other words, it is impossible for the free acid to occur in the tissues or body fluids in sufficient concentration to exert any marked bactericidal action.

Again, it has been conceived that the salicylates may increase the resisting power of the body by stimulating the formation of immune substances. In this way the drug might have a most potent influence in lowering the vigor of the etiologic microbial agents in cases like rheumatic fever. Swift<sup>3</sup> has been unable to substantiate such an hypothesis. When animals injected with *Streptococcus viridans* were treated with sodium salicylate, they showed diminished complement-fixing antibodies, agglutinins and hemolysins, compared with the untreated controls. Swift therefore frankly asserts that the beneficial effects of sodium salicylate in rheumatic fever patients probably cannot be attributed to an increased production of circulating immune substances against the infectious agent. It is a significant fact that few if any drugs or chemicals are known definitely to enhance the formation of immune substances in the organism, although the records of attempts in this direction are so few as to make any generalizations at present unjustified, if not hazardous. Many substances are, of course, well known to depress immune substance formation.

The antiphlogistic effect of salicylates in the polyarthritides of rheumatic fever remains undenied; and their antipyretic action, due to an increased loss of body heat in febrile patients, is clearly demonstrated through Barbour's<sup>4</sup> researches. Swift reminds us that from clinical observations alone it would seem that salicylates either lower the infectivity of the etiologic agent of rheumatic fever by a direct action on the virus, or increase the ability of the body to react against infection. For the latter alternative the evidence is

now unfavorable. The drug may, of course, have a bacteriostatic power. Swift properly points out—and this should be clearly emphasized—that the facts at hand offer no contraindication to the administration of salicylates to patients suffering from infectious diseases. There is nothing in his experimental findings to indicate that the salicylates are deleterious in infection simply because they decrease immune substance formation. The decreases observed were never profound; and the salicylated animals always still produced some immune substances. It is probable, Swift adds, that the latter in the circulating fluids are not the only factors concerned in the process of recovery. The same mechanism, he concludes, that makes an infectious agent less antigenic might, at the same time, make it less pathogenic. It is possible that this effect may be more marked in rheumatic fever than in other infections; hence the more striking effect of the drug seen in this disease.

## Current Comment

### COMBINED URIC ACID IN THE BLOOD

Nearly a century and a half has elapsed since Scheele first isolated uric acid from urine and from urinary calculi. Only a few years later, Pearson demonstrated the presence of the same substance in the tophi of gout. In the subsequent period, various hypotheses regarding the physiologic significance of uric acid in the organism have been promulgated. Many of them have been almost fantastic in character, so that they have survived their period of advocacy by a short time at most. Others have persisted longer; thus, only a few years ago uric acid was held responsible for many of the ills to which human flesh is heir. Still other conceptions have become part of the enduring structure of knowledge regarding this unique biochemical substance. Instead of regarding uric acid as an incomplete product of the oxidative disintegration of simple proteins in the body, we have learned to recognize in it an end-product of the metabolism of purin precursors in man. Whatever the intermediate reactions may be, an increased output of uric acid is demonstrably an indication of an increased transformation of purin-yielding products, whether the latter are derived from the diet or have an endogenous origin in the cells and tissues of the body. Another acquisition of more recent years has been the demonstration that uric acid circulates in fairly constant concentration in the blood of man, an increment in the amount being indicative of a pathologic condition. The latest contribution is the proof of the presence of "combined" uric acid in the blood—a result clearly suggested by S. R. Benedict<sup>1</sup> several years ago. His investigations<sup>2</sup> demon-

2. Clinical Effects of "Natural" and "Synthetic" Sodium Salicylate, *Current Comment*, J. A. M. A. **61**: 352 (Aug. 2) 1913; "Natural" and Synthetic Salicylates, *ibid.* **61**: 968 (Sept. 20) 1913; Salicylates, Uric Acid and Gout, *ibid.* **65**: 881 (Sept. 4) 1915; The Action of Salicylates, *ibid.* **66**: 122 (Jan. 8) 1916; The Fate of Salicylates in the Body, *ibid.* **73**: 1289 (Oct. 25) 1919; Is Free Salicylic Acid Liberated from Salicylate in the Circulation? *ibid.* **77**: 2064 (Dec. 24) 1921; The Role of Salicylates in Acute Rheumatic Fever, *ibid.* **78**: 1897 (June 17) 1922.

3. Swift, H. F.: The Action of Sodium Salicylate upon the Formation of Immune Bodies, *J. Exper. Med.* **36**: 735 (Dec.) 1922.

4. Barbour, H. G., and Devenie, M. M.: Acetylsalicylic Acid and Heat Regulation in Normal Individuals, *Arch. Int. Med.* **24**: 617 (Dec.) 1919. Barbour, H. G.: Acetylsalicylic Acid and Heat Regulation in Fever Cases, *ibid.*, p. 624.

1. Benedict, S. R.: Uric Acid and Its Relations to Metabolism, *Harvey Society Lectures for 1915-1916*, Philadelphia, J. B. Lippincott Company, p. 362.

2. Davis, Alice R.; Newton, Eleanor B., and Benedict, S. R.: The Combined Uric Acid in Beef Blood, *J. Biol. Chem.* **54**: 595 (Nov.) 1922. Newton, Eleanor B., and Davis, Alice R.: The Distribution of the Combined Uric Acid in the Corpuscles of Beef Blood, *ibid.* **54**: 601 (Nov.) 1922; Combined Uric Acid in Human, Horse, Sheep, Pig, Dog and Chicken Blood, *ibid.* **54**: 603 (Nov.) 1922.



strate the substance to be, in the case of beef blood, a compound of uric acid and a pentose sugar, ribose. Curiously enough, it is present only in the red corpuscles. Evidences of the presence of combined uric acid have been found in each species of animal studied. The quantity in beef blood far exceeds that in any other animal blood so far analyzed. Next in quantity would appear to be that of human blood. The physiologic significance of this newly demonstrated compound remains to be elucidated. In any event, the story of uric acid in the body has not yet been completely unfolded.

### GINSENG

Ginseng is a plant of the genus *Aralia*, the root of which is highly valued as a medicine among the Chinese. It has found no place in our modern therapy, and one will search in vain for reference to it in the present day books on pharmacology. However, every product which has a reputation of having attained use in folk medicine will be found mentioned in recurring suggestions as to possibly neglected drugs. The feeling is widespread—and not entirely without historical justification—that plants which have secured some reputation for remedial potency, even though it may have been attained in the days anteceding modern scientific research, deserve careful consideration. The persistence of certain customs in the healing art, so it is argued, is more likely to be associated with some useful potency. In the case of ginseng, the attempts to establish this have been essentially unfruitful. Occasionally it has been reported that infusions or extracts of the root are diuretic. The most recent study of Inada and Takamizu<sup>1</sup> at the Keijo Medical College in Chosen shows that large quantities of extracts of ginseng may slightly increase the output of the urine, but that there is no effect whatever on nitrogen metabolism. Even the quack would find it difficult to discover a tenable potency on the basis of which the use of ginseng could be "boosted."

## Association News

### THE SAN FRANCISCO SESSION

#### Rates and Routes of Transportation to San Francisco and Return

The American Medical Association is advised that effective May 15 and daily thereafter until September 30, western railways will place on sale round trip tickets to San Francisco with a return limit of October 31. These tickets will permit stopovers at any point on the going or return trip merely by informing the conductor at which points passengers desire to stop. Rates from the cities named are:

From Chicago .....	\$86.00
From Kansas City .....	72.00
From St. Louis .....	81.50
From Omaha .....	72.00
From St. Paul .....	87.50

Pullman rates from Chicago are:

Lower berth, Chicago to San Francisco.....	\$23.63
Upper berth, Chicago to San Francisco.....	18.90
Compartment, Chicago to San Francisco.....	66.75
Drawing room, Chicago to San Francisco.....	84.00

If stopovers are made on the outward trip, a small additional sum is to be added to the Pullman rates quoted.

1. Inada, S., and Takamizu, J.: Studies on the Influence of Korean Ginseng on Metabolism, *Japan M. World* 2: 343 (Dec. 15) 1922.

Lines east of Chicago made low rates to the Pacific Coast and return in the summer of 1922, and it is thought that such rates will be announced for the summer of 1923.

Those who go to San Francisco from Chicago have the choice of a large number of routes, some of which are as follows:

1. C. B. & Q. Railroad to Denver; D. & R. G. W. Railroad to Salt Lake; Western Pacific or Southern Pacific Railroad to San Francisco.
2. Rock Island Railroad to Denver; D. & R. G. W. Railroad to Salt Lake; Western Pacific or Southern Pacific Railroad to San Francisco.
3. C. & N. W. Railroad to Omaha; Union Pacific Railroad to Ogden; Western Pacific or Southern Pacific Railroad to San Francisco.
4. C. B. & Q. Railroad to Denver; Union Pacific to Ogden or Salt Lake; Western Pacific or Southern Pacific Railroad to San Francisco.
5. C. B. & Q., Rock Island, or C. & N. W. and Union Pacific Railroad to Denver; D. & R. G. W. or Union Pacific Railroad to Salt Lake; Union Pacific to Los Angeles; Southern Pacific to San Francisco.
6. Santa Fe Railroad to Los Angeles; Southern Pacific Railroad to San Francisco.
7. Rock Island Railroad to El Paso; Southern Pacific Railroad to Los Angeles; Southern Pacific Railroad to San Francisco.
8. I. C. Railroad to New Orleans; Southern Pacific Railroad to Los Angeles; Southern Pacific Railroad to San Francisco.

Going by any of the above named routes, passengers may return the same way or by any of the following routes, without additional charge:

1. Southern Pacific Railroad to Los Angeles; Santa Fe (Grand Canyon Route) to Chicago.
2. Southern Pacific Railroad to Los Angeles and El Paso; Rock Island Railroad to Chicago.
3. Southern Pacific Railroad to Los Angeles; Southern Pacific to New Orleans; I. C. Railroad to Chicago.
4. Southern Pacific Railroad to Los Angeles; Union Pacific to Salt Lake; D. & R. G. W. Railroad to Denver; C. B. & Q., Rock Island Railroad or any direct line to Chicago.
5. Southern Pacific to Los Angeles; Union Pacific Railroad to Ogden; Union Pacific to Omaha; C. B. & Q., C. & N. W., or C. M. & St. P. Railroad to Chicago.
6. Southern Pacific Railroad to Los Angeles; Santa Fe (Grand Canyon Route) to Denver; any line to Chicago.

Those who wish to return from San Francisco by way of Portland, Seattle and the North Pacific Coast will be required to pay \$18 additional to the rates quoted, and tickets may be secured to read returning from San Francisco by the following routes:

1. Southern Pacific Railroad, San Francisco to Portland; Northern Pacific (Yellowstone Park Route) to St. Paul; any line to Chicago.
2. Southern Pacific Railroad, San Francisco to Portland; Great Northern (Glacier Park Route) to St. Paul; any line to Chicago.
3. Southern Pacific Railroad, San Francisco to Portland; S. P. & S. Railway to Spokane (Columbia River Route); Northern Pacific or Great Northern to St. Paul; any line to Chicago.
4. Southern Pacific to Portland; Northern Pacific, Great Northern or Union Pacific Railroad to Seattle; Great Northern or Canadian Pacific Steamship Company to Vancouver; Canadian Pacific Railroad to St. Paul; any line to Chicago.
5. Southern Pacific Railroad, San Francisco to Portland; Union Pacific Railroad to Ogden or Omaha; any line to Chicago.
6. Southern Pacific Railroad, San Francisco to Portland; Union Pacific Railroad to Salt Lake; D. & R. G. W. Railroad to Denver; any line to Chicago.

Any who wish to go to San Francisco and then to Los Angeles and return to San Francisco, Portland, Seattle and North Pacific Coast points will be required to pay \$11.40 additional, besides the \$18 required for the return trip by the northern routes.

#### An Invitation from the New Mexico Medical Society

The annual meeting of the New Mexico Medical Society will be held in Albuquerque, June 19-21. The local commit-



tee of arrangements for that meeting and the secretary of the New Mexico Medical Society cordially invite Fellows of the American Medical Association going to the annual session in San Francisco to stop over at Albuquerque. Entertainment will be provided for them by the local committee of arrangements and the chamber of commerce of Albuquerque. Parties on special trains en route to San Francisco are invited to arrange their schedules so that at least one day may be spent at Albuquerque. Dr. J. W. Elder, secretary of the New Mexico Medical Society, extends for that society an invitation to the members and Fellows of the American Medical Association to spend as much time as can be arranged at Albuquerque during the meeting of his state medical society.

#### Special Trains to San Francisco

**MICHIGAN GOLF SPECIAL.**—Dr. W. T. Dodge, president, and Dr. F. C. Warnshuis, secretary, of the Michigan State Medical Society, have made tentative arrangements for a special train to the San Francisco Session. This train will be made up of compartment sleepers, diners, club car and observation car, and will have a barber, valet and maid. Leaving Chicago at 8 p. m., June 17, the Michigan Golf Special will arrive at San Francisco on Saturday morning, June 23. Each day stops will be made at places where good golf courses are to be found. An opportunity will be afforded for playing eighteen-hole matches. Reservations have already been made at these golf courses, and very complete arrangements have been perfected for the convenience of the passengers on this train. Members of the Association are invited to join this party and to bring their wives and other members of their families. The cost will be \$235. This will include a round trip railroad ticket, half a compartment going, meals en route, taxi and automobile charges, green fees, caddy fees and other incidentals. The party will disband at San Francisco, and the return trip may be made over one of several optional routes. The Pullman fare returning will be extra. The cost of this trip is only \$55 greater than the regular round trip fare. The party will be limited. Requests for reservations from states adjacent to Michigan may be sent to Dr. F. C. Warnshuis, Powers Theater Building, Grand Rapids, Mich.

**OHIO STATE ASSOCIATION SPECIAL.**—A special train to San Francisco has been arranged for the benefit of the members of the Ohio State Medical Association who will attend the annual session. Mr. Don K. Martin, Executive Secretary, Physicians' Building, Columbus, Ohio, will answer inquiries concerning reservations.

**THE "MEDICAL SPECIAL DE LUXE."**—The Harlan Tours, 202 South State Street, Chicago, will operate a special train to be known as the "Medical Special De Luxe," which will leave Chicago on the evening of June 16 and Minneapolis over the Soo Line on the morning of June 17. Special Pullman cars will be operated from Des Moines, St. Louis and Omaha, and will be attached to the special at St. Paul. Stops will be made at Banff, Lake Louise and Glacier in the Canadian Rockies, and interesting side trips have been arranged. Other stops will include Victoria, Seattle and Portland. One full day is to be spent on a steamer between Vancouver and Seattle, while at Portland the famous Columbia River Highway trip is planned. This train will arrive in San Francisco on Monday, June 25, but any members of the House of Delegates who may be on board will reach San Francisco on Sunday evening, June 24. Two return routes are offered, one overland direct, and the other leaving San Francisco on Friday, June 29, by way of the Big Trees, Santa Cruz, Del Monte, Santa Barbara, Los Angeles, Pasadena, Catalina Island, Salt Lake City, the Grand Canyon of the Arkansas, the Royal Gorge and Colorado Springs. In addition to this special train, the Harlan Tours will operate special cars overland direct to San Francisco, and tours by way of the Canadian Rockies and the Shasta Route, which will arrive in San Francisco before the beginning of the session. Reservations, information as to rates and schedules, and descriptive matter may be secured by addressing the Harlan Tours, 202 South State Street, Chicago, or L. H. McCormick, General Agent of the Rock Island Lines, Chicago.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**Tributes to Physicians.**—At a meeting of the state board of health in Montgomery, January 8, resolutions were passed paying tribute to Dr. S. W. Welch, state health officer, for educating the people to the extent that the death rate in Alabama from infectious diseases, notably typhoid and malaria, had been materially lowered.—Friends of the late Dr. M. W. Murray of Albany are sponsoring a movement which has as its purpose the erection of a maternity wing to the Albany Hospital, as a memorial to the physician. The estimated cost of the maternity annex would be \$50,000. Dr. Murray practiced for thirty-two years in Albany.—Dr. J. D. Dowling, health officer of Birmingham, and Dr. George A. Cryer, health officer of Calhoun County, have been appointed members of the Royal Institute of Public Health of Great Britain by Col. Sir William Smith, president of the organization.

### CONNECTICUT

**State Public Health Association.**—At the annual meeting of the association, January 10, in New Haven, the following officers were elected for the ensuing year: president, Dr. Thomas E. Reeks, New Britain; vice president, Dr. William H. Coon, Bridgeport; treasurer, James A. Marr, Bridgeport; and secretary, Dr. Charles P. Botsford, Hartford.

**Society News.**—At the annual banquet of the Bridgeport Medical Society, January 9, at the University Club, more than \$2,000 was subscribed to a fund for the erection and maintenance of a home for the society. Following the banquet, Dr. William H. Curley was elected president; Dr. F. Winthrop Pyle, vice president, and Dr. Daniel P. Griffin, secretary.—Dr. E. Everett Rowell was elected president of the Stamford Medical Society to succeed Dr. Charles B. Keeler of New Canaan, at the annual meeting.—Drs. John B. Boucher and Arthur B. Landry were elected president and secretary, respectively, of the Hartford Medical Society at the annual meeting, January 1.

### DELAWARE

**Would Merge Health and Welfare Bodies.**—A measure will be presented to the 1923 session of the legislature, authorizing the consolidation of all health and welfare commissions of the state into one body, to be known as the state health and welfare commission. This measure, which was outlined by the Delaware State Medical Society and the Homeopathic Society of Delaware and Peninsula, provides for the appointment of seven persons to act as the state health and welfare commission, four of whom shall be physicians, the other three members to be citizens representing Kent, Sussex and New Castle counties. Each member shall receive \$10 for attending a meeting, but shall not receive pay for attending more than twenty meetings. The proposed commission would be vested with all the rights, powers, duties, obligations and authority of the child welfare commission, the mothers' pension commission, the tuberculosis commission and the state board of health, and would be authorized to take over all the property, rights, credits and records of these commissions.

### DISTRICT OF COLUMBIA

**Bill to Regulate Optometry.**—The senate has passed a bill regulating the practice of optometry in the District of Columbia. The measure went through the upper body of Congress without a dissenting vote. The bill calls for the appointment of a board that shall have power to hold examinations and issue licenses for the practice of optometry in the district.

**Medical Society of the District of Columbia.**—At the annual meeting of the society held in Washington, January 3, under the presidency of Dr. Archie W. Boswell, the following officers were elected for the ensuing year: president, Dr. Luther H. Reichelderfer; vice presidents, Drs. J. Russell Verbrycke, Jr., and Edith L. Coale; recording secretary, Dr.



Coursen B. Conklin; corresponding secretary, Dr. Prentiss Willson, and treasurer, Dr. Edward G. Seibert.

**Department of Public Welfare Proposed.**—A bill to establish a department of public welfare for the District of Columbia has been introduced by Senator Spencer of Missouri. In addition to setting up a system with centralized authority for the handling of the welfare problems of the city of Washington, it contains proposals for the organization into four divisions of the functions of the department. These divisions would include mental diseases, child guardianship, corrections and administration. The bill would empower the new department to provide aid and assistance to deserving mothers with dependent children, provide for the commitment of insane and other mental defectives, establish a home for such persons in Maryland or Virginia and inaugurate clinics for the treatment and care of delinquent, dependent and neglected children.

### ILLINOIS

**Three Members of State Board of Pharmacy Suspended.**—It is reported that D. P. Siebert, D. D. Moore and R. R. Barnes, members of the state board of pharmacy, were suspended, January 29, by the director of registration and education after they had been accused by two applicants for druggists' licenses of having accepted bribes to "fix" examination grades.

**Jury Decision in License Scandal.**—It is reported that William H. H. Miller, former head of the department of registration and education, was found guilty, January 27, of selling physicians' and pharmacists' licenses to persons unfit to receive them, of raising examination grades and of selling questions in advance of the state examinations. He was fined \$1,000. Dr. N. Odeon Bourque, head of the "Chicago Medical School," where, it is asserted, doubtful candidates prepared for the examinations, was fined \$250. His license has since been revoked. Miller's son-in-law, K. A. Fries, a former official in the department, was found not guilty.

**Court Sustains Vaccination Order of Local Health Board.**—January 16, the Lee County circuit court refused to grant an injunction which was sought for the purpose of preventing the Dixon school board from carrying out an order issued by the Dixon Board of Health. The board of health order was issued at the request of field physicians of the state department of public health who had found a number of cases of smallpox in the city; it required all children to be vaccinated against smallpox or be excluded from the public schools. The plaintiffs, a group of antivaccinationists, contended that an epidemic of smallpox neither impended nor existed in Dixon; that the disease present was not smallpox; that the order of the local board of health was not technically legal, and that vaccination did not necessarily have to be external in order to meet the requirements of the ruling of the board of health. A large number of witnesses were examined, the points enumerated being particularly emphasized. The court upheld the board of health at every point and dismissed the bill for lack of equity.

### Chicago

**Dinner in Honor of Dr. Hall.**—Local physicians, graduates of Northwestern University, and students under Dr. Winfield Scott Hall, professor of physiology at Northwestern University School of Medicine, Chicago, gave a dinner in his honor at the Plaza Hotel, Danville, January 17.

**Influenza and Pneumonia Deaths.**—Fifty cases of influenza, with four deaths, and eighty-two cases of pneumonia, with fifteen deaths, reported over the week end, brought the total of influenza and pneumonia deaths in Chicago, since January 1, to 481, it was announced by Dr. Herman N. Bundesen, health commissioner.

**Memorial Services for Dr. Haines.**—Memorial services for Dr. Walter Stanley Haines, who died, January 27, were held in the upper amphitheater of Rush Medical College, January 31. Before the services the body lay in state in the laboratory of the college from 9 to 11 o'clock. All college activities were suspended for the day. Family services were held later in the week and were private. The funeral took place in the chapel at Rosehill Cemetery, February 2.

**Criminal Defectives to Be Segregated.**—Another attempt will be made to induce the Illinois Legislature to enact the bill providing for the establishment of a farm colony for criminal defectives, according to statements by Judge Trude of the morals court and Dr. William J. Hickson of the Chicago Psychopathic Laboratory. It is estimated that the

experiment will cost about \$1,000,000, but that the reduction in crime and court expenses will offset the expenditure.

**Personal.**—Dr. Carl F. Bertschinger, for more than thirty years a practitioner in Chicago, has been appointed vice consul by the Swiss government for the Chicago district. Dr. Bertschinger was born in Switzerland.—Dr. Edward H. Hume, dean of the Hunan-Yale College of Medicine, Changsha, China, addressed the Chicago Medical Society, January 24, on conditions in China.—Dr. Hiram H. Bay, for the last three years tuberculosis consultant for the U. S. Veterans' Bureau, Chicago, has resigned to accept the position of medical director of the Chicago Tuberculosis Institute.

**Survey of Charitable Organizations.**—Under the auspices of a committee appointed by the Chicago Council of Social Agencies and representatives of 158 social service agencies, and financed by the Commercial Club of Chicago, an intensive study of methods of financing the philanthropic and charitable organizations and institutions of Chicago will be undertaken. For the purposes of this study, organizations whose financial support comes from private sources have been classified in eight functional groups: child welfare, family welfare, health service, homes for adults, neighborhood welfare, protective, correctional and legal service, work for boys and girls, and miscellaneous organizations.

### INDIANA

**Ophthalmologists Elect.**—At the annual meeting of the Indiana Academy of Ophthalmology and Otolaryngology, in Indianapolis, January 18, the following officers were elected: president, Dr. C. Norman Howard, Warsaw; vice presidents, Drs. A. L. Marshall, Indianapolis, and Dr. R. W. Cochran, Madison, and secretary-treasurer, Dr. B. J. Larkin, Indianapolis. Dr. John Green, Jr., St. Louis, addressed the meeting.

### MAINE

**City Health Officers Appointed.**—Dr. Frederick M. Cole, Gardiner, has been appointed city physician.—Dr. Harry D. McNeil has been appointed full-time health officer of Bangor.—Dr. Lewis L. Mann has been elected city physician of Augusta.

**Bowdoin Awards Fifty-One Scholarships.**—Medical scholarships amounting to more than \$6,000 were recently awarded by Bowdoin Medical School, Portland, from the Garcelon-Merritt Fund. A large number of these scholarships were awarded to former students of the Bowdoin Medical School who are pursuing their medical education elsewhere.

### MARYLAND

**Personal.**—William Walter Cort, Ph.D., associate professor of helminthology, Johns Hopkins School of Hygiene and Public Health, has been appointed exchange professor in parasitology in the Peking Union Medical College, China, for the academic year beginning, October, 1923. Professor Cort is also planning to carry on an extensive study of hookworm disease in South China. He will head a party of four scientists to carry on research work under the auspices of the Peking Union Medical College. The expedition will be financed by the International Health Board of the Rockefeller Foundation. The other members of the expedition are Dr. George B. Grant, associate professor of hygiene at the Union Medical College; N. G. Stoll, a graduate student at Johns Hopkins School of Hygiene, and a native Chinese student. Ernest C. Faust, Ph.D., associate professor of parasitology at the Union Medical College, will exchange professorships with Dr. Cort.—Dr. Arthur M. Stimson, assistant surgeon general, U. S. Public Health Service, delivered a lecture on "Public Health Lessons from Rabies," January 23, and J. A. Le Prince, senior sanitary engineer, U. S. Public Health Service, delivered a lecture on "Malaria Control Problems" before the Johns Hopkins School of Hygiene and Public Health, January 23 and 29, respectively.—Dr. William H. Welch, director of the Johns Hopkins School of Hygiene and Public Health, has recently been elected an honorary member of the Société royale des sciences médicales et naturelles of Brussels, Belgium.—Dr. William T. Pratt has been appointed full-time county health officer for Montgomery County by the state board of health. The only other county having a full-time health official is Allegany, but the possibility of placing a full-time officer in each county in the state is under consideration by the board of health.—Dr. George Walker and Dr. Herbert C. Blake have been appointed members of the board of supervisors of city charities of



Baltimore.—The governor appointed Dr. Arthur P. Herring, Baltimore, commissioner of mental hygiene, January 13. Dr. Herring has been secretary of the state lunacy commission for the last fifteen years.

### MASSACHUSETTS

**Physician's License Suspended.**—The board of registration in medicine has suspended the certificate of registration as a physician of Dr. Arthur Stanton Hudson, Boston, for one year, following a hearing based on a complaint that Dr. Hudson was associated with an unregistered practitioner of medicine. The man alleged to have been associated with Dr. Hudson was arrested, and his case will be presented to the grand jury.

**Maternal and Infant Welfare.**—The state department of public health has appointed an advisory committee to assist in the maternal and infant hygiene work in the state. This study will be made under an appropriation of \$15,000, and the educational campaign will be carried out by means of newspapers, motion pictures and lectures. Drs. Edmond F. Cody, New Bedford; Halbert G. Stetson, Greenfield; Richard M. Smith, Boston; Fritz B. Talbot, Boston, and Dr. Robert L. DeNormandie, Boston, are members of the committee.

**Society for Mental Hygiene.**—Under the auspices of the Massachusetts Society for Mental Hygiene, the first of a series of seven weekly lectures to be given under the direction of the Connecticut Valley committee of the society was given at Springfield, January 3, by Dr. Pratt on "What Is Mental Hygiene and Why Does It Concern Everyone?" William A. Neilson, Ph.D., president of Smith College, presided. Arrangements have been made with the division of university extension of the state department of education to grant a credit certificate to students who satisfactorily complete the course. Other speakers include Drs. Douglas A. Thom, Abraham Myerson, George E. McPherson and Albert Warren Stearns.

### MICHIGAN

**Large Fine for Physician.**—According to reports, Dr. Birch J. Hamilton, formerly physician at the house of correction, Detroit, was fined \$1,000 in the federal court, recently, when he pleaded guilty to violation of the Harrison Narcotic Law.

**Sentence for Chiropractor.**—It is reported that F. O. Logic, chiropractor of Iron Mountain, under suspended sentence from the November term (THE JOURNAL, Nov. 11, 1922, p. 1195), following his violation of the court's injunction to stop practicing, has been sentenced to ninety days' hard labor in the county jail.

**University Fees Increased.**—Regents of the University of Michigan, Ann Arbor, announced, January 26, that advanced student fees will be in effect, dating from the autumn semester. The greatest increase will be paid by students in the medical school and dental college, where the increase is \$38 for residents of Michigan and \$58 for all others. For other schools and colleges, the increase is \$3.

**New Marine Hospital Proposed for Detroit.**—Detroit is to have a new marine hospital if the bill introduced by Representative Brennan successfully passes both houses of Congress. The measure presented this week authorizes the Secretary of the Treasury to sell the present United States marine hospital reservation and its properties at Detroit, and to use the proceeds for the acquisition of a new site and the construction of a new hospital with all needed facilities.

**Prof. Boldyreff at Battle Creek.**—Prof. William Nikolai Boldyreff has taken a position at the Battle Creek Sanitarium, where he will conduct research along lines similar to those followed by him with Pawlow in Petrograd. Professor Boldyreff was an assistant to Pawlow from 1902 to 1912. From 1912 to 1917 he was professor of pharmacology in Kazan, Russia. During the war, he did research work on gas poisoning, in collaboration with French and English scientists, under the direction of the Red Cross. Before coming to America, he lectured in several Japanese universities on physiology. Of about 100 contributions by him to the literature, forty have concerned problems of nutrition and the physiology of digestion.

### MISSISSIPPI

**State Medical Meeting.**—The annual meeting of the Mississippi State Medical Association will be held at Vicksburg, May 7-9, instead of at Jackson, May 8-9, as previously

announced. Lack of hotel accommodation in Jackson is the reason given by Dr. Sydney W. Johnston, president of the association, for the change.

### MISSOURI

**Health Show.**—Under the auspices of the health department, a show to visualize the fundamentals of healthful living and environment will be given in the Coliseum, St. Louis, February 24 to March 4, with the cooperation of local organizations. Thirty-five per cent. of the proceeds will be used for public health work.

**American Library Association.**—The St. Louis chapter of the association met at the Washington University School of Medicine, January 24. Dr. H. S. Gasser, professor of pharmacology, spoke on "William Beaumont," and Dr. Major G. Selig, professor of clinical surgery, spoke on "Personal Recollections of Prof. Julius Pagel." The Beaumont collection of manuscripts and books, and the Pagel collection on the history of medicine, were on exhibition.

### NEW HAMPSHIRE

**Personal.**—Dr. John M. Gile, dean of the Dartmouth Medical School, Hanover, has been appointed a life member of the board of trustees of the college, to succeed Gen. Frank S. Streeter, Concord, who died recently.—Dr. William M. Parsons, Manchester, recently celebrated his ninety-seventh birthday. Dr. Parsons is still in practice.

**City Physicians Appointed.**—At the recent elections of various boards of health, Dr. Patrick J. Kittredge was appointed city physician of Portsmouth; Dr. Deering G. Smith was reelected city physician of Nashua, and Dr. Allen P. Richmond was appointed city physician of Dover. Dr. Walter H. Lacey of Keene and Dr. Charles Henry Cook of Concord.

### NEW YORK

**Illegal Practitioners Fined.**—It is reported that Philip Kaiser, an optician of Baldwin, L. I., was fined \$250 in the court of special sessions, December 22, when convicted of practicing medicine without a license.—Reports state that Walter S. Hidder, Saranac Lake, was fined \$25, January 9, for posing as a physician in order to obtain narcotics for another man.

**A New Drug Bill.**—A bill was introduced into the legislature, January 24, by Assemblyman Maurice Bloch of Manhattan, which provides for regulation of the distribution of habit forming drugs in this state. The proposed legislation is to take the place of the Whitney Narcotic Law, the repeal of which, according to the sponsors of the bill, has resulted in an alarming increase in the number of addicts and dope sellers. The new bill would permit the commitment to an institution for treatment of persons who are habitual drug users.

**State Hospital Commission.**—Miss Harriet M. Mills, Syracuse, has been named by Governor Smith a member of the state hospital commission to succeed the late Cyrus E. Jones. This commission consists of three members—a physician, a lawyer and a layman. Miss Mills, the lay member, is the first woman appointed on the commission. Her term is for six years. Dr. C. Floyd Haviland, chairman, is the representative from the medical profession and Arleigh Richardson, the legal member. More than half of the 40,000 inmates of the thirteen civil hospitals for the insane are women, it is stated.

### New York City

**Suicides and Homicides.**—In a preliminary report for the year 1922, Dr. Charles Norris, chief medical examiner, presents statistics showing that deaths due to violence or mishap in this city have not materially increased during the past year. There were 663 suicides. The number was greater among married than among single persons, there being a total of 315 married men and 141 married women as against 151 single men and 56 single women. There were 350 homicides in 1922, as against 307 for the year 1921.

**Decision Reserved on Medical Whisky.**—The suit of Dr. Samuel W. Lambert and other physicians for an injunction restraining the government from enforcing the medical provisions of the Volstead Law was tried in the United States district court, January 26, before Judge John C. Knox. Judge Knox accepted briefs from Joseph S. Auerbach, attorney for the complainants, and John Holley Clark, Jr., assistant United States attorney, who was the defendant, but decision was



reserved. He suggested that the proper course in the case would be for the physician to violate the law, confess his fault and make it a test case.

**Health Center Completes First Year.**—The East Harlem Health Center, which represents a consolidation of health agencies in that locality, working in cooperation with the American Red Cross and the New York City Health Department, has recently completed its first year of work. Six organizations in 1921 made expenditures of about \$175,000 for health and family relief. Last year, under the direction of the health center, an immensely increased service added only \$15,000 to the total expense. The plan has made it possible to serve a much larger number of people, thereby reducing the per capita cost of health service.

**Hospital News.**—Plans have been completed for a new seven story stone and brick building to take care of 400 nervous convalescent patients who are now quartered in the original building, opened at Bellevue in 1916. The cost of the new building will be met by a fund of \$2,500,000, for which application is pending before the board of estimate. —The New York Nursery and Children's Hospital, in its annual report, shows that, for the year ending Sept. 30, 1922, only four of the 2,395 mothers who availed themselves of the obstetric service of the hospital died. Thus, the death rate was 17 per ten thousand patients for the year, while the death rate in the registration area of the United States was approximately 90 per ten thousand. There was not a death during the year among the 635 mothers cared for in their homes by the hospital outpatient obstetric department, it is stated. The hospital will celebrate its centennial this year. When founded in 1823, its plant consisted of a house rented for \$5.50 per week. Today the property is valued at \$400,000. More than 25,000 babies have been born in the hospital.

#### NORTH CAROLINA

**Board of Health Elections.**—Dr. Sidney E. Buchanan, Concord, was reappointed county physician for another term of two years, January 8.—Dr. George B. Nance, Monroe, has been reelected county physician and quarantine officer of Union County.—Dr. Robert G. Wilson, Biltmore, was unanimously reelected health officer of Buncombe County at the annual meeting of the board of health.—Drs. Robert L. Gibbon, Charlotte, and Edgar H. Hand, Pineville, have been appointed members of the board of health of Mecklenburg County.

#### NORTH DAKOTA

**Fargo Selected for Health Survey.**—Fargo has been chosen as the first demonstration center in child health work by the Commonwealth Fund Appropriations Committee, it was recently announced. The Commonwealth Fund of New York, it was announced sometime ago in THE JOURNAL, will finance a child health program in three typical cities of the United States for a period of five years, for the purpose of studying maternal and infant mortality.

#### OHIO

**Hospital News.**—The new addition to the Mercy Hospital, Columbus, was formally opened to the public, December 15. This addition, the third in as many years, was erected at a cost of \$60,000. Ground will also be broken early this year for a new nurses' home, to cost \$150,000.—A new \$50,000 building will be erected at the state feebleminded institution, Columbus, it is announced by Dr. L. J. Everich, director of the institution.—Bids closed, January 25, for a \$75,000 hospital building for Miami University, Oxford.—Dr. John H. Berry, superintendent of the Athens State Hospital for the Insane, assumed charge of the Dayton State Hospital, January 5, succeeding E. A. Baber, who recently left to take charge of the Longview Hospital, Cincinnati.

#### OKLAHOMA

**Hospital News.**—The contract has been let for the new maternity hospital to be erected in Tulsa at a cost of \$125,000. The Woman's Hospital Association is the donor.

**Personal.**—Dr. John T. Wharton, Miami, has resigned as county health officer of Ottawa County to accept the appointment of superintendent of the Soldiers' Tuberculosis Sanatorium at Sulphur, a newly completed institution.—Dr. William P. Mills was recently elected president of the Rogers County Medical Society.—Dr. Martha L. Beldsoe, Chickasha, has been reelected president of the Grady County Medical Society.

#### OREGON

**Sentence for Dr. Standard.**—It is reported that Dr. D. Everette Standard, Huntington, formerly of Nampa, Ida., was sentenced in the federal court at Portland to thirteen months' imprisonment at McNeils Island Penitentiary, for fraudulent use of the mails, when he was convicted on a charge of sending drugs intended for illegal purposes through the mail.

#### PENNSYLVANIA

**Philadelphia County Medical Society.**—At the annual meeting of the society, Dr. David Riesman was elected president for 1923; Dr. Edwin S. Cooke, vice president; Dr. Henry G. Munson, secretary, and Dr. Edward A. Shumway, treasurer.

**Personal.**—Dr. Benjamin H. Patterson, Wilkesburg, has been elected to the Pennsylvania legislature from the twelfth district of Allegheny County.—Dr. Francis D. Patterson, Harrisburg, chief of the division of industrial hygiene and engineering of the state department of labor and industry, has resigned to engage in consulting work and industrial medicine.—Dr. Lawrence Litchfield, Pittsburgh, president of the Medical Society of the State of Pennsylvania, gave an address at the annual meeting of the Armstrong County Medical Society, January 10, at Kittanning.

**Graduate Courses at Home.**—An elaborate program whereby physicians in all parts of the state will be given all the advantages of modern graduate medical instruction without leaving their homes has been put into operation by the graduate school of medicine of the University of Pennsylvania, Philadelphia. Dr. George H. Meeker, dean of the school, is working out the details of the project. Professors of the graduate school will be sent out at stated intervals to lecture and conduct clinics, and to describe recent phases in the progress of medicine and surgery, in various parts of the state.

#### Philadelphia

**Community Health Center Dinner.**—Dr. Michael M. Davis, Jr., New York, spoke, January 7, at the annual meeting of the community health center at the St. James Hotel, when plans for the continued relief of malnutrition among the schoolchildren of South Philadelphia were among the subjects discussed. Stanley Folz, president of the institution, tendered a dinner to the officers and directors. Dr. David Riesman of Philadelphia presided.

#### UTAH

**Personal.**—Dr. Frederick E. Straup, Bingham Canyon, has been appointed county physician of Salt Lake County to succeed Dr. Alfred Cyril Callister of Salt Lake City.—Dr. LeRoy C. Potter, Provo, has been reappointed physician of Utah County.—Dr. Roy H. Wilson, Ogden, has been reelected city and county physician.

#### WASHINGTON

**King County Medical Society.**—At the annual meeting of the society at Seattle, January 8, the following officers were elected for 1923: president, Dr. Charlton E. Hagyard; vice president, Dr. John Hunt, and secretary-treasurer, Dr. Raymond F. Hain.

**Personal.**—Dr. George W. Wimberly, Toppenish, sustained a crushed leg recently when his automobile started backwards, pinning his leg beneath it.—Dr. Charles M. Doland, Spokane, was recently elected president of the Spokane County Medical Society.

**State Board of Health Meets.**—The semiannual meeting of the state board of health was held, January 15, at Olympia. The legislature was requested to appropriate \$8,000 for a survey of the Yakima Valley, in which there has been an annual epidemic of typhoid fever and enterocolitis.

**Hospital News.**—Following a nine-year campaign for funds, the new Norwegian Hospital, Seattle, has been completed. It was formally dedicated, January 7, with appropriate exercises. Although dedicated primarily to the need of Norwegians, the institution is open to all and is nonsectarian. Miss Gertrude Anderson, formerly of the City Hospital, Seattle, has been appointed superintendent of the new hospital. It is a fifty-bed institution.—Buildings will be erected by the House of Providence and St. Vincent's Home for the Aged, Seattle, at a cost of \$1,000,000.



## WEST VIRGINIA

**Four Year Course for West Virginia.**—A committee of the West Virginia Medical Society appeared before the state board of education at Charleston, January 18, to urge the inauguration of a four years' medical course at the West Virginia University School of Medicine, Morgantown. If necessary, the project will be placed before the legislature, it was stated by Dr. J. N. Simpson, dean of the medical school and president of the state medical society.

## WISCONSIN

**Health Exposition.**—A health show will be conducted in Milwaukee during the week, April 21-28, under the auspices of the state board of health. A citizens' committee has been created, and directors and officers have been elected. The exhibits shown at the Chicago Pageant of Progress will be on view. Any profits from the exposition will be used to promote child welfare in the city, Dr. George C. Ruhland, health commissioner, states, and in the event of financial failure of the show, citizens backing the movement will incur no expense.

## WYOMING

**State Medical Society Dues.**—The annual dues of the Wyoming State Medical Society have been increased to \$10, and are made payable during January each year. The secretary writes that if a member does not pay his annual dues during that month, he will not be entitled to the benefits of the medical defense of the society.

## CANADA

**Hospital News.**—Dr. Archibald McCausland, St. Thomas, has been appointed assistant superintendent of the Homewood Sanatorium, Guelph, Ont., to succeed Dr. Ray L. Whitney, resigned.—The Ancrum Brae Hospital, Stratford, owned by Dr. Michael Steele, formerly member of the Canadian parliament, was recently practically destroyed by fire. Dr. Steele had only recently remodeled the institution.—Dr. Abraham Groves has presented his private hospital, the Royal Alexandra, to the town of Fergus.—The War Memorial Hospital for Sick Children, London, Ont., was formally opened recently, and handed over to the city to be operated in connection with the Victoria Hospital. Colonel Gartshore, the chairman of the Victoria Trust Hospital, donated \$10,000 toward the endowment of the new institution.—The Sydenham Hospital, Kingston, will be closed permanently and the patients will be transferred to Toronto, and St. Anne de Belleville, Quebec, on account of the recent fire which partially destroyed the buildings.

**Personal.**—Dr. William H. Hattie has resigned as health officer for Nova Scotia, to accept the chair of public health and hygiene at Dalhousie University.—Dr. F. G. Banting of Toronto University spoke on "Insulin in the Treatment of Diabetes," before the Orange Mountain (N. J.) Medical Society, December 22.—Prof. Howard B. Whidden, president of Brandon (Manit.) College, has resigned to accept the position of chancellor of McMaster University, Toronto.—Dr. Wilfred Grenfell, medical missionary from Labrador, lectured in Williamsport, Pa., January 12, at a dinner given in his honor by the Williamsport Ministerial Association.—Dr. W. P. Tew has been appointed demonstrator of gynecology at the Medical Faculty of Western University.—Dr. Graham Campbell, formerly superintendent of buildings and grounds of the University of Toronto, has offered the governors of the university \$5,000 to found a memorial scholarship in pathology, to be known as the John J. Mackenzie Memorial Scholarship.—Dr. William Duane, professor of biophysics at Harvard University, Boston, recently gave a lecture on the treatment of cancer to a large number of physicists and students at the University of Toronto.

## HAWAII

**Donations for Clinics.**—Business men of Honolulu have raised a fund of \$20,000 for nutrition work in the islands, it was recently announced by Dr. William R. P. Emerson of Boston, who has just returned from conducting an institute in Honolulu. In connection with the work, a tonsil-adenoid clinic will be established, for which an additional sum of \$15,000 was donated.

## GENERAL

**Japanese Physicians Coming.**—Baron Yoshihiro Tagaki, chief surgeon of the Tokio Charity Hospital, is one of six physicians who have planned to tour the United States and

Canada at the invitation of the Rockefeller Foundation. The party will sail for San Francisco, February 23.

**Typhoid Death Rate in Large Cities in 1922.**—In summarizing the deaths from typhoid fever in 1922 in forty-three large cities, the United States Public Health Service found a rate of 3.1 per hundred thousand population against a rate of 3.6 in 1921. The highest rate shown for 1922 is 16.7 for Nashville, Tenn. The lowest rate was zero for Providence, R. I., and New Bedford, Mass., in which cities no deaths occurred from typhoid during the year.

**Committee to Consider Bill on Prevention of Conception.**—A subcommittee, consisting of Senators Cummins, Colt and Ashurst of the Committee on Judiciary, has been appointed to consider Senate Bill 4314 which proposes to repeal that portion of the federal code making it a crime to ship through the mails, advertise or deal in or import any article for the prevention of conception. This bill was originally introduced at the instance of the Voluntary Parenthood League.

**Fund for German and Austrian Laboratories.**—A fund is being raised for German and Austrian laboratories, the desperate financial condition of which is well known, by those who have worked in them. The fund has reached \$1,315. If any one desires to help a specified laboratory or a specified head of a laboratory, any contribution given will be sent directly to the person in charge. Checks of \$5 or more will be welcomed, made payable to Dr. Graham Lusk, treasurer, 477 First Avenue, New York.

**Relief Bills for the Blind.**—At the fourth annual meeting of the Federation of Workers for the Blind, held in Albany, N. Y., recently, the compulsory education of the blind child and the possibility of legislation to enforce medical treatment for specific diseases were discussed. Proposed changes in the recently enacted relief bill were also discussed. This law permits the state commission for the blind to appear before the board of county supervisors (and in Greater New York before the New York City Board of Estimate and Apportionment) to ask relief for blind persons. The supervisors may give or withhold aid, since the law is not mandatory.—Senator Spencer of Missouri has introduced an amendment to the District of Columbia appropriation bill, providing \$5,000 for the National Library for the Blind, and another giving an additional appropriation of \$1,500 for the Columbia Polytechnic Institute for the Blind.

**Children's Bureau Answers Questions on Child Labor.**—In response to requests for information regarding child labor in the United States the Department of Labor, through the Children's Bureau, has issued a pamphlet on this subject the text of which takes the form of answers to ten questions. The pamphlet shows that over one million children 10 to 15 years of age were reported by the 1920 census as gainfully employed, 378,063 of whom were less than 14 years old. These figures indicate a considerable decrease from 1910, but a large part of the decrease is apparent rather than real, since it was due to changing the census date from April, as in 1910, to January. In farm work and certain other seasonal occupations fewer children are employed in winter than in spring. A census taken at the present time would doubtless show a larger number of employed children than in January, 1920, when a period of industrial depression began and the federal child-labor tax law which tended to discourage the employment of children was in effect. The cover map shows that only seventeen states have as high requirements with respect to children's employment in factories, mills, canneries, and workshops as had the two federal laws, now declared unconstitutional. Other maps show the varying standards in force in the states with respect to child labor. The minimum age, for example, at which children may be employed in factories varies from 16 years in two states, and 15 years in five others, to 12 years for boys in one state and no age minimum at all in two others. Single copies of this pamphlet, "Child Labor in the United States: Ten Questions Answered," may be obtained free of charge from the Children's Bureau, U. S. Department of Labor, Washington, D. C.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

Youngstown City Hospital and Lakeside Hospital, Cleveland, \$100,000 each, under the will of William G. Pollock of Cleveland.

Santa Barbara (Calif.) Cottage Hospital, \$100,000 for a new nurses' home, by Mr. and Mrs. G. O. Knapp of Montecity.

Exeter Hospital, Exeter, N. H., \$50,000 for improvements to the institution, by an anonymous donor.

Kewanee (Ill.) Public Hospital, \$38,000, by subscriptions.

St. Agnes', St. Mary's, St. Joseph's, St. Vincent's and the Misericordia hospitals, Philadelphia, share in \$25,000, donated by Gimbel Brothers of Philadelphia, January 1.



New Hampshire Orphan's Home, Franklin, \$20,000; Boston Floating Hospital, \$10,000, and the Cottage Hospital, Woodsville, N. H., \$5,000, by the will of Charles B. Henry of Lincoln.

Sharon (Mass.) Sanatorium, \$20,000, for the establishment of a free bed for women and children, as a memorial to Louis Agassiz Shaw; and a further sum of \$1,000.

Hahnemann College and Hospital and the Samaritan Hospital, Philadelphia, equal shares of the estate on the death of his mother and sister, by the will of Edward H. Herbein.

Salvation Army Hospital, New York, \$19,000; St. Anthony's Hospital for Tuberculous Patients, Woodhaven, L. I., and the Sanatorium Gabriels, Gabriels, N. Y., each \$10,000; the Free Industrial School for Crippled Children, New York, and St. Joseph's Association for the Blind, Jersey City, each \$5,000; the residuary estate to be divided equally among the Flushing, St. John's Hospital, Long Island City, St. Joseph's Hospital, Far Rockaway, and St. Vincent's Hospital, Manhattan, by the will of John W. Rapp.

Montefiori Home and Hospital, New York, \$10,000, under the will of Adolphus S. Bendheim.

The Jewish Charities and the Cleveland Jewish Orphan's Home, \$5,000 each, under the will of Philip Stein of Chicago.

Lankenau Hospital and the Methodist Episcopal Hospital, Philadelphia, \$5,000 each, for the establishment of free beds, by the will of Henry O. Deshong.

Cooper Hospital, Camden, N. J., \$5,000, the result of a benefit ball.

Bradbury Memorial Hospital, Belfast, Me., \$5,000, to endow a free bed for the town of Northport, by the will of Mrs. Norman H. White.

William Major Hospital, Shelbyville, Ind., \$1,000, and \$500 to the county tuberculosis association, by the will of David L. Wilson of Shelbyville.

Quincey City Hospital, \$500 and one third of the residue of the estate, and \$500 to the graduates nurses' association of the training school of the hospital, by the will of the late Richard L. Harper.

The Babies' Hospital, Newark, N. J., \$100, in memory of the late Dr. Miller R. Whitenack, by his friends.

Grant County Hospital, Marion, Ind., funds for the establishment of a laboratory, to be known as the Barbara Bedell Memorial, by Mr. and Mrs. Harry Bedell of Marion, in memory of their daughter.

Ten acres of land near Barstow, Calif., for a tuberculosis sanatorium, on condition that a building or cottages are erected by others, by Mrs. L. E. Arnold of Los Angeles.

Catawba Sanatorium, Catawba, Va., funds for the permanent support of a free bed will be provided by the Lions' Club of Roanoke.

#### LATIN AMERICA

**Personal.**—Dr. A. Brioso Vasconcelos has been appointed professor of public health in the army medical school of Mexico City.

**Mexican Society Elects Officers.**—The Merida branch of the Mexican Medical Association has elected the following officers: president, Dr. F. Sauri Reyes; vice president, Dr. A. Rivero Trava; secretary, Dr. V. Rodríguez Arjona; under-secretary, Dr. Silvio Hernández; treasurer, Dr. S. Díaz y Díaz; members, Drs. R. Pinto Manzanilla, Mauro Buenfil, Adolfo González, C. González Ortiz, O. Carpizo Montero, D. Hernández Fajardo, Eulalio Montero, Esteban Encalada, Antonio Aguilar P. and A. Bolio y Bolio.

**Personal.**—Dr. Leonidas Avendaño, professor of legal medicine at the University of Lima, and delegate from Peru to the recent Latin American Medical Congress at Havana, was the guest of honor at a gala breakfast arranged by the Medicolegal Society of Cuba. The *Revista de Medicina Legal* reproduces the speeches.—Dr. M. V. Quiroga, professor of pathology at the University of Buenos Aires, member of the Argentine legislature, and surgeon major in the army, has retired from his academic position, having reached the age limit.—Dr. Karl Reuter of Hamburg, known for his research on conservation of animal and vegetable tissues by refrigeration, is visiting at Buenos Aires.—Dr. F. M. Fernández of Havana, secretary of the recent Latin American Medical Congress at Havana, has been elected a corresponding member of the Caracas Medical Society. The *Revista*, published by the society, recalls that he is the founder of the *Revista Cubana de Oftalmología* and editor of the *Crónica Médico-Quirúrgica*, is on the editorial staff of three other journals, and is a member of several American and international medical and ophthalmologic societies.

**Organization of the Profession in Brazil.**—The recent National Congresso dos Praticos in Brazil has given a great impetus to the movement for organization of the profession. The *Folha Medica* explains that the medical societies for scientific purposes do not have time or inclination to discuss the practical problems involving the material interests of the profession. Some countries, such as Germany and Spain, and now Czechoslovakia, compel the enrolment of all physicians in such an organization, the *Acrztkammer* or *colegio*, and Argentina and Uruguay have taken the lead in organizing a syndicate which is rapidly enlarging its membership, and doing good work in a number of lines. The *Folha Medica* remarks that the first tasks of such an organization are to draw up a code of ethics, and to serve as inter-

mediary between the profession and the government, the spokesman and legal representative of the profession. Permanent committees should be entrusted with the task of systematic denunciation of quacks to the authorities, and the regulation of minimal fees. "All for each and each for all—this is the synthesis of the proposed syndicate." The editorial continues, "The degree of civilization attained in a country may be estimated by its capacity for organization," and points to Germany as an illustration of the noncrushable vigor conferred by close and long continued organization.

#### FOREIGN

**Another Centennial.**—The world-wide use of Esmarch's bandage recalls that Jan. 9, 1923, is the centennial of the birth of the surgeon Friedrich von Esmarch. He died at Kiel in 1908.

**English-American Hospital in Madrid.**—The English and American colonies in Madrid are about to open a hospital. There will be an English physician at its head, but the rest of the staff will be Spanish.

**The Dejerine Foundation.**—The minister of hygiene, the dean of the medical faculty and others are to join in the official inauguration of the Dejerine foundation and neurologic museum at Paris this month.

**Cancer Prize at Vienna.**—The *Wiener klinische Wochenschrift* states that the Austrian Cancer Research Society has offered a prize of 2,000,000 crowns for a work by some German-Austrian scientist, in the course of 1923, which represents fundamental progress in the cancer problem.

**Advertising of Medical Articles in Paris.**—Again the date has been postponed for the enforcement of the municipal regulation forbidding the advertising in the comfort stations of Paris of medical or pharmaceutical articles. The regulation was the result of discussion in December, 1919, but the days of grace for the advertisements have been extended to March 31, 1923.

**The Pasteur Centennial in Norway.**—The celebration at the University of Christiania was imposing, with music and an address. It was announced that the Pasteur fund established in 1892 in honor of the seventieth birthday of Pasteur had received many donations. It provides stipends for Norwegians making a special study of the causes of infection or industrial applications of fermentation.

**Jenner Centenary Exhibition.**—The Wellcome Historical Medical Museum, London, arranged a special exhibition of personal relics, pictures, engravings, drawings, documents, manuscripts, and letters relating to the discovery of vaccination, in connection with the commemoration, January 26, of the centenary of the death of Dr. Edward Jenner. The exhibition will remain open for some months.

**Flügge Foundation.**—In honor of the seventy-fifth birthday of Dr. Karl Flügge, professor emeritus of hygiene at the University of Berlin, the Flügge endowment has been founded by the Koch Fund for Combating Tuberculosis. The list of Flügge's works is a long one, but his name is best known for his research on droplet infection. The *Zeitschrift für Hygiene und Infektionskrankheiten*, which he founded, with Robert Koch, in 1885, issued a special volume as a *Festband* on the occasion.

**Pasteur Centennial at Berlin.**—The Institute for Infectious Diseases at Berlin organized a centennial celebration, with addresses by Neufeld, the director, and by Wassermann. The latter said that Pasteur's research with silkworms was the first systematic epidemiologic work on a scientific basis for the combating of infectious diseases. The meeting concluded with a visit to the Robert Koch mausoleum in the building, where there is a memorial tablet to Koch presented by the officials of the Paris Pasteur Institute at the time of his death.

**Community Health Survey in China.**—Community health surveys are sufficiently uncommon in this country to attract attention. A few have been made in large cities and in counties. The *JOURNAL* recently commented on the Cleveland Hospital and Health Survey, which after two years, the time of reporting, had contributed to important city improvements. It is interesting to note that Kuling, China, has had a community health survey "made by public-spirited residents under the direction of physicians." The full report covers sixty pages.

**Seventy-Fifth Anniversary of the French Biologic Society.**—It is announced that the French Société de biologie, at



Paris, will celebrate its seventy-fifth anniversary, May 26, 1923. Delegates are expected from its affiliated societies, seven in France and one at Petrograd, Buenos Aires, Lisbon, Athens, Copenhagen, Bucharest, Cluj and Jassy, Stockholm and Lithuania, and from the Société belge de biologie. Three questions have been appointed for discussion: "Generation and Fecundation"; "Physiologic Action of Potassium and Calcium," and "Immunity in Invertebrates."

**Dangerous Drugs Act.**—The home office has recently issued a memorandum defining the duties and obligations of registered physicians and dentists in regard to the Dangerous Drugs Act of Great Britain. It states that a physician or dentist who obtains, or attempts to obtain, the drugs for a purpose not covered by his authorization, or who infringes any of the regulations, if convicted, is liable to a fine of £200 (\$950), or imprisonment for six months, or both. Further, the home secretary has power, after the conviction of any physician or dentist, to withdraw his authorization, which would deprive him of the right to possess or supply drugs.

**Drugs Required by Merchant Shipping Acts.**—Article 15 of the Dangerous Drugs Regulations (Great Britain) authorizes the master of a ship not carrying a duly qualified medical practitioner to obtain supplies of the drugs required by the Merchant Shipping Acts. This provision does not apply to other than British ships. It is now suggested, however, that port medical officers of health be authorized by the Secretary of State to grant certificates for the supply to American and other foreign ships of a quantity of the drugs sufficient for the period of the voyage to the home port. The minister of health of Great Britain has addressed to port sanitary authorities a circular inquiring whether they would be willing to allow their medical officers to give the necessary certificates.

**New Danish Law on Marriage and Divorce.**—The *Ugeskrift for Læger* publishes the paragraphs of the new law which affect physicians, and comments on the opposition some of them have roused in medical circles. Marriage is prohibited to the insane and feeble-minded, and the decision as to the mental condition must be certified by a duly authorized physician. The physicians regarded as "duly authorized" are only the state medical officials and the physicians connected with institutions for the insane and feeble-minded. Marriage is also forbidden to persons with venereal disease or epilepsy unless both parties are thoroughly informed of the diseased condition and its dangers for the consort and the offspring. The editorial declares that this setting of venereal disease apart, in a class by itself, is directly contrary to what is being aimed at in the general preventive and curative measures against venereal diseases.

**The Netherlands Council on Pharmacy and Chemistry.**—The fourth report has just been issued. It forms a pamphlet of about fifty pages, and discusses an ethical proprietary preparation of digitalis, and a large number of other proprietaries, mostly nostrums. It is emphasized that in seventy proprietaries investigated, of the most diverse origins, not one new point of view for therapeutics was discovered. The remedies are said to have proved to be either inert substances, obsolete drugs revived or modern drugs, such as physicians are using, but given a fanciful name, and the correct dosage disregarded. Especial stress is placed on the proprietaries offered to combat a certain symptom, fever, diarrhea, headache, pain in the throat, and smarting urine. There is danger in this for the patient as the symptom may be a manifestation of poisoning, diphtheria, cancer or the like. The symptoms of beginning typhoid, scarlet fever, diphtheria or dysentery may be thus masked until infection is spread broadcast.

**Prizes of French Academy of Medicine.**—The Academy of Medicine at Paris had fifty-nine endowed prizes to award in 1922, and 133 articles were received in competition. This year again the secretary commented on the handicap resulting from too specific directions in regard to the awarding of a prize, as conditions change rapidly from year to year. During the year, two new prizes were endowed: one pertaining to questions of general hygiene and the other to the medical treatment of facial neuralgia. The Herpin prize, for the "Abortive Treatment of Poliomyelitis," was awarded to Dr. A. Pettit of the Pasteur Institute, for his wonderful results with his antipoliomyelitis serum. He takes for the antigen the virulent medulla of monkeys. This year again the Audiffred prize "for a sovereign remedy for tuberculosis," consisting of a 3 per cent. government bond and representing an income of 24,000 francs, was not awarded, although six competing works were received. Nineteen of the prizes were not awarded; no competing articles were received for four

of them. The recipients of the prizes were all physicians in France or the French colonies, with the exception of Prof. C. Pezzi of Milan, who shared with Laubry of Paris a prize for their "Manual on Congenital Heart Disease." All but ten of the prizes are open to international competition. Competing articles must be in French or Latin, and must be in the hands of the secretary by March 1. The *Bulletin* of the academy for December 12, gives the conditions of the competition.

**Personal.**—Dr. I. de Villa, president of the *Colegio de Médicos*, was recently elected mayor of Valladolid.—Prof. Ricardo Lozano of the chair of surgery at the University of Saragossa has been lecturing in Paris as interchange professor.—The Société des sciences médicales of Montpellier and Languedoc recently elected Dr. Euzière as president and Drs. Guiber and Maffre as vice presidents. Dr. G. Giraud was continued as secretary.—Sir Edward S. Schafer, professor of physiology since 1899 at the University of Edinburgh, was recently presented with a token of esteem by his present and past demonstrators and fellow research workers in London and Edinburgh, in the form of a life-sized bronze plaque mounted in stone, which will eventually be placed in the university, by Sir Edward's desire. Medals will be presented to each of the many subscribers. The obverse bears in relief the bust of Sir Edward and the reverse carries a dedicatory inscription.—Dr. W. H. Hamer, health officer for the County of London, has been knighted by the king of England.—Major A. M. Dicken has been appointed principal of the Medical School of Armritsar, India.—Dr. E. E. Wynne, health officer of Sheffield, England, was the winner of the 100 guinea prize offered by the London *Daily News* for the best essay on the problem of male infant mortality.—The local medical society of Dresden recently held a gala meeting in honor of the eightieth birthday of its honorary member, the pediatrician Prof. O. Heubner of the University of Berlin.—Dr. Lydia Rabinowitsch-Kempner has been granted 50,000 marks by the Prussian ministry of public instruction to continue her research on tuberculosis.—Dr. Massip Budesca of Madrid was recently presented with an engraved silver tablet in tribute to his zeal on behalf of the organization of the physicians of the civil service.—The physicians of the League of Nations, as the Italians call the visiting group of public health officials, recently visited the Clinic for Occupational Diseases at Milan, in charge of Professor Devoto.

#### Deaths in Other Countries

Dr. H. F. Sadler at St. Luke's Hospital, Sydney, Australia, from epidemic (lethargic) encephalitis.—Dr. Andrew Deane, lieutenant-colonel Indian Medical Service; for nineteen years superintendent of the Royal Victoria Hospital, Belfast.—Dr. H. Rainy, lecturer on the principles and practice of medicine at the University of Edinburgh; vice president of the Royal College of Physicians of Edinburgh and examiner in medicine at the University of Aberdeen; January 4, aged 59. Dr. Rainy was joint author with Dr. R. Hutchinson of "Clinical Methods."—Dr. D. G. Thomson, president of the Medico-Psychological Association; in Norwich, England, aged 66.—Dr. Alfred M. Williamson, health officer of the city of Edinburgh, Scotland.—Dr. Nuno de Andrade, formerly professor of hygiene and then of clinical medicine at Rio de Janeiro, a brilliant writer for the medical and lay press through several generations, director-general of the public health service in 1897 and member of the cabinet.—Dr. J. Braquehay, surgeon in chief of the French Hospital in Tunis, a notable figure in the French colony. He was formerly professor of surgery at Bordeaux.—Dr. K. B. Hofmann, formerly professor of medical chemistry at Graz, noted for his research on the chemistry of the urine.—Dr. K. Alt of Magdeburg.—Dr. J. Grinda Forner, professor emeritus of clinical medicine at the University of Madrid.—Dr. E. Ficalbi, director of the zoologic anatomy institute at the University of Pisa.

#### CORRECTION

**Federation of American Societies for Experimental Biology.**—In the item published under the foregoing head (THE JOURNAL, Jan. 20, 1923), it should have been stated that Prof. A. J. Carlson, University of Chicago, was elected president of the American Physiological Society, C. W. Green, Missouri, reelected secretary, and Drs. John R. Murlin, Rochester, N. Y., and Arno B. Luckhardt, University of Chicago, elected to the council. There is no council of the federation.



## Government Services

### Navy Department Reorganizing Base Hospitals

The Bureau of Medicine and Surgery, Navy Department, is in process of reorganizing the Navy base hospitals. Units have been organized at Los Angeles, Seattle and Toledo. Units will be organized in other cities from time to time. Numerous physicians and dentists have been nominated for enrolment in the Naval Reserve Force, Class Six, in these cities.

### Medical Supplies for Army

The annual supply bill carrying appropriations for the War Department contains many items relating to medicine and the health of the personnel of the Army and the public in general. Among other moneys appropriated in this bill are the following:

Reserve Officers' Training Corps, \$3,250,000.  
Civilian military training camps, \$2,000,000.  
Pay and allowances of contract surgeons, \$41,000.  
Pay of nurses, \$650,000.  
Construction and repair of hospitals, \$497,000.  
Quarters of hospital stewards, \$10,000.  
Medical and hospital department, \$975,000.  
Hospitals care, Canal Zone garrisons, \$40,000.  
Army Medical Museum, \$7,500.  
Library of Surgeon-General, \$15,000.  
Office of Surgeon-General, \$215,000.  
National Home for Disabled Volunteer Soldiers, \$4,354,000.  
Artificial limbs, \$95,500.  
Medical and Surgical History of World War, \$16,600.

### United States Veterans' Bureau News

Dr. Arthur E. Brides, director of the New England branch of the U. S. Veterans' Bureau, Boston, has resigned. Col. John F. J. Herbert has been named acting district manager until further notice. Capt. William J. Blake, chief administrative officer, is relieved from further duty and is ordered to report to Washington, D. C. He is succeeded by Capt. Malcolm L. Stoddard of Portland, Me. Dr. Winthrop Adams, Cambridge, Mass., has succeeded Dr. David J. Flanagan, who was relieved from duty as district medical chief. Fred T. A. MacLeod, chief of the rehabilitation division, is relieved from further duty and is ordered to report to Washington.

### Prohibition Commissioner Issues Statement on Prescriptions in Influenza

Acting Prohibition Director J. E. Jones announced that there was no foundation for the reports published that all prohibition state agents would be authorized to take off the limit on prescriptions for liquor, if the influenza epidemic continued to become more virulent. Mr. Jones states that the department is meeting this situation by authorizing an additional supply of liquor to communities which require it. This is done on the statement of state or local health officials. On presenting proper evidence, any individual physician can obtain an extra book of prescriptions. Each case is acted on by the state prohibition officer, and no blanket orders are contemplated at Washington.

### Narcotic Division Appeals for Increased Appropriation

Citing an amazing increase in drug law violations, the narcotic division of the Treasury Department has appealed to Secretary of Treasury Mellon for a larger force of field agents adequately to enforce the law. The report of the drug bureau to Secretary Mellon reads as follows:

During the fiscal year 1921-22, the number of arrests for the illegal use and sale of drugs increased 65 per cent. over the figures for the previous fiscal year. The number of convictions in the same period increased 100 per cent. The great increase in the number of arrests is partly attributable to the better organized force of field agents, but, of course, the arrests could not be made if the habit of drug addiction was not dangerously prevalent. The force of men engaged in this work is altogether too small to do the job well. In most of the states we have only one or two men, who are expected to cover the state thoroughly. It is obvious that they cannot do much along the border and seaport states, where smuggling is being carried on on such a great scale. Drugs may be more easily smuggled than whisky, and it is extremely difficult to prevent it unless there is a larger force of men on hand. We should be promptly advised when a shipment of drugs is admitted to this country so that our agents may be sure that it does not fall into the wrong hands. The customs service can give us this information and greatly facilitate our work. It would also be most helpful if physicians could be cautioned against giving a patient the first opiate to relieve sufferings as this is the way most addicts begin.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Jan. 8, 1923.

### Prevention of Trypanosomiasis by Altering Vegetation

One learns from a valuable official publication, *The Kew Bulletin of Miscellaneous Information*, a project to prevent the propagation of tsetse flies by cultivating a plant which should prove a useful tropical fodder, the Efwatakala grass (*Melinis minutiflora*) found growing in Angola by Mr. M. T. Dawe in 1921. It grows with other and coarser grasses in virgin country, but on abandoned farm land or newly cleared areas it spreads rapidly almost to the exclusion of other kinds of vegetation. From October to May, it forms an excellent pasture, and even in the dry season retains its verdure when other grasses dry up. It has a strong odor, which is distasteful to tsetse flies. Researchers at Kew show that the odor is due to an aromatic oil secreted in minute drops by glandular hairs on the stems and blades. The natives of the Portuguese Congo make use of its insectifugal qualities in constructing nests for their sitting fowls, and litters for dogs. It is also found in South America, where it is known as stink grass. It is being cultivated at Kew, and seeds are being sent to Nigeria and Uganda. Against the tsetse fly, which in these regions is the carrier of the trypanosome of sleeping sickness and of nagana, a disease of wild and domesticated animals, various measures have been proposed. One was the extermination of the magnificent wild game of Africa, followed by the killing off of water fowl and crocodiles. Another was the segregation of the natives. The new scheme may render such proposals unnecessary, and allow large districts, now almost useless, to come under cultivation. The tsetse flies are creatures of the lake-side and the thick bush that grows there. They seldom leave their shady haunts or fly far except when following man or animals. A clearing 50 yards wide has been found a great protection, and every addition to it increases the safety. But clearings are not easy to keep open in the tropics. Efwatakala grass is said to flourish on exactly such clearings, choking the regrowth of bush. The fodder is so good that it will soon repay the cost of clearing.

### Centenary of the Lancet

With pardonable pride, the *Lancet* announces that in this year it will complete its centenary. The first number appeared, Oct. 5, 1823, when the founder, Thomas Wakley, a reformer of the radical school of those days, announced his intention to produce a work that would convey to the public and to distant practitioners, as well as to students in medicine and surgery, reports of the metropolitan hospital lectures, and, secondly, give a correct description of all the important cases that might occur, whether in England or on any part of the civilized continent. He added: "Our columns will not be restricted to medical intelligence, but, on the contrary, we shall be indefatigable in our exertions to render the *Lancet* a complete chronicle of current literature." This project is extraordinary, for he had only thirty-six small octavo pages in his earlier numbers. His successor of today explains it by "the audacity of youth," for Wakley was then only 28. The other part of the program now seems quite ordinary, but only because the example set by Wakley has been followed by the medical journals of this and other countries. He was a great pioneer and a doughty fighter, who rejoiced in conflict. The reporting of hospital lectures was regarded, strange as it may seem, as a most objectionable innovation, and was strongly resisted by the lecturers.



The destruction of nepotism in hospital appointments was another of Wakley's aims. He succeeded all along the line; abuses withered under his fierce strictures. But in his campaign he indulged in personalities to an extent which today we would consider outrageous even in the lay press. In one of his excursions into general politics, he described the younger Pitt as "an official cockcomb, regardless of everything but the gratification of his own senseless, remorseless, and petty ambition." But such methods must be judged by the standard of his age. He ranks as the first and the greatest medical reformer. His successors have continued the campaign of reform in many directions—the analysis of quack medicines, the detection of food adulteration, the improvement of workhouse infirmaries, and the insistence on medical evidence at coroners' inquests.

#### Books on the Prevention of Venereal Disease Banned in New Zealand

In a letter to the daily press, Sir G. Archdall Reid, the writer on heredity, calls attention to the banning of books on the prevention of venereal disease in New Zealand. His book on the subject, as well as that by Miss Ettie Rout, entitled "Safe Marriage," is banned. No bookseller will stock the former unless he has a guarantee from a local physician. Sir Archdall Reid points out that formerly all disease, especially when widespread, was regarded as a manifestation of divine wrath, to be combated by prayers and offerings. Attention was thus diverted from sanitation. These ideas, though evidently still current in New Zealand and Africa, are being abandoned in civilized states. They linger among certain classes in England, but are being much less confidently expressed than formerly. It is generally becoming recognized that the desire to prevent sin is one thing; a desire to secure the poisoning of the sinner quite another. Often those who suffer have not sinned at all—witness the thousands of women and children suffering from venereal diseases. Further, the zeal of the virtuous slumbers profoundly unless some one tries to prevent venereal disease. Then their zeal flames into passion, and passion is translated into action by banning such books as those mentioned.

#### The Centenary of Jenner

On the 28th of this month, we should be commemorating the centenary of the death of Jenner and, strange to say, just after a smallpox outbreak. As the antivaccinationists are still with us, the figures showing the decline of smallpox in successive decades during the period of general vaccination may be given:

1867-1876.....	58,614 deaths
1877-1886.....	18,026 deaths
1887-1896.....	4,892 deaths
1897-1906.....	4,763 deaths
1907-1916.....	139 deaths

#### Insurance Against Penalties for Refusing to Violate Professional Secrecy

The unsatisfactory law of this country which does not respect professional secrecy has been referred to from time to time in these letters. Underwriters at "Lloyds" have decided to offer policies covering losses that may be incurred if a physician is sent to prison for contempt of court because he refuses to disclose matters confided to him in his professional work. The premiums are: limit of loss not exceeding \$100 a week, \$5; not exceeding \$150 a week, \$6.25; not exceeding \$200 a week, \$7.50; not exceeding \$250 a week, \$7.50. The payments to the insured are limited to fifty-two weeks.

#### Insurance Physicians Remove Telephones

One of the defects of the National Health Insurance Act is that, as patients pay by a capitation fee, whether they do or

do not choose to obtain medical advice makes no difference in their expense, and there is no check on calling in the physician for very trivial complaints. The physicians in Coalville, a town of 20,000 population in Leicestershire, have found the calls for trifling matters such a nuisance that they have had the telephones removed from their offices and residences. The Coalville Friendly Societies' Council, representing 7,000 members, has made a protest, contending that absence of telephonic communications may prolong patients' sufferings. The Insurance Committee has decided to inform the physicians that the removal of the telephones tends to a less effective medical service than is desired.

#### PARIS

(From Our Regular Correspondent)

Jan. 5, 1923.

#### Professorial Chairs in the Universities

The minister of public instruction recently pointed out to the rectors of the universities the disadvantages that arise from making too many changes in the faculties, whereby professorial chairs that may be regarded as essential are at times caused to disappear completely. The minister stated that he recognized the difficulty that had often to be faced when it seemed desirable to bestow worthy titles on eminent teachers, either owing to the fact that no suitable chair becomes available in their own faculty or because their specialty covers too narrow a field for them to procure a chair easily. He proposed that two kinds of professorial chairs be established: (1) the chairs which must be considered fundamental and which must be maintained without transformations within the faculty; (2) appointive chairs. The latter could be abolished or transformed in any manner that seemed desirable when relinquished by their incumbents, and might even be shifted from one faculty to another. They would be, in a certain measure, the reward for outstanding work in some particular field, or would provide for those deserving advancement. As regards rights, privileges, salary and advancement, there would be no difference between the two kinds of chairs.

It has also been suggested that it might be advisable to establish certain chairs that would not be regarded as belonging to any faculty in particular. Such a plan, in spite of the difficulties that its realization seemed to imply, might be worthy of consideration, as the interests of general instruction, especially in the matter of research, might thus be promoted and an unusual liberty of movement be accorded.

#### Resumption of Scientific Relations with Austria

The request of the French minister to Austria, made to the medical "bloc" in parliament, to bring about the resumption of scientific relations between French physicians and surgeons and their Austrian and Hungarian confrères, was supported by Pinard both from the scientific and the diplomatic point of view. The speakers who took part in the discussion were of the opinion that it is not advisable to erect an impassable barrier between nations and especially between men of science, and that the suggestion of the French minister to Austria should therefore be given the most careful consideration.

#### Counterfeited Medical Prescriptions

Dr. H. Luys gives in the *Concours médical* an account of counterfeited medical prescriptions which concerned him directly. His name, address and telephone connection were correct, but the days and hours designated for office consultation were incorrect. The prescription called for a heroin formula that he never prescribed, and the signature was quite unlike his own. Dr. Luys learned later that the lady



who had forged his name was an old acquaintance who for years had been a heroin addict. Dr. Luys proposes, as a remedy, the following measures: 1. Printers should be prohibited from printing medical prescription blanks for any party unless they are sure of his identity and know that he is a bona fide doctor of medicine. 2. Prescription blanks should have at the bottom the name of the printer. 3. Every authorized general practitioner should be provided with a stamp for the purpose of authenticating his signature with a seal. Such stamps should be made and delivered by engravers only to such persons as are entitled to use them, the same control being exercised as in the case of prescription blanks.

#### An Ovation to Professor Arnozan

On the occasion of the last lecture of Dr. Arnozan, professor of clinical medicine at the Faculté de médecine of Bordeaux, who is about to retire from active service, the pupils and friends of the professor presented him with a bronze plaque bearing his likeness.

#### Importation of Smallpox Vaccine

The *Journal officiel* published recently an order of the president of the republic to the effect that every shipment or entry of foreign smallpox vaccine into France must be accompanied by a declaration, to be filed with the Institut supérieur de vaccine of the Academy of Medicine at Paris, concerning the origin, the nature and the quality of the vaccine to be introduced, together with the address in France of the agent handling the vaccine. Every tube of the vaccine imported must give the address of the sender and the address of the recipient, together with the last date on which the vaccine may be used (thirty days from the date of manufacture). Furthermore, the depositories of foreign vaccines in France are subject to the authorization and the supervision of public authority, in accordance with the rulings laid down by the minister of public health.

#### The Bulletin of the Friends of Hygiene

The Société des amis de l'hygiène, founded recently for the purpose of promoting the progress of public health in France and in the colonies, has just published the first number of its monthly bulletin, which is intended to serve as a means of communication and as a connecting link between the members of the association.

### BUCHAREST

(From Our Regular Correspondent)

Dec. 27, 1922.

#### Anthrax Among Animals

Owing to the uncommon drought last summer, and to the consequent insufficient feeding of animals, the number of cases of anthrax is much greater than in corresponding periods of other years. In some parts of the country there was absolutely no grass or water. If the animals did not die of thirst, their resistance was so reduced that they readily developed diseases, of which the most prevalent was and is also at present anthrax. According to Roumanian sanitary law, animals suffering from anthrax must not be treated at all, but immediately slaughtered and buried; but the peasants, in order to decrease their losses, take off the hide of the animals, for which they get almost as much as for the animal itself. Many recent cases of anthrax have resulted from this practice. Severe penalties have now been instituted for the infringement of these laws. Luckily, the number of human patients suffering from anthrax is relatively low, and those who become infected with anthrax are instructed to seek at once medical aid, which, thanks to the reliable anthrax serums distributed to physicians by the state, saves the majority of patients.

#### Unreliability of a Negative Wassermann Reaction

Dr. Franz Veress, professor of venereology at the University of Cluj, says that most unfortunate consequences attend the practice of attaching importance to a negative serum reaction. It is still worse if a patient goes directly to a laboratory and not to a specialist. Basing his statement on details of several thousand cases, he asserts that a positive reaction is the sign of active syphilis, necessitating energetic treatment, but he is emphatic in warning against the drastic treatment of old latent cases of syphilis, in which reaction should be gradually induced by means of mild treatment with mercury or iodine. A negative Wassermann reaction alone means nothing at all—the disease may be either nonexistent or latent. The reaction can be negative in all stages of syphilis, whether mild or severe. In the estimation of cures, clinical symptoms are to be relied on but not the negative Wassermann reaction. It may be necessary to give a course of treatment even when the reaction is negative.

#### Treatment of Sleeplessness

Dr. Cajal of Bucharest, in dealing with the treatment of sleeplessness, points out that a number of patients consult their medical advisers on account of "sleeplessness"; but on closer investigation it appears that the symptoms which lead them to seek treatment is a limitation of the duration of sleep and the fact that they are unrefreshed in the morning. Simple disturbances of sleep seldom occur unless associated with some body disturbance, either past or present. In a few cases the disturbance is periodic and is a kind of psychotic affection. It should be the duty of the practitioner to discover the other symptoms with which the sleep disturbance is connected. It is common for nervous children to sleep badly. The exciting causes may be some extraordinary excitement, bodily exertion, or tiring and emotional causes. The treatment of severe cases of this kind should be directed to strengthening the nervous system and regulating the hygienic conditions of life. Psychic influences from the parents and the physician do much good, but care must be exercised that neither severe unkind treatment, nor exaggerated mildness be employed. Narcotics are rarely needed. The possibility of worms must be borne in mind in these cases. The disturbance in adults may be secondary to affections of the lungs, heart or skin, or there may be a painful nervous disease, such as neuralgia, neuritis, tabes or cerebral syphilis. At times, organic diseases of the nervous system are manifested only by disturbance of sleep at first. It is not uncommon for a patient with general paralysis to come to the medical practitioner on account of this symptom. The next category of cases belongs to the poisonings. Chronic alcoholism, nicotine poisoning, intoxication with tea and coffee and the like may be responsible for the disturbance, and Dr. E. Meyer of Germany stated some years ago that sleeplessness may arise in the course of morphinism. The disturbance of sleep in marked mental disturbances is well known. In functional neuroses, such as hysteria and neurasthenia, sleeplessness is not infrequently encountered. The type of the disturbance in these cases is very definite. Finally, he mentions the sleeplessness of the climacteric. The treatment of the symptoms must consist, first of all, in the treatment of the primary condition causing it. In the second place, much good can be done by paying attention to the hygiene of sleep and of the bedroom. The physician may be able by simple means to remove the symptom altogether in nervous patients. Next, hydrotherapeutic measures may be adopted. Wet compresses, packs and partial baths are useful. Baths often work well in the sleeplessness of the climacteric. Hypnosis is often an excellent soporific, but as a rule the practitioner is not experienced in this. Electrotherapeutic measures may



do good. Before giving hypnotics or narcotics, the physician should remember that he is merely dealing with a symptom; at times, however, it is impossible to get on without them.

## VIENNA

(From Our Regular Correspondent)

Dec. 28, 1922.

### Dismissal of Medical Officers of the Hospital Staffs

In view of the financial stress in the new era of the republic, which necessitates a sharp reduction of all expenditures incurred by the state, the hospitals also will be considerably affected by the activities of the "economy dictator," appointed by the League of Nations. In Vienna alone, two hospitals will be closed, and the others will undergo a marked diminution of capacity. At least 75 per cent. of the nurses and attendants will thus be superfluous, to say nothing of the administrative staff. The medical staff of these hospitals has already been cut down, as more than 100 physicians have received a fortnight's notice that their appointments, terminating December 31, will not be renewed. While the officials and attending personnel are fighting against this sudden dismissal, backed by their political organizations, the physicians have no political party behind them. In vain, the medical organization has pointed out to the ministry of finance that a real "cut" in the administrative body and the number of nurses is necessary and possible, while the number of physicians is even now insufficient, and a diminution of their number is wrought with harm and danger to the patients. The view of the ministry is that, since a number of beds (about 25 per cent.) are continually not in use, a uniform dismissal from all classes of persons salaried by the hospitals is required and possible.

The situation of these physicians in the capital is most distressing. They are unable to establish themselves in private practice, as this now involves an expenditure of many millions of kronen; and, worse still, they cannot find flats or lodgings for that purpose, as the housing problem is a great problem in this city. The ministry is not opposed to continuation of the work by the physicians if they will consent to work without being paid, but the salaried appointments were for the most part the only means enabling the young physician to keep up his studies and obtain the knowledge and practical experience required by him in his future position as a member of the corporation of public health. As nearly 80 per cent. of all hospitals in this country are owned and run by the government, the openings in the private hospitals and nursing homes are few. The average number of inmates of public hospitals has grown less every year since 1919, partly because the charges are so high and partly because the institutions were built to accommodate the population of a large empire (55,000,000), and the population is now only 6,000,000. The situation is unavoidable as far as the state is concerned; but as regards the profession it is a dangerous procedure for the present government not to individualize the acts of economy.

### Difficulties of the Anatomic Institute

The Anatomic Institute of the Vienna University, whose world-wide reputation has every year attracted hundreds of students from all parts of the world, has been forced to diminish its work to a considerable extent. The yearly grant by the government is hardly sufficient for minor administrative expenditure, and all other expenses must be covered either by the students' fees or by grants and contributions from other sources (Rockefeller Foundation, Swiss Aid). These contributions from abroad include the necessary apparatus and a full outfit of linen for working purposes, and equipment for the library, as well as chemicals for the

laboratories. But bodies, which are one of the chief requirements of an anatomic institute cannot be obtained by money. While in former years the vaults of the institute held sufficient anatomic material for at least two years, there is now a distinct scarcity. The public hospitals can supply only such bodies as are not claimed. Previously, more than 200 bodies were prepared in the laboratories each year by injection of phenol (carbolic acid), and were kept in this liquid until wanted for use. Now scarcely fifty can be counted on, while at least seventy or eighty whole cadavers are required for the work of the inland students alone.

There are more than 700 students working in each of the two institutes, of whom more than 60 per cent. are foreigners, chiefly from the Balkans, but also from the United States. In order to utilize the small number of cadavers to the utmost it has been arranged that only inlanders work on the whole body (six at a time) while foreign students dissect only separate parts; and only a limited number of students of the first year (400) are admitted. There are three dissecting theaters, with eight dissecting tables in each. The fees for the work in the institutes are about 60,000 kronen for each term (less than \$1) for the inland student, while foreigners have to pay ten times as much. Still, these sums do not suffice to pay expenses. The institute requires more than half a ton of raw phenol alone every year, costing about \$400, to say nothing of fuel and lighting.

In order to obtain more working material, arrangements have been made with the hospitals in the country and the provinces that will insure a supply of from twenty to thirty bodies each year. But the transportation of this material will be so expensive that special fees will have to be charged for the dissection of bodies obtained in this way. These will of course be obtained from the foreign students, of whom there are at present here sixteen Egyptians, eight Chinese and Japanese, and one Hindu, a woman.

### Opening of a Crematorium in Vienna

An old prejudice was done away with a few days ago in this city by the present democratic government, and now the body of any person who desired to be cremated need not be transported to Germany, formerly the only way to have this wish fulfilled. The government, being under ecclesiastic control, tried, to the very last moment, to prevent the opening of the crematorium, which had been erected at a great cost by the municipality. But the magistrates refused to consider the governmental order, and there is little doubt that the final decision of the upper court of administration will be in favor of cremation. From the medical point of view, cremation is preferable to interment, except that detection of a criminal death is made most difficult by it. The furnaces of the crematorium are regulated in such a way that about 750 kg. of coal are required to reduce the body to ashes within two hours. In case of death from infectious disease, and in any case when cemeteries are situated near drinking wells, cremation should be the method of choice for the disposal of dead bodies, as was the practice during the war.

It is expected that the existence of this institute in the capital will give a strong impetus to a more general adoption of cremation in this country.

### Report of the Work Done by the Municipal Board of Health

Professor Tandler, at present head of the board of health of Vienna, recently reported the work done by the board last year, in a long speech on the budget. The expenditures were high, about one billion kronen (\$79,000) a day, an enormous sum for our city. The principal idea was to diminish the unproductive expenditures and to increase the



productive ones. In other words, it was the duty of society to save the poor from the poorhouse, not to erect beautiful poorhouses for them. This was effected by procuring work for the unemployed, by encouraging mothers to take their children out of the children's homes, by establishing homes for aged people, where they could improve their situation by doing light work. Some statistics were worth recording. In the first eleven months of the year 1922, Vienna had 27,185 live births as against 26,134 deaths, or a gain of only 1,050, a poor outlook for the future. More than 60,000 aged persons were recipient of monthly grants enabling them to stay with their family instead of seeking help in the poorhouse. The expenditures for the inmates of the asylums for the insane were enormous. The poor inmates, especially those who are subjects of the successory states, were a source of heavy burdens to Vienna. They cost more than three billion kronen per year and could not be got rid of, as their countries refused to take them over or to pay for them.

In cooperation with the housing office, energetic efforts had been made to meet the housing problem; 370 cottages and 1,470 flats, mostly for the working classes, had been erected and slums pulled down, within one year. More than 42,000 persons were still looking for lodgings, while 600 families were threatened with a collapse of the houses they live in. Great care was taken to obtain playgrounds for schoolchildren, and every kind of sport and athletics was encouraged. Swimming in the municipal baths was made possible for schoolchildren; even in winter, by a generous coal supply. A number of old cemeteries were closed and will be converted into public gardens, while an important item in the work was the final replacing of the old-fashioned dust-van, a potent source of infection, by a modern refuse collector, dustproof and hygienic. A reform in the old slaughter houses was being instituted, and an up-to-date system of meat inspection and market control aided in keeping down infectious outbreaks.

### BERLIN

(From Our Regular Correspondent)

Jan. 6, 1923.

#### Rules as Affecting Medical Directors of Hospitals

A committee of the Prussian *Aerztekammern* ("chambers of physicians") has drawn up a set of rules applicable to medical directors of hospitals: 1. The medical director of a hospital should be by contract engaged for a period of at least five years. The contract may not be dissolved, nor may a renewal be refused, except for important reasons. If differences of opinion arise as to whether such reasons exist, the matter will be decided either by arbitrators or by the ordinary courts of justice. 2. In case the medical director is not the executive head of the institution, he is at least responsible for its management so far as the care of patients is concerned, and more particularly for the general medical service rendered to patients and for the hygienic measures to be applied. In this connection, he must be accorded the necessary authority. 3. If the institution has a board of trustees (administrative board or committee), the medical director (or his locum tenens) should have a seat and vote at its deliberations. 4. In all questions pertaining to medicine, hygiene and building arrangements, the opinions of the medical director must be heard before any final action is taken. He should also assist in the administration of the institution. 5. The medical director is ex officio the head not only of the medical personnel and the nursing personnel, but also of the household personnel and the administrative personnel, in all matters pertaining to the care of patients. 6. All rules and regulations adopted by a board of trustees (administrative board or committee) with respect to the hospital personnel, in connection with the care of patients,

must pass through the hands of the medical director, and their execution remains subject to his supervision. Likewise, all other documents, orders and reports affecting the hygiene of the hospital or the care of patients, which are sent to the board of trustees or which are issued by it, must be brought to the notice of the medical director or presented for the addition of his signature, as the case may be. 7. The medical director has the right to demand that he be allowed sufficient medical assistants for the performance of his tasks, such as anesthesia, assistance at operations, locum-tenency and operations by specialists. The engaging of medical assistants in a hospital lies in the hands of the administration or the board of trustees, in accordance with the recommendations of the medical director or of the independent chief physician of a special service. Such assistants are then subject, as to their service, to the orders of the chief physician of the department to which they were delegated. 8. The medical director must also control the distribution of the medical assistants and the attending personnel throughout the various departments, and likewise the activities of this personnel. In case the rules of a cloister or of a foundation give the lady superior the authority to assign the nurses or transfer them to other services, it should be understood that the lady superior before taking such action should come to some agreement with the medical director. 9. Before a new patient is admitted, the sanction of the medical director should be secured. The medical director must decide to what ward or room a patient is to be assigned, and also in regard to the dismissal of a patient. No patient may be dismissed without the consent of the medical director—not even for disciplinary reasons. 10. The medical director should receive an adequate fixed salary, which, if it is the physician's chief source of income, should increase with length of service and should be subject to a pension. Any other compensation will be in accordance with special agreements, as expressed in the contract. While the fundamental principles as here laid down apply more particularly to medical directors of hospitals, they are, in a measure, applicable also to the chief physicians of departments or special services.

#### Personal

Trendelenburg of Tübingen has refused the call to Berlin to serve as the successor of Rubner for the chair of physiology. A call has been sent to F. Hofmann of Bonn.

Professor Poll of Berlin has secured a chair for general biology and theory of heredity.

### Marriages

EUGENE JOHN TRUSCHEL, Pittsburgh, to Miss Helen Mildred Rupp of Edgewood, Pa., November 23, at Wilkesburg.

ARTHUR W. M. ELLIS, Toronto, Canada, to Miss Winifred Rose of Essex, England, recently, in England.

RODERICK JAMES McDONALD, JR., Loveland, Colo., to Miss Hazel Dell Chaffee of Boulder, December 28.

JAMES H. HOWELL, Galt, Ont., Canada, to Miss Lillie Murray of Kingston, Ont., recently.

THOMAS W. BALLANTYNE to Miss Marion Karn, both of Woodstock, Ont., Canada, recently.

OLIVER H. SWARTZ, Middletown, Pa., to Miss Mary Frances Moore of Harrisburg, December 2.

EDWARD W. JEW, Pittsburgh, to Miss Elsie M. Seeman of Wilkesburg, Pa., November 30.

WILLIAM A. CARDWELL to Miss Jessie Lord, both of Niagara Falls, Ont., Canada, recently.

FRANK E. SEYMOUR to Miss Olga Larson, both of Fort Dodge, Iowa, November 28.

EDWIN J. BARNETT to Miss Agnes O'Neil, both of Spokane, Wash., November 21.



## Deaths

**Walter Stanley Haines** ☉ beloved teacher of students of Rush Medical College since 1876, died, January 27, at the Presbyterian Hospital from bronchiectasis complicated with chronic nephritis. Dr. Haines was born Sept. 27, 1850, in Chicago. His father, John G. Haines, was for two terms mayor of the city. Dr. Haines attended the Chicago High School, graduating first in his class, and then attended the Massachusetts Institute of Technology from 1869 to 1871. While there he fell ill with pleurisy and was compelled to give up his work; since then he suffered constantly with a lung disturbance. In 1871 Dr. Haines entered the Chicago Medical College, from which he graduated in 1873. Even before his graduation he showed great promise in his chosen field, and was offered the chair of chemistry in his Alma Mater while still a student, holding the position from 1872 to 1876. During this period, having completed his medical education, he served an internship in Mercy Hospital and spent several months in Europe in study. In 1876 he was called to the chair of chemistry in Rush Medical College, succeeding Dr. Henry L. Lyman. Since that time Dr. Haines had devoted himself to teaching and there passed before him a vast body of students who not only respected him for his scientific attainments but loved him greatly for the beauty of his personal character. It has been said of him that his gentle spirit, his standards of care and accuracy, his consideration for his fellow men, whether colleagues, students or janitors, made him, not only the best loved man in the college, but a constant beneficent influence on the whole place.

Dr. Haines was a member of the committee of revision of the United States Pharmacopeia from 1900 to 1920. He was a member of the Illinois State Food Standard Commission since 1909, and was a member of the American Chemical Society and of the Chemical Society of London. He contributed widely to the literature of his subject. With Peterson of New York he prepared a textbook of legal medicine and toxicology which passed through several editions; he also wrote chapters on special toxicologic subjects in various systems of toxicology and legal medicine. He was especially noted for his service as expert witness in many important legal cases, in which his calm demeanor, dignity, incisiveness and broad information commanded wide admiration.

In 1916, the alumni of Rush Medical College joined in the raising of a fund for presentation to the college of a portrait of Dr. Haines, and for establishment of a Haines fund for the college. Last year, in recognition of his fifty years of service in the teaching of medicine, the alumni presented him with a watch; the graduating class placed a tablet in his honor in the college amphitheater, and the Walter S. Haines Library fund was established for the library of Rush Medical College, to which he had given greatly of his service. In concluding his address on that occasion, he said:

It is for my students, however, that is reserved the warmest place in my heart and the largest measure of my thought. I have seen more than 6,500 of them go forth to every state of this nation, to nearly every town of the land, and to almost every country of the globe, to give comfort to the sick and to stay the hand of the fell destroyer—to teach, to investigate, and to make great discoveries. My one fondest hope is that perhaps I have done a little to prepare them for that work and that possibly I have helped them, even though slightly, in their splendid careers.

**John Henry Larkin**, New York; Medical Department of Columbia College, New York, 1894; member of the American Association of Pathology and Bacteriology, the New York Pathological Society and the New York Academy of Medicine; assistant professor of pathology at his alma mater; consulting pathologist to St. Francis', St. Joseph's, Misericordia, Sydenham, Lincoln and Harlem hospitals; since 1911 director of the pathologic laboratories of the City Hospital, Welfare Island; aged 53; died, January 17, from pneumonia.

**Franklin Deuel Skeel**, New York; New York University Medical College, New York, 1881; member of the New York Academy of Sciences, the New York Academy of Medicine, the New York Ophthalmological Society, the New York Zoological Society, the New York Botanical Society, the American Association for the Advancement of Science, the American Museum of Natural History, and formerly president of the New York Microscopical Society; aged 71; died, January 15, at his home in Bedford Hills.

**John Williamson Caldwell**, New Orleans; Medical College of Virginia, Richmond, 1864; Civil War veteran; Stewart

professor of natural sciences, Stewart College (Southwestern Presbyterian University), Clarksville, Tenn.; emeritus professor of chemistry and geology at Tulane University of Louisiana School of Medicine, and formerly curator of the college museum; aged 80; died, January 2, from senility.

**Henry H. Flood**, Catonsville, Md.; Baltimore University School of Medicine, Baltimore, 1896; member of the Medical and Chirurgical Faculty of Maryland; for nearly thirty years port medical attendant to the Norwegian, Swedish and Danish vessels under the maritime regulations of those countries; aged 50; died suddenly, December 14, at the St. Agnes Hospital, Baltimore.

**William Jordan Taylor** ☉ Cincinnati; Miami Medical College, Cincinnati, 1900; formerly lecturer on electrotherapeutics at his alma mater; member of the Cincinnati Academy of Medicine; the Cincinnati Society for Medical Research, and the American Roentgen Ray Society; served in the M. C., U. S. Army, during the World War; aged 48; died, January 13.

**Frederic Albert Jewett** ☉ Brooklyn; Long Island College Hospital, Brooklyn, 1883; member of the Brooklyn Pathological Society; for more than twenty years connected with the board of health, and chief inspector of the Bureau of Contagious Diseases; formerly on the staff of the Bushwick Hospital; aged 70; died, January 18, from cardiac dilatation.

**Edouard Julien Dubois** ☉ Indianapolis; Central College of Physicians and Surgeons, Indianapolis, 1905; member of the Society of American Bacteriologists; served in the M. C., U. S. Army, during the World War; for twelve years city bacteriologist; aged 55; died suddenly in his office at the U. S. Veterans' Bureau, January 17, from cardiac asthma.

**Andrew David Nesbit** ☉ Tekamah, Neb.; Jefferson Medical College of Philadelphia, 1887; formerly president of the Nebraska State Medical Association; member of Missouri Valley Medical Association; at one time county coroner; member of the board of education; aged 62; died, January 13, from cerebral hemorrhage.

**Langley St. A. Whitley** ☉ Godfrey, Ill.; St. Louis Medical College, St. Louis, 1884; was given the degree of LL.D. from the University of Virginia, Richmond; formerly member of the state legislature; aged 59; died, January 15, following an operation for carcinoma of the stomach.

**Arthur Bernheim Prince**, Kingsland, Ga.; University of Georgia Medical Department, Augusta, 1912; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 34; died, December 25, from a bullet wound in the brain, presumably self-inflicted.

**Edgar Clarence Taylor**, Pretty Prairie, Kan.; University Medical College of Kansas City, Mo., 1909; member of the Kansas Medical Society; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 46; died, December 28, from tuberculosis.

**Milton C. Wilson**, Lafayette, Ind.; Medical Department Butler University, Indianapolis, 1882; member of the Indiana State Medical Association; county physician; formerly president of the Tippecanoe County Medical Society; aged 71; died, January 14, from heart disease.

**William Scott Rofe**, Denver; Rush Medical College, Chicago, 1874; formerly a practitioner of Chicago, where he served as chief surgeon of the stockyards; aged 80; died, January 12, from heart disease, subsequent to a fall, January 11, when he fractured his wrist.

**Samuel Rufus Moyer** ☉ Monroe, Wis.; Chicago Medical College, Chicago, 1883; formerly lecturer on diagnosis at the Marquette University School of Medicine, Milwaukee; president of the Green County Medical Society; aged 68; died, January 15, from cholemia.

**Enos Walter Dickson Wright**, Langley, S. C.; Baltimore Medical College, 1894; aged 50; died, December 4, at the Margaret Wright Hospital, Augusta, Ga., from a fractured skull, received when the automobile in which he was driving was struck by a train.

**John H. McCreary**, Highland Park, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1866; Civil War veteran; formerly superintendent of the Pittston, Lancaster County, Harrisburg and Wernersville hospitals; aged 79; died, January 16.

**John Bradner Cassady**, Burlington, N. J.; Medico-Chirurgical College of Philadelphia, 1889; member of the Medical Society of New Jersey; president of the board of health; surgeon for the Pennsylvania Railroad; aged 56; died, November 29.

☉ Indicates "Fellow" of the American Medical Association.



**John H. Metzertott**, Washington, D. C.; Medical Department of Columbian University, Washington, D. C., 1891; member of the Medical Society of the District of Columbia; aged 57; died, January 3, at the Sibley Memorial Hospital, following an operation.

**Washington Franklin Elliott**, Beaver Falls, Pa.; Jefferson Medical College of Philadelphia, 1887; member of the Medical Society of the State of Pennsylvania; chief of staff of the Providence Hospital; aged 66; died, January 10, from pneumonia.

**Sylvester Gwaltney** ♂ Los Angeles; Marion-Sims College of Medicine, St. Louis, 1892; formerly instructor of clinical medicine at the College of Physicians and Surgeons, Los Angeles; aged 58; died, January 2, in his office from heart disease.

**Lloyd L. Hurst**, Philadelphia; Jefferson Medical College of Philadelphia, 1921; served during the World War; on the staff of the Samaritan Hospital; aged 36; died, January 7, at Maple Shade, N. J., from influenza and pneumonia.

**Willard George Steadman**, Southington, Conn.; Bellevue Hospital Medical College, New York, 1874; member of the Connecticut State Medical Society; formerly city health officer; aged 69; died, January 10.

**Otto Frenzel**, Pigeon, Mich.; Starling Medical College, Columbus, Ohio, 1891; member of the Michigan State Medical Society; aged 52; died, January 6, at the Saginaw General Hospital, Saginaw.

**James Crooks**, Paterson, N. J.; New York Homeopathic Medical College and Hospital, New York, 1887; member of the Medical Society of New Jersey; aged 61; died, January 13, from heart disease.

**Hugo A. Gabert**, Mandeville, La.; Medical College of Louisiana, New Orleans, 1879; member of the Louisiana State Medical Society; aged 70; died suddenly, January 10, from heart disease.

**Samuel M. Henry**, Toronto, Ont., Canada; Victoria University Medical Department, Toronto, 1868; formerly mayor and chairman of the board of education of Harriston; aged 73; died recently.

**Tilmon Leroy Noblitt**, Erick, Okla.; Eclectic Medical University, Kansas City, Mo., 1902; member of the Oklahoma State Medical Association; also a minister; aged 49; died, December 22.

**Florence Ellen De L'horbe McCormick**, Toronto, Ont., Canada; American Medical Missionary College, Chicago, 1904; aged 40; died recently, from intestinal stasis and peritonitis.

**John Howard Nixon**, Springfield, Mo.; University of Pennsylvania School of Medicine, Philadelphia, 1888; member of the Missouri State Medical Association; aged 60; died, January 9.

**William Thomas Duncan**, Des Moines, Iowa; National Medical University, Chicago, 1895; Medical Department of Drake University, Des Moines, 1899; aged 47; died, January 13.

**John A. Biles** ♂ Del Norte, Colo.; College of Physicians and Surgeons, Keokuk, Iowa, 1877; formerly member of the state legislature; aged 70; died, January 9, following a long illness.

**James Darrach**, Philadelphia; Pennsylvania Medical College, Philadelphia, 1852; formerly consulting physician at the Germantown Hospital; aged 94; died, January 17, from senility.

**Harley Jones Butte** ♂ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1900; aged 52; was found dead, January 12, from accidental asphyxiation.

**Edward Maguire**, Pullman, Wash.; Kansas City (Mo.) Medical College, 1900; served as mayor of Pullman for two terms; aged 52; died, January 2, from cerebral hemorrhage.

**Samuel Joseph Smith**, Iowa City; Iowa State University of Iowa College of Medicine, Iowa City, 1885; member of the Iowa State Medical Society; aged 63; died, January 11.

**James Merit Melton** ♂ Crozet, Va.; Vanderbilt University Medical Department, Nashville, Tenn., 1901; aged 51; was instantly killed in an automobile accident, January 10.

**Omar E. Amos**, Jefferson City, Mo.; American Medical College, St. Louis, 1904; member of the Missouri State Medical Association; was shot and killed, January 9.

**Anna E. Rhoads**, St. Louis (licensed, years of practice); formerly a practitioner of Indiana; aged 80; died, December 20, at the Christian Church Home, from senility.

**Ayman E. Kean**, St. Louis; St. Louis College of Physicians and Surgeons, 1903; also a dentist; aged 48; died, January 7, from injuries received in an automobile accident.

**Frederick Raymond Kitterman**, Tiskilwa, Ill.; Medical Department of the University of Illinois, Chicago, 1902; aged 47; died recently from pulmonary thrombosis.

**Spotswood Hayes Parker**, University, Va.; University of Virginia Department of Medicine, Charlottesville, 1904; aged 41; died, January 8, following a long illness.

**Harvey Jenner Chadwick** ♂ Grand Junction, Mich.; Michigan College of Medicine, Detroit, 1881; aged 65; died, November 5, from cerebral hemorrhage.

**John Henry Long**, Lincoln, Neb.; Minnesota Hospital College, Minneapolis, 1888; also a druggist; aged 68; died, January 11, at St. Elizabeth's Hospital.

**George Allen McCormick**, Hennepin, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1883; aged 76; died, January 5, from angina pectoris.

**Anna Mary Morgan**, Toledo, Ohio; Physio-Medical College of Indianapolis, 1898; aged 64; died, January 4, at the home of her son in Westville, N. J.

**Orion Baum**, Vine, Va.; College of Physicians and Surgeons, Baltimore, 1885; member of the Medical Society of Virginia; aged 64; died, January 9.

**Frank P. Gray**, Lafayette, Ind.; College of Physicians and Surgeons, Keokuk, Iowa, 1876; member of the city board of health; aged 65; died, January 18.

**Prince Cooper**, Van, W. Va.; College of Physicians and Surgeons, Baltimore, 1915; aged 36; died, December 7, at the county hospital, from meningitis.

**Daniel Pool** ♂ St. Paul; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1885; aged 66; died, January 4, following a long illness.

**John L. Smith**, Clarksburg, Ind.; Cincinnati College of Medicine and Surgery, Cincinnati, 1877; formerly postmaster; aged 70; died, January 15.

**Arthur Howard Nichols** ♂ Boston; Medical School of Harvard University, Boston, 1866; aged 82; died suddenly, January 9, from heart disease.

**Leland S. Weaver**, White Cloud, Mich.; University of Michigan Medical School, Ann Arbor, 1864; aged 79; died, January 9, from pneumonia.

**Wilbur Phelps Morgan** ♂ Baltimore; University of Maryland School of Medicine, Baltimore, 1862; aged 81; died, December 20, from senility.

**Sarah Brooke**, Atascadero, Calif.; Woman's Medical College of Pennsylvania, Philadelphia, 1874; aged 83; died, January 4, from paralysis.

**Edward Philip Koch**, Chicago; Missouri Medical College, St. Louis, 1881; aged 68; died, January 25, from heart disease and chronic nephritis.

**John Babington**, Detroit; Hahnemann Medical College and Hospital of Chicago, 1881; aged 67; died suddenly, January 6, from heart disease.

**George Draper Kelley**, Lexington, Ky.; Medical School of Harvard University, Boston, 1892; aged 56; died, January 8, from heart disease.

**John B. Mathiesen** ♂ Eau Claire, Wis.; University of Christiania, Norway, 1898; aged 50; died, January 17, from pleuropneumonia.

**Sevier E. Snodgrass**, West, Texas; Missouri Medical College, St. Louis, 1879; aged 73; died suddenly, January 2, from acute indigestion.

**Emil Kuder**, Coffeyville, Kan. (licensed, Kansas, 1901); veteran of the Franco-Prussian War; aged 71; died, January 2, from uremia.

**Homer Lafayette Mershon**, Saxonburg, Pa.; Bellevue Hospital Medical College, New York, 1878; aged 72; died, November 27.

**Peter C. Bradley**, Shawnee, Okla.; Medical Department University of Louisville, Louisville, Ky., 1891; aged 69; died, January 9.

**Charles Rawling**, New Haven, Conn. (licensed, Connecticut, 1893); Civil War veteran; aged 88; died, January 10, from senility.

**James R. Williams**, High Point, N. C. (licensed, years of practice); aged 88; died, January 2, from senility.

**Henry Shepard**, Tahona, Okla. (licensed, years of practice); aged 75; died, December 10.



## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

### MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

**Healing Springs Water.**—The Virginia Hot Spring Co., Hot Springs, Va., shipped in interstate commerce in May, 1922, a quantity of "Healing Springs Water" that was misbranded. The federal chemists reported that analysis of a sample of the water showed it to be a moderately mineralized water, the principal dissolved constituents being the bicarbonates of calcium and magnesium and magnesium sulphate (Epsom salt). The product was labeled in part "a medicinal water recommended in the case of gout, rheumatism, insomnia, kidney and bladder troubles and for the nervous system." These statements were declared false and fraudulent for the reason that the article did not contain any ingredient or combination of ingredients capable of producing the effects claimed. In August, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[Notice of Judgment No. 10677; issued Nov. 23, 1922.]

**Bick's Sarsaparilla.**—The Palestine Drug Co., St. Louis, Mo., shipped (among other products) during the summer of 1920 a quantity of "Bick's Sarsaparilla" that was misbranded. The federal chemists reported that the preparation contained less than 1 per cent. sodium salicylate, 0.7 per cent. potassium iodid, plant drugs extractives, including sarsaparilla and a laxative drug, sugar, alcohol and water. It was falsely and fraudulently labeled as a blood purifier. In May, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[Notice of Judgment No. 10693; issued Nov. 23, 1922.]

**Yerk's Wine Extract of Cod Liver Oil.**—The Yerk's Chemical Co., Winston-Salem, N. C., shipped in October, 1921, a quantity of this preparation that was misbranded. The Bureau of Chemistry analyzed the product and reported that it consisted essentially of compounds of sodium, potassium, calcium, iron, quinin, strychnin and phosphorus, extracts of plant drugs, possible traces of cod-liver oil, malt extract, sugar and alcohol. It was flavored with benzaldehyde. The product was falsely and fraudulently labeled so as to create in the minds of purchasers the impression that the article was an effective remedy for "General Debility, Nervous Prostration, Tuberculosis, Emaciation, Scrofulosis, Winter Cough, Bronchitis, etc." In June, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[Notice of Judgment No. 10729; issued Dec. 18, 1922.]

**Anemia Tablets.**—In March, 1920, a quantity of these tablets consigned by Carlos M. Rivoll, Laredo, Texas, and shipped from Texas to California were declared misbranded. The federal chemists reported that the tablets consisted of milk sugar (95 per cent.) and small quantities of cinchona alkaloids, charcoal, sulphur, gum and compounds of arsenic, phosphorous, iron and sodium. The circulars accompanying these tablets declared that they would "restore lost vigor, relieve mental disorders, neurasthenia, etc.," and that they would also "produce an appetite," cure rickets and menstrual disorders. These and similar claims were declared false and fraudulent and in April, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[Notice of Judgment No. 10824; issued Dec. 23, 1922.]

## Correspondence

### DEATH RATE OF PHYSICIANS

*To the Editor:*—The statement in the editorial on the deaths of physicians in the United States in 1922 (THE JOURNAL, January 6) was to the effect that the death rate of physicians in 1922 was 17.73 per thousand, making it appear that this was a rate comparable in some respects to the death rates usually quoted for general population groups. Would it not perhaps be well in future statements with regard to physicians' death rates to indicate quite clearly that this is a selected age and sex (mainly) death rate, as physicians are still preponderantly males. As a matter of interest, I obtained, through the courtesy of Dr. Dublin of the Metropolitan Life Insurance Company the death rates for males at all occupations and at different age groups in 1920. It will appear from the table that, although the death rate of physicians is slightly higher than that of lawyers, judges and justices of the ages 25 to 44, it is strikingly less than the death rate of all occupations of men at this age group. When, however, we reach

DEATH RATES, REGISTRATION STATES, 1920  
RATES PER HUNDRED THOUSAND MALES

	10 to 13	14 to 19	20 to 24	25 to 44	45 to 64	65 and Over	All Ages 10
All occupations...	142.2	424.5	521.7	706.4	1648.4	8482.9	1260.1
Physicians and surgeons .....	.....	.....	527.7	568.0	1960.9	10053.7	1900.9
Lawyers, judges and justices....	.....	.....	401.2	519.9	1964.6	9320.8	1781.7
Clerks (except in stores) .....	.....	438.9	548.2	801.3	2082.2	7933.5	1023.1

DEATH RATES PER THOUSAND AMONG PHYSICIANS,  
1921 AND 1922

J. A. M. A. (1-6-1923).....	17.73	
J. A. M. A. (1-7-1922).....	14.65	(Includes physicians of Canada)
J. A. M. A. (1-1-1921).....	15.46	(Includes physicians of Canada)

the age group 45-64 we find the excess of physicians' death rate over that for all occupations notable, and at the ages 65 and over and for all ages the physicians' death rate far exceeding the death rate of other occupations. So, in spite of the fact that we are dealing with a special age and occupation group, which might justify our expecting a higher rate in comparison with other males at these ages, we find a specific excess of deaths for physicians.

HAVEN EMERSON, M.D., New York.

### "INTESTINAL WORMS AND APPENDICITIS"

*To the Editor:*—In the editorial on "Intestinal Worms and Appendicitis" (THE JOURNAL, January 27, p. 256), which gives a review of recent work on the agency of worms, particularly the ordinary pinworm, in the production of this trouble, no reference is made to work which was done a number of years ago, and for that reason I am calling attention to it.

This subject was discussed quite fully by Metchnikoff in his Harben Lectures, published under the title of "The New Hygiene" in 1907. He quotes Desprès as pointing out in 1868 the frequent presence of worms in what were then called "stercoral" abscesses localized in the region of the cecum and ascending colon. Metchnikoff gives a number of observations of his own, one of which concerns a professor of hygiene who apparently contracted appendicitis from his wife through the agency of worms. Another striking instance is that of an estate on which many cases of appendicitis



occurred. A few months' residence on this estate seemed to suffice to bring on an attack of appendicitis. Members of the family, as well as the servants, suffered. It was found that the feces of these people abounded in intestinal worms, and the conclusion was that food must have been frequently contaminated by human excreta containing eggs of worms.

More unusual and equally interesting is the report on necropsies of some fifty chimpanzees in which five cases of acute or chronic appendicitis were found. In one case particularly, which ran an acute course ending in death and which presented characteristic symptoms, intestinal worms were found.

Metchnikoff considered that the injury to the intestinal wall done by worms is entirely comparable to the breaks in the skin caused by insects in furnishing entrances for pathogenic organisms.

It has always been a source of surprise to me that the surgeons of America, who, I believe, have done more than any other surgeons in the world in regard to appendicitis, have not followed the indications pointed out in these lectures of Metchnikoff. The attention now being given to the matter in Germany illustrates the old saying that "there is nothing new under the sun."

MAZYCK P. RAVENEL, M.D., Columbia, Mo.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### MERCUPRESSEN

To the Editor:—I would appreciate any information which you may be able to give me regarding Mercupressen and Neo-Mercupressen. These articles are manufactured by the Barsa Chemical Company, Inc., 28 West Twenty-Third Street, New York City.

GEORGE EDWARD PERKINS, M.D., Boston.

ANSWER.—From the advertising issued by the Barsa Chemical Company, Inc., 28 West Twenty-Third Street, New York City, for Mercupressen, this product is essentially the same as the product which the Spirocide Corporation, 28 West Twenty-Third Street, New York City, marketed as "Spirocide."

Spirocide is claimed to be composed of metallic mercury, copper sulphate, cypress cones, henna, nutgalls and dried pomegranates. The product was sold in the form of tablets. For use, the tablet was ignited, and the fumes were inhaled by the patient. The Council on Pharmacy and Chemistry held that the claims for Spirocide were unproved and unwarranted, and that the routine use of an inexact method for the administration of mercury is detrimental to sound therapy. (THE JOURNAL, Jan. 22, 1921, p. 259). The Council's rejection of Spirocide was subsequently fully sustained by the reinvestigation of the inhalation treatment of syphilis carried out by Cole, Gericke and Sollmann (THE JOURNAL, March 4, 1922, p. 654).

### WOOD'S METAL

To the Editor:—Please give the formula for Wood's metal, used in making casts of blood vessels, as described by A. A. Ghoreyeb (J. M. Res. 35: 87 [Sept. 16] 1916).

H. H. TURNER, Louisville, Ky.

ANSWER.—Bismuth, 50 per cent.; lead, 25 per cent.; tin, 12.5 per cent.; cadmium, 12.5 per cent. Thorpe's Dictionary of Applied Chemistry gives this formula: bismuth, 8 parts; lead, 4 parts; tin, 4 parts, and a little cadmium.

Autolysis.—"Autolysis" has quite generally been used to designate a process of cell or tissue deterioration in which the more complex nitrogenous substances, particularly proteins, are reduced to simpler form through the agency of enzymes which have been elaborated by the cells or tissues themselves.—Sturges and Retther, J. Bacteriol., November, 1922.

## Medical Education, Registration and Hospital Service

### COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vighne, Juneau.  
KANSAS: Topeka, Feb. 13. Sec., Dr. Albert S. Ross, Sabetha.  
NATIONAL BOARD OF MEDICAL EXAMINERS: Written examination in Class A medical schools. Part I and II, February 12-14 and February 15-16. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for the February examination must be sent in by January 1.  
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.  
VERMONT: Burlington, Feb. 13. Sec., Dr. W. Scott Nay, Underhill.

### GRADUATE INSTRUCTION IN TUBERCULOSIS

With Particular Reference to the University of Minnesota\*

J. A. MYERS, PH.D., M.D.

Assistant Professor of Medicine, University of Minnesota Graduate and Medical Schools

MINNEAPOLIS

Statistics recently compiled by Dr. Bosworth<sup>1</sup> of the Minnesota State Advisory Commission show that of all the tuberculous patients (5,786) discharged from the county sanatoriums of Minnesota, the condition in 17.2 per cent. was incipient, in 35.6 per cent. moderately advanced, and in 47.2 per cent. far advanced on admission. From the time of the opening of the Minnesota State Sanatorium to Jan. 1, 1922, there had been discharged from that institution 3,921 pulmonary tuberculosis patients. The disease in 17.3 per cent. of this number was incipient, in 47.1 per cent. moderately advanced, and in 35.6 per cent. far advanced on admission. The figures from the state sanatorium are especially significant, since this institution was established by law for the treatment of incipient tuberculosis. It is plainly evident that something is wrong with our present educational system and methods of diagnosis and treatment of tuberculosis when 82.7 per cent. of the patients being admitted to these county and state sanatoriums have lost their best chances of complete recovery before admission.

Krause,<sup>2</sup> Klotz,<sup>3</sup> McCrae,<sup>4</sup> Dock,<sup>5</sup> Thayer<sup>6</sup> and others have shown that there is an opportunity for much improvement in the teaching of tuberculosis to undergraduates in our medical schools, but it is obvious that because of the crowded curriculums in these schools, students cannot become experts during the time they are at work as candidates for the medical degree. It seems necessary, therefore, that considerable time be spent after graduation in an intensive study of tuberculosis. This also holds true in other branches, such as surgery, general medicine, obstetrics, otolaryngology and pediatrics. Concerning graduate instruction in such subjects, Lyon,<sup>7</sup> Frazier and Lewis,<sup>8</sup> Litzenberg,<sup>9</sup> Shambaugh,<sup>10</sup> Hamil-

\* From the Department of Internal Medicine, University of Minnesota Medical School.

\* Read before the Tenth Annual Meeting of the Mississippi Valley Conference on Tuberculosis, Oct. 9, 1922, Milwaukee.

1. Bosworth, Robinson: Personal communication to the author.

2. Krause, A. K.: Undergraduate Instruction in Tuberculosis. Am. Rev. Tuberc. 1: 233 (June) 1917; Some Problems of Medical Education in Tuberculosis, ibid. 5: 755 (Nov.) 1921; Tr. Nat. Tuberc. 17: 202, 1921.

3. Klotz, W. C.: Undergraduate Instruction in Tuberculosis. Am. Rev. Tuberc. 5: 751 (Nov.) 1921; Tr. Nat. Tuberc. 17: 194, 1921.

4. McCrae, Thomas: The Separation of Tuberculosis from General Medicine. Tr. Nat. A. Study & Prev. Tuberc. 12: 83, 1916.

5. Dock, George: The Relation of the General Hospital to Tuberculosis. Tr. Nat. A. Study & Prev. Tuberc. 12: 89, 1916.

6. Thayer, W. S.: Observations on the Teaching of Tuberculosis. Tr. Nat. A. Study & Prev. Tuberc. 12: 92, 1916.

7. Lyon, E. P.: Graduate Education in the Clinical Branches, and the Minnesota Experiment. J. A. M. A. 69: 1307 (Oct. 20) 1917.

8. Frazier, C. H., and Lewis, Dean: Report of the Committee on Postgraduate Instruction in Surgery. J. A. M. A. 76: 732 (March 12) 1921.

9. Litzenberg, J. C.: The Graduate Degree in Obstetrics and Gynecology. Am. J. Obst. 78: 404 (Sept. 18) 1918.

10. Shambaugh, G. E.: An Experiment in Graduate Training in Otolaryngology. J. A. M. A. 79: 365 (July 29) 1922; Graduate Instruction in Oto-Laryngology (Report of Committee on Graduate Training). A. M. A. Bull., Jan. 15, 1921.



ton,<sup>11</sup> Muller,<sup>12</sup> Sedgwick<sup>13</sup> and Wilson<sup>14</sup> have contributed valuable reports and articles. The popularity of such work after graduation has increased until now we find many physicians expressing a desire to register for one or more years in a graduate school of medicine. Such institutions as the universities of Harvard, Pennsylvania, Tulane, California and Minnesota have already developed graduate schools in medicine to train just such physicians.

Baldwin<sup>15</sup> has called attention to the fact that there are two principal reasons why graduate instruction in tuberculosis is necessary: 1. Most teachers are not especially interested in tuberculosis; therefore, their students receive no special training in this subject. 2. In the average medical school, there are few cases of tuberculosis under observation, since the majority of such cases are sent to sanatoriums and to chronic wards, and are no longer available for special study. Since these facts have obtained in the past, Baldwin further points out that most of the men who have applied for graduate instruction in tuberculosis at the Trudeau School have had their interest aroused because they have developed the disease themselves, or have some connection with an institution which demands more knowledge of tuberculosis. This statement of Dr. Baldwin's is gratifying: "There is an increasing demand on the part of the men who have no special connection with tuberculosis institutions, who wish to perfect themselves in the diagnosis and treatment of tuberculosis."

In the large graduate schools, arrangements may be made for considerable study in tuberculosis. However, in most of them, no attempt has been made to organize work for the training of specialists in this field.

Tuberculosis has become a specialty, and much of the future success in the fight against this disease depends on the training of specialists.

This fact is being recognized more and more, as shown by these two statements:

"If any real advance is to be made in the organization and administration of an effective tuberculosis service, some adequate system will have to be devised, whereby both medical undergraduates and graduates, and especially those who propose to take up the responsible duties of a tuberculosis officer, are thoroughly trained."<sup>16</sup>

"All the available resources for giving intensive, and yet comprehensive, practical instruction in tuberculosis should be organized and placed within the reach of all who wish to

specialize in this subject, and any others who would care to avail themselves of the opportunity."<sup>17</sup>

The income from the Trudeau Foundation makes available annually from three to five fellowships in tuberculosis. These fellowships are granted to tuberculous physicians, medical students or other scientific workers who are engaged in the sanatorium clinical work as members of the staff or in the laboratories as research workers. Dr. Baldwin<sup>18</sup> has informed me that there is always a waiting list for these fellowships, and that the average time each fellow spends in study is approximately eight months.

There are several short graduate courses in tuberculosis offered in the United States. The leading courses of this kind are given at the Trudeau School of Tuberculosis, at Saranac Lake, N. Y., the Colorado School of Tuberculosis, at Colorado Springs, Colo., and the United States Public Health Tuberculosis School, at Oteen, N. C. Each summer these schools offer well organized, intensive courses of from four to six weeks' duration. In some of them the number

of applicants far exceeds the capacity of the school. In fact, in one of them, the registration is completed nearly a year in advance of the course.

From the foregoing, it is obvious that there is a real need, and a demand, for well organized graduate instruction in tuberculosis. Therefore, an attempt has been made in the University of Minnesota to organize all available material so as to make graduate study profitable for physicians who desire to become better acquainted with tuberculosis or to prepare for special work in this particular field.

#### THE FUNDAMENTALS

In organizing this work in the University of Minnesota, the fundamental subjects have been given due consideration (Fig. 1). In anatomy, the student may

devote considerable time to the microscopic and gross study of the chest and its contents in the embryo, fetus, child and adult. The department of physiology offers opportunities for special study of the functions of the organs of the chest. It provides also for the study of the chemistry of respiration, blood, etc. In the department of bacteriology, the isolation, growth, staining and morphology of the tubercle bacillus may be thoroughly studied. Special inoculation work, preparation of vaccines, immunity studies, complement fixation and agglutination tests are taught. The department of pathology provides facilities for the study of experimental tuberculosis. A wealth of gross and microscopic preparations are available which show the different stages of the disease and its effects on the various organs of the human body. There is an opportunity for participation in an adequate number of necropsies on patients dying of tuberculosis. The department of pharmacology offers facilities for the study of the effects of drugs on tuberculous lesions.

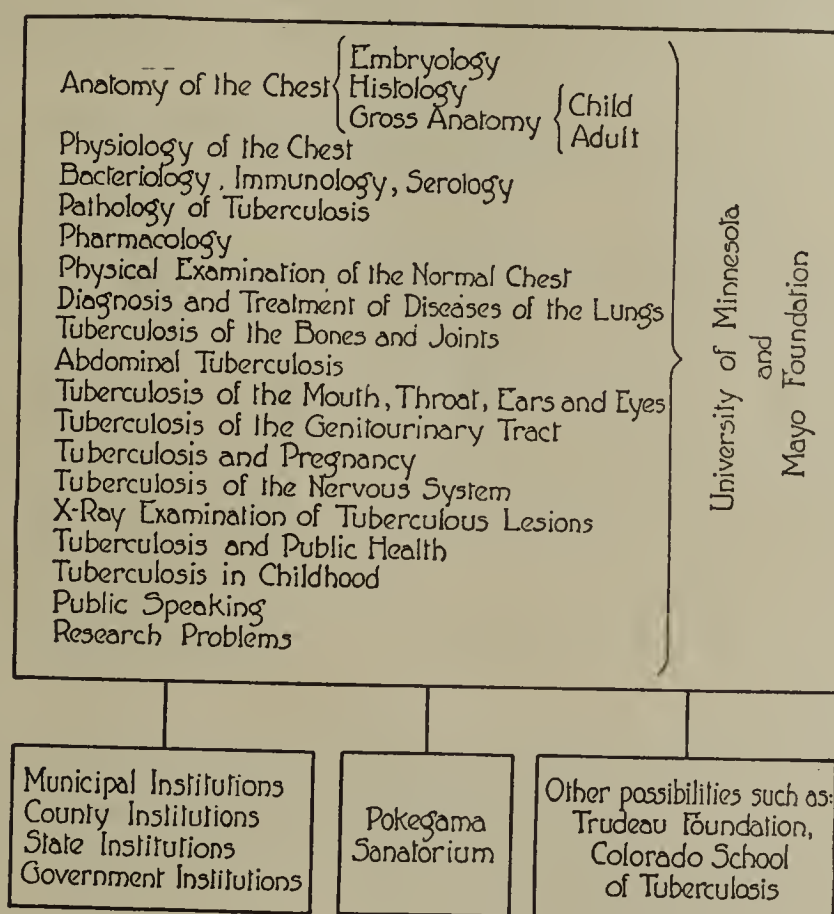


Fig. 1.—Schema of graduate work in tuberculosis.

11. Hamilton, A. S.: Graduate Training in Nervous and Mental Diseases, *J. A. M. A.* **77**: 659 (Aug. 27) 1921.

12. Muller, G. P.: Graduate Instruction in Surgery, *J. A. M. A.* **77**: 503 (Aug. 13) 1921.

13. Sedgwick, J. P.: The Requirements for the Higher Degree in Pediatrics, *Tr. A. Am. Teachers Dis. Child.* **11**: 12-20, 1917.

14. Wilson, L. B.: Report of Committee on Graduate Medical Education, *A. M. A. Bull.* **14**: 45-49 (July 15) 1920; Teaching the Fundamentals of Surgery from the Point of View of the Graduate School, *J. A. M. A.* **79**: 120 (July 8) 1922.

15. Baldwin, E. R.: Post-Graduate Education in Tuberculosis, *Tr. Nat. Tuberc. A.* **17**: 193, 1921.

16. Woodhead, G. S.: Training in Tuberculosis, *Brit. J. Tuberc.* **15**: 53 (April) 1921.

17. King, D. B.: Post-Graduate Instruction in Tuberculosis, *Brit. J. Tuberc.* **15**: 55 (April) 1921.

18. Baldwin, E. R.: Personal communication to the author.



Just as fast as funds permit, books, periodicals and reprints devoted to tuberculosis are being added to the medical school library. During the present year, the graduate school granted a special fund for the collection of a bibliography on tuberculosis. A committee is engaged in this work at the present time, and it is hoped that time and funds will permit such a complete work that the burden of collecting reference titles, which so often falls on graduate students, will be lessened for those specializing in tuberculosis.

CLINICAL MATERIAL

The clinical material for this work is found chiefly in municipal, county, state, government and private hospitals and sanatoriums for the tuberculous.

The Minneapolis General Hospital operates a sanatorium for the tuberculous with a capacity for 135 adults.

The St. Paul City and County Hospital operates a tuberculosis pavilion with a capacity for 110 adults.

The Lymanhurst School for Tuberculous Children maintains a clinic where more than 300 schoolchildren were examined for tuberculosis, and more than 200 other tuberculous children were treated and given instruction in this

nations were made last year. This bureau also provides beds for the observation and treatment of 159 patients in Minneapolis, and 115 such patients in St. Paul.

Pokegama Sanatorium is a private institution located near Pine City. It has a capacity for fifty tuberculous patients, and contains modern equipment for the study and treatment of the disease. It has arranged to support two fellowships for the graduate study of tuberculosis

The Mayo Clinic offers facilities for the diagnosis of diseases of the chest. The roentgen-ray department offers unusual opportunities for the study of tuberculous lesions of various parts of the body. Here the student may also receive excellent training in surgery of the thorax.

Figure 2 shows the distribution of the institutions for the tuberculous throughout the state. The distance from the university to some of these institutions may be offered as an objection; yet there is sufficient material in several of them to justify the trip, and the expenditure of considerable time in them.

In Table 2 it will be observed that there are already available for study approximately 2,100 cases. This number will be materially increased through the new building pro-

TABLE 1.—COUNTY SANATORIUMS OF MINNESOTA, THE FACILITIES OF WHICH ARE AVAILABLE TO GRADUATE STUDENTS

Sanatorium	Capacity		Staff		Laboratory Facilities	Roentgen-Ray Equipment	Helio-therapy	Artificial Pneumo-thorax	Postural Rest	Approximate Distance from University, Miles
	Adults	Children	Physicians	Nurses						
Buena Vista.....	30	0	1	4						80
Deerwood.....	30	0	1	4	Yes	No	Yes	Yes	Yes	100
Fair Oaks Lodge.....	30	0	1	4	Yes	No	Yes	Yes	Yes	150
Glen Lake.....	202	60	14*	39	Yes	No	Yes	Yes	Yes	15
Lake Julia.....	40	8	1	5	Yes	Yes	Yes	Yes	Yes	260
Mineral Springs.....	40	0	1	5	Yes	No	Yes	Yes	Yes	50
Oakland Park.....	32	0	1	4	Yes	Yes	Yes	No	Yes	300
Ottertail County.....	45	0	1	6	Yes	Yes	Yes	Yes	Yes	125
Nopeming.....	130	70	4	27	Yes	Yes	Yes	Yes	No	165
Riverside.....	50	0	1	8	Yes	Yes	Yes	Yes	Yes	120
Sand Beach.....	45	2	1	7	Yes	Yes	Yes	Yes	Yes	150
Ramsey County Pavilion.....	110	0	2	12	Yes	No	Yes	No	Yes	10
Southwestern Minnesota.....	52	0	2	7	Yes	Yes	Yes	Yes	Yes	175
Sunny Rest.....	50	0	1	7	Yes	Yes	Yes	Yes	Yes	250
Total.....	886	140	32	139	Yes	No	Yes	Yes	Yes	

\* This number includes medical consultants.

special school last year. The Trudeau School, serving as a preventorium, cares for ninety-six pupils during the school year.

In the St. Paul Preventorium, seventy-five children are receiving excellent care and training throughout the year.

In the state of Minnesota, there are fourteen county sanatoriums and one state sanatorium. These institutions are under the supervision of the state advisory commission. The resolution contained in a recent communication from Dr. Robinson Bosworth<sup>1</sup> of the advisory commission shows the attitude which this commission has toward the teaching of tuberculosis:

*Resolved*, That the dean of the medical department of the University of Minnesota be advised that the several tuberculosis sanatoria of the state offer their facilities for the teaching of tuberculosis by their medical staffs to the students of the medical department of the university and urge that the medical department of the university accept and use these facilities so offered.

Table 1 shows that these institutions make available for study 886 tuberculous adults and 140 tuberculous children.

The state hospital for crippled children offers excellent facilities for the diagnosis and treatment of bone and joint tuberculosis. One hundred beds are available for such cases.

The state sanatorium is equipped to care for 260 early cases. Although other favorable cases are admitted, this institution offers excellent opportunities for the study of minimal tuberculosis.

The United States Veterans' Bureau, District No. 10, with headquarters in Minneapolis, operates tuberculosis clinics in Minneapolis and St. Paul where approximately 8,000 exami-

gram at the Glen Lake Sanatorium and at new county sanatoriums which already have been proposed. In addition to this material, Table 3 shows that tuberculosis clinics exist in close proximity to the university where more than 15,000 visits are made each year.

INSTRUCTION

Candidates for an advanced degree may select tuberculosis as their major subject. They are then required to select a closely allied or supporting subject as a minor. Such students are strongly advised to spend at least one third of their time in anatomy, physiology, pathology and bacteriology, and the remaining time in clinical studies. The method of instruction is thus described by Dean Lyon:<sup>7</sup>

"There is no hand feeding, no formal reciting, no reporting of absences, no routine laboratory exercises. The essential environment consists of libraries, laboratories and clinical material, with competent supervision, and above all, criticism. The student with his adviser as a guide, is turned loose to educate himself. Mostly he learns by doing, which is the natural way."

Figure 1 shows some of the subjects which are emphasized, as well as various opportunities for study outside the university. In special cases, arrangements may be made for the student to spend some time in institutions in other states, such as the Trudeau and the Colorado schools of tuberculosis. It will be seen that the research problem has been given a prominent place. As pointed out by Webb,<sup>19</sup> there is much

19. Webb, G. B.: Tuberculosis: The Rationale of Research, *Am. Rev. Tuberc.* 5: 271 (June) 1921; *Tr. Nat. Tuberc. A.* 17: 26, 1921.



that we do not know about tuberculosis. Therefore, there are many interesting problems on which much time may be spent with profit. Students who remain more than one year may equip themselves with a knowledge of the fundamentals of original investigations so that they are prepared to carry on research work throughout the active years of their lives.

Provisions have been made for students of three groups:

Group 1 consists of students who hold medical degrees, and who desire to spend from one to three years in the study of tuberculosis. Each student selects a research problem, either laboratory or clinical, which is pursued throughout the course. In addition to this, students choose certain courses in anatomy, physiology, bacteriology and pathology, as well as courses in physical findings in the normal chest, and diagnosis and treatment of diseases of the lungs. Students interested in special phases of tuberculosis may spend considerable time in institutions where such special material is available. For example, students interested in tuberculosis of childhood spend a considerable time in the institutions for children, while students especially interested in surgery of the thorax devote a good deal of time to this subject at the Mayo Clinic, the state hospital for crippled children, and the Glen Lake Sanatorium. Other students whose problems require that they see many patients may do so by spending short periods in several of the institutions. Each student in this group must acquire a working knowledge of tuberculosis as a whole.

The students in this group, on the satisfactory completion of their work, are granted the degree of Master of Science in Medicine or Doctor of Philosophy in Medicine, depending on the length of time spent, and the results accomplished.

Group 2 consists of students who are majoring in some other field, such as obstetrics, pediatrics, surgery or general medicine, and who desire to spend some time in the study of tuberculosis. Such students are permitted to select for study any phase of tuberculosis they desire.

Group 3 consists of general practitioners and recent medical graduates who wish to spend a short time, possibly not more than one quarter, in the study of tuberculosis. Arrangements are made whereby such physicians may devote their entire time during this period to the graduate study of tuberculosis. Other general practitioners who are unable to spend this much time may soon avail themselves of a four to six weeks' intensive course in tuberculosis. An attempt is being made to organize this course to cover approximately the same time and subjects as the short courses at the Trudeau, Colorado and Oteen schools of tuberculosis.

Three graduate fellowships in tuberculosis are in existence at the University of Minnesota. The first of these is supported by the Hennepin County Tuberculosis Association. This fellowship pays the student \$750 the first year, and a somewhat larger amount may be allowed for the second and third years. Two other graduate fellowships are supported by Dr. H. Longstreet Taylor. Students holding either of these two fellowships are required to spend one half of their time at the Pokegama Sanatorium, while the greater part of the remaining time is spent at the University of Minnesota. These fellowships pay from \$1,000 to \$1,500 a year.

#### TUBERCULOSIS AS A LIFE WORK

In talking with senior medical students and recent graduates in medicine, one hears many objections to tuberculosis as a life work. Probably one of the reasons for these objections is that in many medical schools the work in tuberculosis is poorly organized, and the students do not catch a vision of the possibilities in this field. Many physicians

have stated that they have no desire to deal with a hopeless disease. Here the fault does not lie with such physicians but with their undergraduate training in tuberculosis. It is gratifying to be aware of the interest that is being manifested in undergraduate instruction in tuberculosis in various parts of the country at present, and it is hoped that the efforts being made in this direction soon will be productive of more graduates in medicine who know that a greater percentage of those infected recover from tuberculosis than from any other major disease.

Other physicians object to tuberculosis work on the ground that they themselves may become tuberculous through long

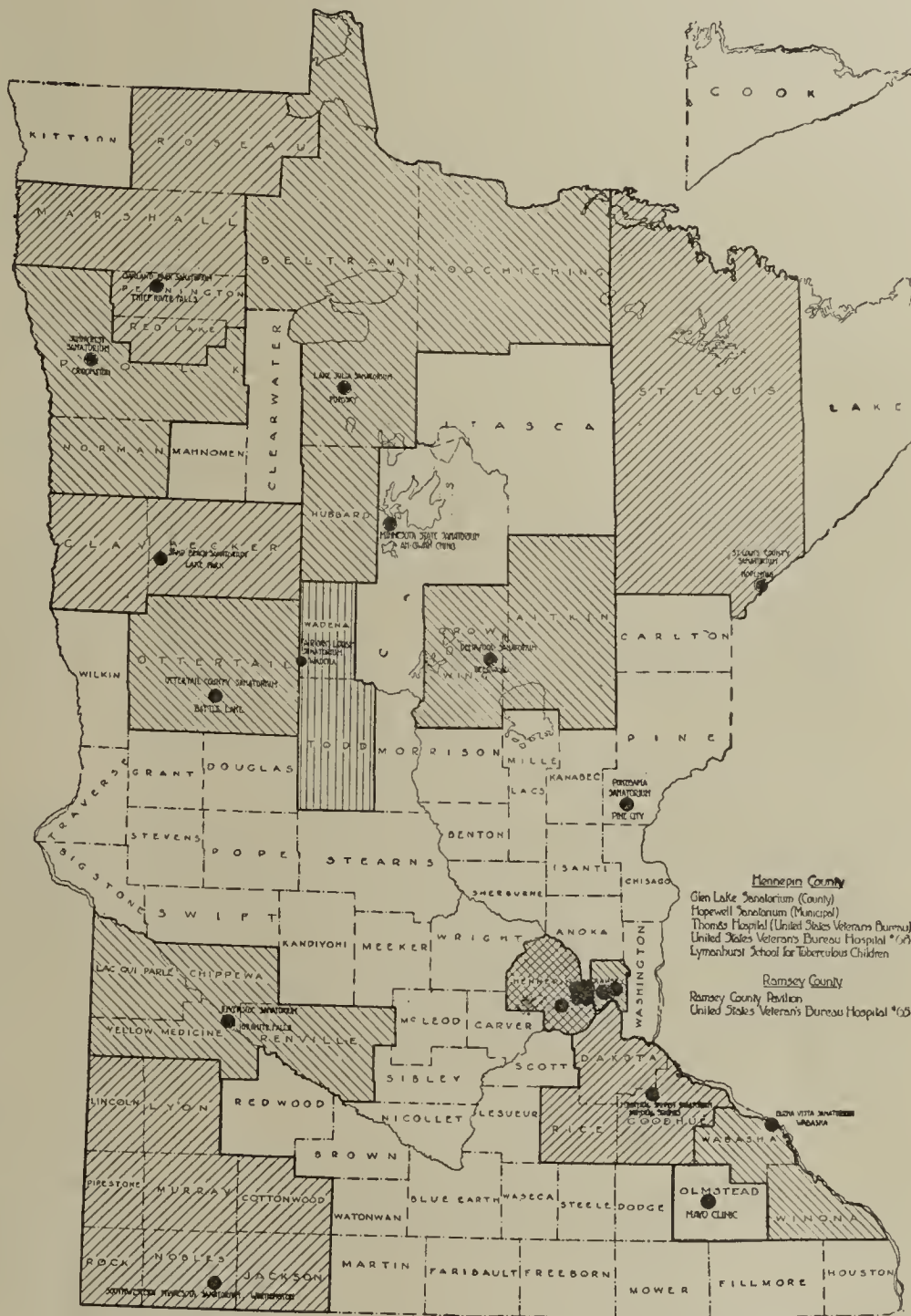


Fig. 2.—Distribution of Minnesota institutions for tuberculous patients.

association with tuberculous patients. To be sure, physicians always take the risk of becoming infected while dealing with any communicable disease. It has been shown that adult infection does occur in tuberculosis. However, the danger is not great to any physician who exercises intelligently the ordinary precautions. The report of Toan<sup>20</sup> of the Michigan State Sanatorium shows that in twelve years there have appeared only three cases of active tuberculosis among 857 nontuberculous employees who had lived at the sanatorium for periods of from three months to twelve years. Furthermore, in these three cases it was very unlikely that their

20. Toan, J. W.: A Study of Employees of the Michigan State Sanatorium for a Period of Twelve Years, read before the Mississippi Valley Conference on Tuberculosis, Sept. 12, 1921.



disease was contracted at the sanatorium. "The stay of two years and over on the part of twenty-nine apparently well employees has not produced a single authentic case of active tuberculosis." Similar reports have been made from other institutions for the tuberculous. It is much safer for the physician or the layman to associate with a patient whose sputum is positive, and who has been trained to prevent the spread of bacilli, than to be found in public gatherings where many unrecognized and untrained patients may exist.

Still other physicians state that the financial returns are too poor from treating tuberculous patients. They add also that public health and other organizations are operating so many free clinics and institutions for the diagnosis and treatment of tuberculosis that the future offers little or no opportunity in this field for the private practitioner. It is true that the financial remuneration from tuberculous patients is not so great as in some other fields of medicine, particularly surgery; but the organizations operating clinics throughout the country, as well as other educational organizations, are instructing the public as to the dangers of tuberculosis. The result is that many persons already are reporting every six

more well trained specialists we produce, the easier will be the fight and the sooner the victory will be won. If the free clinic is developed to the extent of discouraging candidates for graduate education in tuberculosis, the present generation will not be affected greatly, but two or three generations hence will find us with few or no scientifically trained specialists in tuberculosis. On the other hand, the free clinic properly organized and controlled cannot help but be a splendid educational agent helpful to patients and special workers, and playing a most effective rôle in the campaign against tuberculosis.

The prospective graduate student in tuberculosis inquires as to what positions are available when his special training is completed. In discussing what attracts young physicians to enter on a scientific medical career, Krause<sup>21</sup> recently said:

"It is, besides the facilities and opportunities for work, the possibility of ultimately attaining a position of dignity and influence in their chosen work. This is, and always will be, the incentive: the opportunity to make money, to 'cash in' will always be subsidiary, and when it comes and is grasped, it usually plays havoc with a man's usefulness as an investi-

TABLE 2.—MINNESOTA INSTITUTIONS FOR THE TUBERCULOUS, THE FACILITIES OF WHICH ARE AVAILABLE TO GRADUATE STUDENTS

Sanatorium	Capacity		Staff		Labo- ratory Facilities	Roentgen- Ray Equip- ment	Helio- therapy	Artificial Pneumo- thorax	Pos- tural Rest	Sur- gical	Knopf's Physio- logic Adjuvant	Approx. Distance from University, Miles
	Adults	Chil- dren	Physi- cians	Nurses								
Hopewell Sanatorium.....	135	0	2	18	Yes	Yes	Yes	Yes	Yes	Yes	Yes	5
Lymanhurst School.....	0	125	22*	7	Yes	Yes	Yes	No	No	No	No	2
St. Paul Preventorium.....	0	75	2	7	No	No	Yes	No	No	No	No	10
Trudeau School.....	0	96	1	1	No	No	No	No	No	No	No	1/2
County sanatoriums (combined).....	886	140	32*	139	See Table 1							
State Hospital for Crippled Children.....	0	100	35*	22	Yes	Yes	Yes	No	No	Yes	No	10
State Sanatorium.....	231	29	2	14	Yes	Yes	Yes	No	Yes	No	Yes	202
United States [Thomas Hospital.....	75	0	2	12	Yes	Yes	Yes	Yes	Yes	No	No	1/2
Veterans' Bureau [Asbury Hospital.....	84	0	4	8	Yes	Yes	Yes	Yes	Yes	Yes	No	1
Bureau [Aberdeen Hospital.....	115	0	3	7	Yes	Yes	Yes	No	Yes	Yes	No	10
Pokegama Sanatorium.....	50	0	7*	13	Yes	Yes	Yes	Yes	Yes	Yes	No	75
Total.....	1,576	565										

\* This number includes medical consultants.

to twelve months for examination in order to make sure that they are free from tuberculosis. Such a procedure will be adopted, doubtless, by large numbers of people as the educational work is continued and increased. It is questionable, however, whether a physician who places too much stress on financial returns should specialize in tuberculosis—or in any other phase of medicine, for that matter. The service to be rendered to the individual, the community and humanity at large always must occupy first place in the minds of trustworthy physicians.

TABLE 3.—TUBERCULOSIS CLINICS IN CLOSE PROXIMITY TO THE UNIVERSITY OF MINNESOTA

	Approximate Number of Visits Yearly
Minneapolis General Hospital.....	1,700
University of Minnesota.....	1,700
St. Paul City Clinic.....	3,500
United States Veterans' Bureau, Minneapolis and St. Paul	8,000
Lymanhurst School for Tuberculous Children.....	500
Student Health Service, University of Minnesota.....	400
Total .....	15,800

Is the objection to free clinics justified? Both affirmative and negative answers may be given to this question. It is true that organizations operating such clinics will defeat their end if their members become too enthusiastic. Some of these organizations are in the control of laymen or salaried medical men who have not seen the dangers of overdeveloping the free clinics. Unless some specific treatment for tuberculosis is discovered, we must continue our fight somewhat along the present lines for generations to come. The

gator. Without the incentive I have mentioned, we can look forward to but little advance in real tuberculosis education; for we will not be in a position to train teachers of the same grade, say, as those who now occupy our chairs of medicine, surgery, pediatrics, etc."

At present, we are able to point the student to a very few chairs of tuberculosis in the medical schools of America. Moreover, in most medical schools, there is not a division of tuberculosis, but this subject is taught as a part of the course in general medicine. It is obvious, therefore, that at the present time we have little or no attraction to offer the student who desires to become a teacher of tuberculosis. Just appearing on the horizon, however, is what promises to change this condition in the next few decades. The public is already beginning to ask why our medical schools do not place more emphasis upon tuberculosis.

When such visions are translated into realities, in all probability we shall experience little difficulty in securing the proper type of students for graduate work in tuberculosis. On the other hand, so little interest has been manifested in graduate work in tuberculosis in the past that, as Krause has pointed out, if every medical school in the country were to open a new department, or even division of tuberculosis, it is really questionable whether enough scientifically trained men, that is, men qualified for teaching and research, in this field could be found to occupy the positions.

There are more than 500 sanatoriums for the tuberculous in the United States, many of which offer positions to physicians well trained in tuberculosis. It is true that the majority of these positions pay poorly in terms of dollars and cents;

21. Krause, A. K. (Footnote 2, second reference).



but some of them offer excellent opportunities for study and are good stepping stones for those seeking advancement. The sanatorium is often objected to on the ground of being so isolated from great cities and society. We must admit that in former days gross errors were made in selecting sites for such institutions; but present tendencies are toward placing them where their facilities will be available for the development of special tuberculosis departments in our medical schools.

SUMMARY

1. Tuberculosis has become a specialty in the field of medicine.
2. The present teaching facilities in this country are inadequate to train a sufficient number of specialists.
3. Owing to the crowded condition of the medical school curriculums, graduate work in tuberculosis is essential for the proper training of specialists.
4. The University of Minnesota Graduate School of Medicine has access throughout the state to approximately 1,500 tuberculous adults and more than 500 children in sanatoriums and preventoriums for special study. In addition, there are tuberculosis clinics in close proximity to the university where more than 15,000 visits are made annually.
5. The anatomy, physiology, bacteriology, pathology and pharmacology laboratories offer special advantages for the study of general tuberculosis, other diseases of the lungs, and closely allied subjects.
6. The objects of the graduate work in tuberculosis in the University of Minnesota are: (1) to offer general practitioners special training in the diagnosis of early tuberculosis; (2) to produce special laboratory and roentgen-ray workers in tuberculosis; (3) to produce productive research workers in various phases of tuberculosis, and (4) to produce scientifically trained specialists with a working knowledge of tuberculosis as a whole.

Alaska September Examination

Dr. Harry C. DeVighne, secretary, Alaska Territorial Medical Examining Board, reports that one candidate, a graduate of the St. Louis University School of Medicine, was licensed at the written examination held at Juneau, Sept. 5, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass.

West Virginia October Examination

Dr. W. T. Henshaw, secretary, West Virginia Public Health Council, reports the oral, written and practical examination held at Charleston, October 10, 1922. The examination covered 11 subjects and included 132 questions. An average of 80 per cent. was required to pass. Thirteen candidates were examined, all of whom passed. Ten candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Emory University	.....	(1922)	89.3
Chicago Medical School	.....	(1920)	80
University of Louisville Medical Department	.....	(1922)	91.7
Tulane University	.....	(1921)	85
College of Physicians and Surgeons, Boston	.....	(1915)	81.7
St. Louis College of Physicians and Surgeons	.....	(1922)	80
University of Cincinnati	.....	(1920)	80
Western Reserve University	.....	(1920)	82.2
Jefferson Medical College	.....	(1922)	89.3, 91.3, 92.2
Medical College of Virginia	.....	(1921)	82.4
University of Virginia	.....	(1920)	86.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Louisville Medical Department	.....	(1921)	Kentucky
Baltimore Medical College	.....	(1906)	Penna.
Barnes Medical College	.....	(1907)	Illinois
Jefferson Medical College	.....	(1916)	Penna.
University of Pittsburgh	.....	(1914)	Penna.
Medical College of the State of South Carolina	.....	(1918)	S. Carolina
Vanderbilt University	.....	(1899)	Virginia
Medical College of Virginia	.....	(1917), (1919)	Virginia
University College of Medicine, Richmond	.....	(1899)	Virginia

Social Medicine and Medical Economics

THE DIFFICULTIES OF DR. HADWEN

Some months ago THE JOURNAL commented on the arrival in this country of Dr. Walter J. Hadwen, M.D., J.P., who is apparently the chief propagandist for the antivivisectionists throughout the world. It is now an old story that the efforts of Dr. Hadwen, and the group he represents, were overwhelmingly defeated in Colorado and California, in which antivivisection was submitted to a decision by the people during the last election. Dr. Hadwen has now returned to England and is publishing in the *Abolitionist*, a British antivivisection magazine, a record of his trip. We regret to learn that Dr. Hadwen feels that he was very unkindly treated while here. Thus of his visit to Chicago:

I did not expect much sympathy from the Press in this city, and I thought I might get some opposition. Chicago is the publishing centre of the *Journal of the American Medical Association*, and I had scarcely put my foot on American soil when an abusive, ill-bred, personal attack upon me appeared in its columns from the editorial pen, probably induced by an announcement of my coming by the Associated Press of Washington, sent to all American newspapers. I am so accustomed to these unscrupulous attacks that they have not the least effect upon me; they fulfil the old maxim: "Bad case, abuse plaintiff's attorney." These men could not fight fair to save their lives.

UNFAIRNESS OF THE MEDICAL PRESS

Last year, the Editor of the same journal published an attack upon me by Surgeon-General Ireland, the medical chief of the American Army, who was backed up by a weak and very long communication from Sir Thomas Goodwin, the Medical Chief of the English War Office; but although I forwarded what I considered a crushing reply to these officials, the Editor declined to publish it. Consequently I have had that attack thrown up at me again and again in the States by medical opponents, and have been giped at because I "never answered" my traducers! Apparently, it is thought in America that the medical fraternity are not to be trusted to form a judgment of their own, so they have to be mothered and spoon-fed by their literary nurses. I have occasionally experienced a similar lack of justice in England, but I am glad to see that the *British Medical Journal*, which published (from Philadelphia) one of Dr. W. W. Keen's characteristic attacks upon me during my absence in America, courteously allowed Miss Kidd space for a complete answer in my defense.

But there was no opposition at the Chicago meeting. It was held in a huge hall—the Aryan Grotto Theatre—and there was a splendid audience, presided over by Dr. E. B. Beckwith, who has come out very boldly on the side of truth. But the meeting was not well reported, though there were several good interviews published. One leading paper had a record in the early edition, but it was replaced in later editions by an official medical communication of the same length on the "Diphtheria peril"! ["This was the most unkindest cut of all!"—ED.] The serum and vaccine manufacturers hold shares heavily in newspapers throughout the States, and in some cases have their own censor who overrules the Editor and runs the blue pencil through all copy that would interfere with the sale of their wares, and furnishes all the news necessary to promote it. The medical bureaucracy in America is the biggest tyranny that has ever disgraced the history of medicine, and unless the people rise up against it they will presently be completely under its power.

REPORT OF CORNELL PAY CLINIC

The Cornell University Pay Clinic has just issued a report on the first year of its work. During this period, 113,981 visits were made to the clinic by 22,409 different persons. The attendance in various departments varied greatly, the greatest attendance being in medicine, 14,797; in urology, 13,655; in skin, 15,411, and in nose and throat, 14,380. In order to protect the private practitioners of the community and not to duplicate the field covered by the free dispensary, all those visiting the clinic were classified into certain economic groups. Of the 20,000 consecutive cases first admitted, 10,000 were classed as regularly qualified for the clinic. Of these patients, 207 were considered temporary because their applications were due to unemployment, previous illness or a financial emergency; twenty-six required unusual expenses for making of diagnosis; 3,085 were classed as being on a borderline, but admitted for various reasons; 874 were doubtful, but admitted temporarily for a single examination; 117 were not rated, and three were admitted because of special interest as teaching cases. Five thousand and thirty-eight cases were rejected. Of these, 4,520 were capable of meeting the fees of private physicians, and 196 were rejected for miscellaneous reasons. Special studies are being made of the data on which the classification was made, and will be published



later. The medical staff of the clinic included 122 physicians in addition to the consulting faculty. It is pointed out that the patients visiting the clinic represent a larger percentage of problem cases requiring specialist consultants than is usually the case in the free dispensary.

During the first year, 1,360 cases were referred by 824 physicians for diagnosis and then referred back for treatment. This diagnostic clinic is considered a close bond between the clinic and the medical profession.

Rejected applicants are referred either to free clinics or to private practitioners. Patients sent back to their own communities are given lists of four physicians having hospital affiliations in the community.

#### FINANCES

Exclusive of the cost of new equipment, the 113,981 visits cost \$231,875.40. The income from patients was \$179,685.09. The average visit, therefore, cost the clinic \$2.03, whereas the average income for each visit from patients was \$1.57. It is obvious that the deficit must be reduced or the fees raised if the clinic is to meet its obligations of giving patients service at cost.

These are the conclusions of the report:

"At the end of the first year of the pay clinic, it is still too soon to speak with finality. The pay clinic is a sincere effort to meet a real medical need felt by many thousands of persons in this great community. During its first year, the clinic has surpassed the expectations of the Cornell faculty, both on the medical side and in the number of patients. The one permanent essential to the success of any such enterprise is the rendering of a high quality of service. If, in addition, the clinic can contribute to medical instruction and research, can cooperate with the practicing physician, can be made self-supporting, can be so managed as to eliminate the unfavorable, so-called "charity" atmosphere commonly associated with clinics, there is a great gain. But the clinic stands or falls on the rendering of a higher grade of medical service than can otherwise be secured by patients of moderate means at any rate which they can afford."

### Book Notices

**THE PRINCIPLES OF RADIOGRAPHY.** By J. A. Crowther, M.A., Sc.D., F.Inst.P., University Lecturer in Physics Applied to Medical Radiology. Cloth. Price, \$2 net. Pp. 138, with 55 illustrations. New York: D. Van Nostrand Company, 1922.

This is an admirable exposition of the physical principles involved in roentgen-ray work. It also enters into the details of construction of the individual items of apparatus used in the production of roentgen-ray exposures. The author states that the several chapters presented are an elaboration of the lectures that he gives on this subject in medical radiology and electrology at Cambridge. The thoroughness of the text is commendable. That it represents English practice is quite evident, which, of course, is to be expected. Several points of difference from modern American procedures are noted, such as the question of spark gap measurement of potential, which the author passes over rather superficially, referring only casually to sphere gaps, and the value of the Coolidge tube, which, he states, does not produce fine shadow detail such as is obtained by the ordinary gas tube. He also gives information regarding the Coolidge tube which is not up to date, and several incorrect statements appear as to the action and behavior of this tube. American readers will find much valuable information on the gas tubes, which, however, are rapidly going into disuse on this side of the Atlantic. As a matter of fact, there are many American roentgen-ray technicians who have never seen a gas tube in action, having always used the Coolidge tube, which, under proper conditions, gives as fine shadow detail as does the gas tube. An obvious error is the legend of Figure 25, which purports to be an injury to the humerus, whereas the shadows are those of a knee, the lower end of the shaft of the femur being fractured. A glaring omission in the text on accessory apparatus is that of the Potter-Bucky diaphragm. This mov-

ing grid has become one of the most valuable items in the modern roentgen-ray laboratory, and no book on this subject can be regarded as complete which does not accord it the prominent place it deserves. No reference is made to roentgen-ray film, which is largely displacing the glass plate in all modern laboratories. Present day practice is such that a book of this kind should detail the value of the double coated film, and describe the handling, developing and other technical features of its use. The author entirely avoids the field of roentgen-ray diagnosis and interpretation of shadows, confining the work to the title subject.

**GRUNDLAGEN DER OSMOTHERAPIE.** Von. Prof. Dr. Karl Stejskal, Physikus und Primarius des Spitäles der Barmherzigen Brüder in Wien II. Mit Anhang: Zur Technik der intravenösen Injektion, von Dr. Friedrich Eckhart, Assistent der inneren Abteilung des Spitäles der Barmherzigen Brüder in Wien II. Boards. Pp. 215. Vienna: Josef Sáfár, 1922.

Stejskal has furnished us a diligent outline of what is known about "osmotherapy." Under this heading might be included all those remedial measures that act chiefly by producing osmotic changes. In the widest sense, hypotonic as well as hypertonic measures, local as well as systemic in action, would properly be classified under it. This book, however, deals chiefly with the study of the changes produced by intravenous injection of hypertonic solutions, especially of dextrose, as no other substance can be injected in such dose and concentration. The greater part of the book is occupied with an exhaustive discussion of the theoretical and experimental foundation of this procedure, which is so recent in origin that the first attempts at it date from 1884. Prior to this, hypertonic infusion was considered too dangerous to be employed in the human body. Since then a voluminous literature on the subject has become available, and the limits within which it may be safely practiced, as well as indications for it, have become elaborated. Even though the physical changes following infusion of hypertonic solutions are identical, no matter what substance is injected, the effects differ quantitatively from one another, because of specific properties of the various bodies. Thus, infusion of hypertonic saline or dextrose solution increases the coagulability of the blood, but calcium chlorid solution has a decidedly greater effect in this direction. Salt and dextrose solution are diuretic; but sodium sulphate solution is much more diuretic than these. The second, or practical, part of the book, introduced by a good chapter on the technic of intravenous injection by Friedrich Eckhart, deals with the therapeutic indications. These are classified under the headings of increase in resorption processes; influence on the circulation; diuretic action; influence on secretions; in infectious diseases; sedative effects on the nervous system; effect on lung tissue, and influence on the actions of medicaments, especially general and local anesthetics. The book furnishes a good introduction into a new and possibly rich field; and, by collecting and systematizing the work done in it, clears the way for further advance.

**EL MÉTODO OPERATORIO DE LA DERIVACIÓN Urinaria y sus Aplicaciones Terapéuticas.** Por el Dr. Pedro Cifuentes, del Hospital de la Princesa. Paper. Pp. 98, with illustrations. Madrid: Editorial "Satur-nino Calleja" S. A., 1922.

Urinary derivation is the name coined by the French for the diversion of urine when conditions require that another outlet for this product be furnished, either temporarily to permit the healing of a wound, or permanently in case of incurable injuries or organ removal. In this brief monograph, the subject is succinctly but authoritatively presented as regards history, and various technics and indications, in its chief aspects of nephrostomy, ureterostomy, permanent ureteral catheterization and ureteral transplantation. Some omissions may, however, be noted. In discussing nephrostomy, no mention is made of the possibility of secondary hemorrhages and uremic poisoning, admittedly the great disadvantage of the method. In ureterostomy, the author has overlooked Legueu and Papin's recent recommendations in favor of an opening in the inguinal region, and substitution of a glass device for the rubber catheter. Cifuentes is apparently not familiar with experimental work done in this country on ureteral transplantation through the pancreatic



duct and into the duodenum. Among the indications of cystostomy, he is apparently unacquainted with Lichtenberg's use of the method in urethral stenosis complications. The bibliography is incomplete and not up to date. A number of valuable illustrations, although several of them are not original, throw light on the text.

A TREATISE ON MATERIA MEDICA AND THERAPEUTICS, Including Pharmacy, Dispensing Pharmacology and Administration of Drugs. By the Late Rakhaladas Ghosh. Ninth edition by B. H. Deare, C.I.E., Principal and Professor of Medicine, Medical College of Bengal, and Birendra Nath Ghosh, F.R.F.P.S., Examiner in Pharmacology, University of Calcutta. Cloth. Price, 10 shillings, 6 pence, net. Pp. 712. Calcutta: Hilton & Co., 1922.

"Materia Medica," says the author, "is not an attractive subject; but it must be learned." He has therefore "endeavored to minimize the labor of the student," with what seems doubtful success. The use of small type, close spacing and thin paper makes this apparently small book really a fairly large treatise, and rather difficult to read. It is not likely to become available as a textbook in the United States, because of the exclusive use of the British Pharmacopeia as the standard. Also, characteristic of British provincialism is the exclusive use of the old system of weights and measures. For us, the most valuable portions of the book are probably those which deal with drugs employed by the Hindus. These the author discusses familiarly, and in many cases from personal experience. Information, elsewhere difficult to obtain, is given on such drugs as adhatoda, bael fruit, betel, turpeth, kaladana resin, alstonia, picrorhiza, Indian azadirach, myrobalanum and ispaghula. He also gives the Hindu synonyms for a number of drugs. The book may be recommended especially to those who wish to prepare for medical practice in East India.

ZUR BIOLOGIE DER LIPOIDE MIT BESONDERER BERÜCKSICHTIGUNG IHRER ANTIGENWIRKUNG. Von Privatdozent Dr. Hans Schmidt. Paper. Price, 60 cents. Pp. 91. Leipzig: Curt Kabitzzsch, 1922.

This monograph constitutes one section of a treatise on "Modern Biology," edited by Prof. Hans Much of "Partigen" fame. Naturally, it constitutes a piece of special pleading for his views as to the importance of lipoids as antigens, with much emphasis on the priority of Much. The text is given by the statement that "today the lipoids play in many respects an even greater rôle in immunity than protein." Evidence supporting this theme is presented; very little of the evidence to the contrary is even suggested. Little of the not inconsiderable work done outside of Mitteleuropa is considered. Nevertheless, what is presented is given well, and it is a good statement of the views of Much and his followers. It is admitted that isolated lipoids have little capacity for immunizing, but lipid-protein compounds that occur in nature are believed to be highly antigenic, and the assumption is that the chief function of the proteins is to secure the necessary dispersion of the lipoidal particles to which their antigenic capacity is attributed.

LA URETEROPIELOGRAFÍA Y SU IMPORTANCIA CLÍNICA. Por el Dr. Eduardo Ibarra Loring. Jefe de la Clínica de Vías Urinarias de la Universidad de Chile. Paper. Pp. 123, with 52 illustrations. Santiago, Chile: Imp. y Lit. "La Ilustración," 1921.

The author is chief physician at the urologic clinics of the University of Chile and the Salvador Hospital, the most important in Chile. His book is the thesis submitted when he applied for the position of supernumerary professor of urology at the university. It is divided into two parts, the first dealing with the development of pyelography, technic, objections and the normal anatomy of the pelvis and the ureter. The second concerns itself with pelvic, urcteral and renal anomalies and changes which may be shown by pyelograms. The author insists that many objections to pyelography may be obviated with care on the part of the operator. Dr. Ibarra shows knowledge and sense in his discussion of the various points involved, and is not averse to stating how and why he came to his conclusions. The book is profusely illustrated with samples of the author's work, several of which are interesting. Throughout, he used Wcld's 25 per cent. sodium bromid solution, considering it far superior to all other pyelographic mediums.

## Medicolegal

### Good Causes of Action Against Physicians

(*Griffin v. Bles et al. (N. Y.), 195 N. Y. Supp. 654*)

The Supreme Court of New York, Appellate Division, Third Department, says that one Pearl Griffin was operated on at a hospital and died on the fourth day thereafter. The plaintiff was administratrix of her estate. The defendants were physicians. One of them was the proprietor of and conducted the hospital; another performed the operation, and a third was a consultant. The plaintiff's complaint alleged three causes of action: (1) fraud and deceit, consisting of misrepresentation and concealment of conditions, made and practiced to induce the patient to consent to the operation suggested, by which she was assured of its simplicity and the relief it would accomplish; (2) the operation performed was not the operation suggested to the patient, but was more complicated and dangerous, and was not, therefore, consented to by her, and it amounted to an assault on her; (3) malpractice, which was not questioned. Motions were made to strike from the complaint the first and second causes of action, on the ground that they did not state facts sufficient to constitute a cause of action, it being contended that they did not survive the patient and that an action could not be based thereon. But the court holds otherwise, under the decedent estate law of New York, and affirms an order denying the motions to dismiss the first and second causes of action. The court thinks that the fact that the patient could have maintained an action, if she had lived, on either the first or second cause of action, and death having resulted in connection with the acts complained of, as shown by the allegations, the decision of the lower court was correct. But one judgment for damage could be obtained in this action under any pleading, and allegations setting up the criticized causes of action were necessary to that end.

### Mandamus Case of Physician Expelled from Society

(*State ex rel. Hyde v. Jackson County Medical Society (Mo.), 243 S. W. R. 341*)

The Supreme Court of Missouri, Division No. 1, says that this was a proceeding in mandamus seeking to compel the society to rescind its action in expelling the relator from membership in the society and to restore his name on the roll of members. It appeared that there was a medical library club made up of members of the medical society, and that the relator made application for membership in the club, but his application was refused. He then wrote a letter to one of the members of the club, which he requested to be transmitted to the club. In the letter, he made references to members of the club, and used some obscene expressions. On account of the letter, the medical society instituted proceedings to expel him from the society, but lacked one of the requisite three-fourths majority of votes. The society took an appeal to the state medical society, which directed the county society to expel him. It was unanimously done. These proceedings were then instituted. The circuit court of the county denied the relator a writ of mandamus. He appealed to the Kansas City Court of Appeals, a majority opinion of which reversed the judgment of the circuit court; but one of the justices of the court of appeals wrote a dissenting opinion, which, except as to one paragraph, is adopted by the supreme court in affirming the judgment of the circuit court, the case having been certified to the supreme court for final determination.

In the adopted opinion it is said that, in considering the expediency of the writ of mandamus, the primary question is by no means confined to what the respondent has done to the complaining relator. It may well be said that a thing of equal importance is to ascertain what has been his conduct, as it relates to the matter in controversy. Mandamus, in its exceptional traits, partakes, in some respects, of the nature of equity, in which forum it is a maxim that he who applies for relief by this writ must come with "clean hands," else the law, regardless of merits, will decline to interfere



in his behalf. Yet, unless his misconduct connects with the matter in controversy, he is not to have his prayer denied. But when, as in this case, the misconduct consists in writing an obscene letter referring to, connecting with, and indeed, wholly made up of, the identical matter in controversy, there is no dissent from the proposition that he shall not have relief by mandamus.

Another reason why the writ should be refused was that the relator had not that severable, proprietary interest in the respondent society which was a necessary requisite to his right to relief. It was alleged that the society owned a piece of real estate worth \$12,000 and that he paid his dues. But that did not show a right in him sufficient to ground an application for a writ of mandamus. A member of a voluntary association, such as the one before the court, not organized for profit, with no severable, pecuniary interest in the property which it possesses merely as an incident to its existence, has no such pecuniary property right as will justify the extraordinary remedy by mandamus. Otherwise, the court, through that writ, would be called on to test the expulsion of members of churches or social associations. The membership of such associations may change, but it has not been thought that they, their creditors or their heirs, as the case may be, have any interest in the property of the society.

In the majority opinion, it was said: "The evidence shows that membership in the respondent corporation was valuable to the relator in a professional and business way and that the relator has been deprived of his corporate rights, which we think is a pecuniary right as that term is used in the cases." But, scrutinizing the authorities cited, the supreme court finds that *State ex rel. v. Georgia Medical Society*, 38 Ga. 608, 611, 626, was the only case which confirmed the proposition enunciated, while, as pointed out in the minority opinion, that case fails to follow the better considered rule that the property right which is violated must be a severable, proprietary right.

#### Failure of Action Against Automobilist for Fees

(*Sheehy v. Nordyke (Ia.)*, 188 N. W. R. 882)

The Supreme Court of Iowa says that a boy was injured by an automobile driven by the defendant. The plaintiff was the police surgeon of the city in which the accident occurred, and met the defendant and the injured boy at one of the local hospitals. It was the claim of the plaintiff that the defendant requested and employed the plaintiff to give the boy the necessary medical aid and assistance, saying that he "would take care of the expense in the case"; that the plaintiff gave the necessary medical assistance to the boy; that he charged the fee to the defendant, and that, by reason of the medical service rendered, the defendant was indebted to him in the sum of \$250, which was the reasonable value of the service. The defendant denied every material allegation in the plaintiff's petition, except that the plaintiff was a qualified physician and surgeon. He also pleaded that the injured boy subsequently to his recovery instituted suit against him, and recovered damages for the injuries received, the judgment including the reasonable value of the medical services performed by the plaintiff. The jury found a verdict for the defendant, and a judgment for costs was entered thereon; which is affirmed.

Evidence, the supreme court goes on to state, was introduced to sustain the allegation of the defendant's answer with respect to the suit for damages; but the trial court, by instruction, removed this defense from the consideration of the jury, and it was instructed to disregard said evidence. It must be presumed that the jury obeyed the admonition of the court.

It was the primary contention of the plaintiff that no fact question was presented by the evidence, and that he was entitled to a directed verdict in the amount stated in his petition. True, he introduced evidence tending to prove that the professional services alleged in his petition were rendered by him, and that the reasonable value thereof was \$250. He, however, did not move the court for a directed verdict at any stage of the proceeding, but, after the verdict was returned, finding for the defendant, he filed his motion for judgment, notwithstanding the verdict. There was no defect

in the pleadings of the party in whose favor the verdict was returned. The serious claim made by the plaintiff was that the testimony was insufficient to support the verdict; but this question was properly raised on a motion for a new trial, which, as indicated, was not made.

It was clear under the pleadings and the record that a fact question existed for the jury to determine. The reasonable value of the medical services, although unchallenged and undisputed by the evidence, presented a jury question. Neither court nor jury was bound by witness' estimate as to values.

Again, whether or not the plaintiff was the owner of the claim in suit presented a fact question. Another physician, one of the plaintiff's witnesses, testified: "If the bill is paid, I receive a certain amount of it. I am interested in receiving a certain amount from the bill." This showed that it was at least a joint account of the plaintiff and his associate.

The case was properly submitted under correct instructions. The credibility of the witnesses was a matter for the jury. It is quite evident that the jury did not believe that the material allegations of the plaintiff's petition were sustained by a fair preponderance of the evidence. This court can easily understand the disappointment to both the client and his counsel in the outcome of this case, but it finds no legal reason for disturbing the verdict.

#### Previous Condition of Injured Employee Unimportant

(*Springfield District Coal Mining Co. v. Industrial Commission et al. (Ill.)*, 135 N. E. R. 792)

The Supreme Court of Illinois reverses a judgment which affirmed an award of the industrial commission, under the workmen's compensation act, in favor of a miner, of a certain sum per week for 359 weeks and thereafter a pension of \$23.33 a month for life, for injury alleged to have been caused by his having been subjected to bad air in the mine on a certain date. There was evidence that he had been previously affected with miner's asthma, and, according to the court, the most that could be said from the record was that the bad air to which he testified he was subjected in the mine on the date in question might have aggravated his preexisting physical condition, so as to entitle him to compensation for a temporary disability. The evidence furnished no basis for finding to what extent the bad air contributed to the man's incapacity or the relative proportions which the preexisting disease and bad air contributed to the cause of his physical incapacity. The possibility of the bad air being the cause of his condition at the time of the finding was not sufficient to justify such a finding as was made.

Under the decisions, whatever the preexisting physical condition of the applicant for compensation may be, if an accident or condition of the employment is the immediate occasion of the injury, it will be held that the injury arose out of the employment, because it develops within it; that when the exertion or condition of the employment acts on the weakened condition of the employee or on an employee predisposed to suffer injury, in such a way that a personal injury results, the injury must be said to arise out of the employment, if the preexisting condition is accelerated in a material degree by the accident or condition. It has long been held that an employee is entitled, under the workmen's compensation act, to be compensated for every accidental injury in the course of his employment and arising out of the same; that the measure and limit of his right is that the injury sustained is the proximate cause of the incapacity for which compensation is sought; that the previous physical condition of the employee is unimportant, and he may recover for permanent incapacity which results from an accident independently of preexisting disease, but is not entitled to compensation for a condition resulting from a preexisting disease, and not from an injury suffered in the course of the employment and arising out of it; that, if there is a preexisting disease, the employee is entitled to recover for all the consequences attributable to the injury by the acceleration or aggravation of the disease, and that the aggravation or acceleration, permanent and progressive in its nature, would entitle the employee to compensation to the extent and in the proportion in which the preexisting disease is increased.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Obstetrics and Gynecology, St. Louis

December, 1922, 4, No. 6

- \*Test of Labor in Relation to Cesarean Section. Comparative Results Obtained by Elective and Secondary Operations Based on Personal Experience of Ninety-Two Cases. R. W. Holmes and A. L. Burdick, Chicago.—p. 579.
- \*Pregnancy in Tuberculosis. C. C. Norris, Philadelphia, and D. P. Murphy, Rutherfordton, N. C.—p. 597.
- \*Further Experience with Pituitary Extract in Induction of Labor. B. P. Watson, Toronto.—p. 603.
- \*Action of Ergot and Solution of Hypophysis on Uterus. C. C. Haskell and M. P. Rucker, Richmond, Va.—p. 608.
- Intra-Uterine Rupture of Velamentous Umbilical Cord. G. W. Kosmak, New York.—p. 619.
- \*Interference Justifiable After Twenty-Four Hours of Labor When No Other Indication is Present. A. C. Beck, Brooklyn.—p. 623.
- Rubin Test and Its Therapeutic Application. J. C. Hirst and C. Mazer, Philadelphia.—p. 628.
- \*Improved Method of Supporting Bladder and Vagina After Vaginal Hysterectomy for Procidentia. A. Heineberg, Philadelphia.—p. 634.
- \*Postabortal Hemolytic Streptococcemia. P. F. Williams, Philadelphia.—p. 636.
- Is Usual Method of Preparing Patients for Delivery Beneficial or Necessary? R. A. Johnston and R. S. Sidall, Baltimore.—p. 645.
- \*Does Ovum or Corpus Luteum Control Ovarian and Uterine Cycle? H. Schiller, Chicago.—p. 651.

**Test of Labor in Relation to Cesarean Section.**—A few of the points emphasized by Holmes and Burdick are: Cesarean section is far more dangerous for the woman than spontaneous labor—even an operative delivery of some difficulty. The sum total of discomfort, distress, malaise associated with cesarean section is as great or greater than the inconveniences and pain of labor; one certainly offsets the other. These facts, joined to the increased mortality demand that sections shall be done only for clear indications.

**Pregnancy in Tuberculosis.**—This paper is based on a study made by Norris and Murphy of 166 cases. The combination of pregnancy and pulmonary tuberculosis is a common one. Pulmonary tuberculosis exerts little or no influence against conception. Pulmonary tuberculosis exerts but little influence on the course of pregnancy, and except in the advanced stages exerts little or no influence toward causing abortion, miscarriage, or premature labor. From 20 to 30 per cent. of mild, quiescent cases of pulmonary tuberculosis and from 70 to 90 per cent. of more advanced cases exhibit exacerbations during pregnancy or the puerperium. Marriage is worse for the tuberculous woman than for the tuberculous man owing to the dangers incident to pregnancy. Unless the pulmonary lesions have been quiescent for a moderately prolonged period, tuberculous women should not marry. Tuberculous women should not become pregnant unless the disease is in the first stage, and has been quiescent for a minimum period of two years. Prior to the fifth month of pregnancy, the uterus should be emptied if the disease manifests any evidence of becoming active. After the fifth month of pregnancy, it is generally advisable to treat these patients expectantly. Infants should not nurse from tuberculous mothers, and should be especially guarded from infection. Hygienic and dietary treatment should be employed at all times. In the great majority of cases the tuberculosis precedes the pregnancy.

**Use of Pituitary Extract in Induction of Labor.**—In the 195 cases of induction of labor reviewed by Watson in which pituitary extract was used as the inducing agent, 90 per cent. were successful. The maternal mortality was nil. There were no cases of laceration of the cervix and no greater proportion of pelvic floor lacerations than in ordinary labor. There were two cases of retained placenta and two cases of rather severe hemorrhage accompanied by shock following the birth of the placenta. Both the latter women were primiparas over 39 years of age. There were twelve fetal deaths, giving a fetal death rate of just over 6 per cent. Three of these children were monsters. Two died in utero apparently

from placental infarction due to pregnancy toxemia. Three died of cerebral hemorrhage, two died of atelectasis within three days of birth and in two a necropsy could not be obtained to ascertain the cause of death.

**Action of Ergot and Hypophysis Solution on Uterus.**—It can readily be demonstrated by animal experimentation, Haskell and Rucker assert, that the action of ergot and hypophysis solution on the uterus are the same if large enough doses of ergot are used. The action of pituitary preparations is much more powerful than that of ergot. This is readily shown both by experiments on animals and by accurate observations on human beings. The action of both drugs varies greatly with different persons. This is a common clinical experience and is abundantly substantiated by laboratory experiments.

**When to Interfere in Prolonged Labor.**—Beck advocates conservation in these cases. As soon as the membranes rupture, if the cervix is fully or almost fully dilated, a snug abdominal binder is adjusted and the voluntary efforts are encouraged. It aims to conserve the patient's strength for the second stage. The only additional measure employed by Beck in a prolonged labor is the use of liberal doses of morphin. Whenever the character of the contractions shows that the uterus is fatigued, sufficient morphin is given to stop the labor and allow the patient to sleep. Maternal exhaustion seldom occurred when these long labors were handled in this manner and aside from the anxiety experienced by the attending obstetrician very little added difficulty was observed.

**Supporting Bladder and Vagina After Vaginal Hysterectomy.**—Heineberg removes the uterus in the usual manner. The broad ligaments are ligated close to the uterus. The uppermost ligature should include the uterine end of the tube and round ligament. If the tubes and ovaries are removed, the infundibulopelvic ligament should be drawn over and its inner end be included in the ligature applied to the uterine end of the round ligament. The upper stumps of the broad ligament thus formed are brought across the median line of the pelvis so that the stump of the left ligament may be sutured to the cut edge of the right vaginal wall and, vice versa, that of the right ligament to the left vaginal wall. The stumps are not brought into the vagina but are inserted into a pocket, external to the upper end of each lateral vaginal wall. The advantages claimed for this crossing of the broad ligaments and attaching each to the vaginal wall of the opposite side are: (a) to form a shelf for the bladder; (b) to close the opening in the vagina by means of the oblique traction on its walls; (c) to prevent dilatation of the vaginal vault and consequent lessening of the support to the base of the bladder.

**Postabortal Hemolytic Streptococcemia.**—Four cases of postabortal bacteremia, hemolytic streptococcic, with recovery under the use of polyvalent antistreptococcic serum, are recorded by Williams.

**Control of Ovarian and Uterine Cycle.**—Schiller asserts that corpus luteum extract, as on the market, produces hypertrophy and hyperemia of the uterus and tubes, but only in the presence of ovaries. Theoretically, its greatest therapeutic result ought to be expected in menorrhagia, metrorrhagia and hypoplasia.

#### American Journal of Physiology, Baltimore

December, 1922, 63, No. 1

- \*Relation of Blood Volume to Tissue Nutrition. IV. Effect of Hemorrhage and Subsequent Intravenous Injection of Gum-Saline Solution on Response of Anesthetized Dog to Alternate Administration of Room Air and of Mixture of Carbon Dioxid in Room Air. R. Gesell, C. S. Capp and F. Foote, Berkeley, Calif.—p. 1.
- Id. V. Effect of Changes in Blood Volume Elicited by Hemorrhage and Intravenous Injection of Gum-Saline Solution on Total Oxygen Consumption of Anesthetized Dog. R. Gesell, F. Foote and C. S. Capp, Berkeley, Calif.—p. 32.
- Studies of Exophthalmic Goiter and Involuntary Nervous System. IV. Vascular Response of Pithed Cat to Single Intravenous Injections of Epinephrin. C. C. Lieb and H. T. Hyman, New York.—p. 60.
- Id. V. Vascular Responses of Pithed Cat to Repeated Intravenous Injections of Equal Doses of Epinephrin. C. C. Lieb and H. T. Hyman, New York.—p. 68.



- Id. VI. Attempts to Alter Vascular Response of Pithed Cat to Repeated Injections of Similar Doses of Epinephrin. C. C. Lieb and H. T. Hyman, New York.—p. 83.
- Id. VII. Mechanism of Sensitization to Subcutaneous Injections of Epinephrin. C. C. Lieb and H. T. Hyman, New York.—p. 88.
- \*Measurements of Pulse Wave Velocity. H. C. Bazett and N. B. Dreyer, Philadelphia.—p. 94.
- Cytolysis and Protoplasmic Structure. I. Resistance Reversal Phenomena in Saponin Hypotonic Cytolysis. I. H. Page and G. H. A. Clowes, Woods Hole, Mass.—p. 117.
- \*Influence of Various Stimuli on Human Saliva. J. R. McClelland, New Haven, Conn.—p. 127.
- Influence of Water Deprivation on Changes in Blood Concentration Induced by Experimental Shock. F. P. Underhill and R. Kapsinow, New Haven, Conn.—p. 142.
- Influence of Pituitary Extracts on Absorption of Water from Small Intestine. II. Action of Pituitary Extracts When Introduced into Alimentary Canal. M. H. Rees, Boulder, Colo.—p. 146.
- \*Studies of Thyroid Apparatus. VIII. On Alleged Exogenous Source of Poisons Giving Rise to Tetania Parathyreopriva. F. S. Hammett, Philadelphia.—p. 151.
- Effects on Circulation and Respiration of an Increase in Carbon Dioxid Content of Blood in Man. E. C. Schneider and D. Truesdell, Mitchel Field, L. I., N. Y.—p. 155.

**Effect of Hemorrhage on Pulmonary Ventilation.**—The results of nine experiments are reported by Gesell et al. They found that the pulmonary ventilation during the administration of carbon dioxid was greater after hemorrhage than during the administration of the same mixture before hemorrhage. The effects of hemorrhage on pulmonary ventilation during the administration of room air varied considerably. In some instances a large hemorrhage had little or no effect on the pulmonary ventilation of room air and in other instances a small hemorrhage markedly increased the ventilation. Injection of gum-saline solution subsequent to hemorrhage decreased the respiratory response to the administration of the carbon dioxid mixture. In those instances in which hemorrhage increased the pulmonary ventilation of room air, the injection of gum-saline solution decreased this ventilation. The changes in the respiratory response elicited by hemorrhage and injection varied with the extent of the changes in blood volume. Hemorrhage and injection which elicited the usual respiratory responses not infrequently were accompanied by no or small alterations in the mean blood pressure.

**Measurements of Pulse Wave Velocity.**—Measurements of pulse wave velocity made by Bazett and Dreyer showed that the velocity of transmission of the pulse wave is much slower in the large vessels than in the smaller and more peripheral vessels. While a velocity of the pulse wave of about 7 meters a second is confirmed from a comparison of carotid and radial pulses, such a velocity is merely an average between a velocity of about 4 meters a second in the brachial and 8.5 meters a second or more between the elbow and wrist. The velocity of transmission in the carotid, aorta and possibly the femoral artery is of about the same rate as that found for the brachial artery. The rate of transmission is much more variable in the more peripheral parts of the arterial system and is, in all probability, much more dependent on local conditions of vasoconstriction or dilatation.

**Influence of Stimuli on Saliva.**—McClelland states that human saliva varies in hydrogen-ion concentration, amylolytic index, alkaline and acid reserves, buffer index and mucin content both with different subjects and with the same subject at different times. Therefore, no general conclusion can be drawn as to the response of saliva to any stimulant.

**Endogenous Poisons Cause Tetania Parathyreopriva.**—Hammett asserts that his studies yield evidence justifying the conclusion that endogenous metabolism, particularly the catabolic phase, is a source of the poisons giving rise to tetania parathyreopriva, and that the statement of Luckhardt and Rosenbloom that "the source of the poisons responsible for tetany is of exogenous origin (particularly the meat of the diet)," fails to express the actual state of affairs.

### Annals of Surgery, Philadelphia

December, 1922, 76, No. 6

- \*Treatment of Acute and Chronic, Simple, Traumatic Synovitis (Hemarthroses and Hyarthroses) by Repeated Aspirations and Immediate, Active Mobilizations without Splinting. C. A. McWilliams, New York.—p. 677.
- \*Metastasizing Malignant Tumor of Thyroid. F. L. Meleney, Peking, China.—p. 684.

- \*Suppurative Osteomyelitis Due to Colon Bacillus. N. Winslow, Baltimore.—p. 695.
- Treatment of Chronic Empyema Where Recognized Surgical Procedures Have Failed to Produce Obliteration. W. L. Keller, Washington, D. C.—p. 700.
- Chronic Catarrhal Cholecystitis with Lipoid Deposit. J. R. Corkery, Spokane, Wash.—p. 736.
- \*Aseptic Resection of Intestine. F. K. Collins, Los Angeles.—p. 739.
- \*Id. C. F. Horine, Baltimore, Md.—p. 745.
- \*Involvement of Lymph Nodes in Carcinoma of Rectum. J. R. McVay, Rochester, Minn.—p. 755.
- \*Solid Carcinoma of Ovary. M. R. Hoon, Rochester, Minn.—p. 768.
- Double Lip: Surgical Removal. G. M. Dorrance, Philadelphia.—p. 776.
- Submaxillary Salivary Calculus: Report of Two Cases. B. F. Buzby, Philadelphia.—p. 778.

**Treatment of Traumatic Synovitis.**—Repeated aspirations combined with active (never passive) motions, and walking without splints, in McWilliams' opinion afford the best method of treatment of acute and chronic, traumatic, joint synovitis, provided there be no joint mouse nor a dislocated meniscus present. He advocates immediate aspiration in all types of traumatic joint effusions as it relieves pain immediately, renders a correct diagnosis more certain, prevents stretching of the ligaments with their consequent weakening, and avoids subsequent muscular atrophy. Such treatment makes unnecessary all other subsequent physiotherapeutic measures, hence its simplicity makes it applicable to all classes of patients. It produces a more perfect cure in one half of the time that is required by the old immobilization method. To leave fluid in a knee (the result of trauma) is just as irrational as to leave fluid in a chest. Aspiration of the knee is a more simple and less dangerous procedure than aspiration of the chest. It can be performed in a doctor's office or in a dispensary, and the patient can be sent home walking immediately thereafter. The effects of physiotherapeutic measures have been overestimated, being used empirically and without foundation. They are makeshifts to excuse procrastination in not applying a radical, curative procedure, such as aspiration.

**Metastasizing Tumor of the Thyroid.**—Meleney records a case of carcinoma of the thyroid with metastases in the cervical lymph glands. This case is interesting in that the patient was only 17 and the tumor had existed for six years.

**Suppurative Osteomyelitis Caused by Colon Bacillus.**—Winslow reports a case of osteomyelitis due to an organism which has been but seldom isolated either in pure or mixed culture from the pus of bone abscess. Bacteriologic studies of pus obtained from the abscess showed exclusively the colon bacillus. Though no animal inoculations were made, the organism had all of the cultural and morphologic characteristics of *B. coli*. Whether the bone infection had any connection with an attack of typhoid twenty years previously or not is open to doubt, but the association of the colon bacillus with an osteomyelitis is of clinical interest.

**Aseptic Resection of Intestine.**—The success of Collins' operation depends on the proper application of a looped ligature, a single slip knot, of strong linen or silk, holding the ends of the intestine until such a moment as the end to end anastomosis is completed, when by a gentle pull this looped ligature is removed, fully opening the lumen of the intestine. It is said that the method can be applied to any portion of the intestinal tract except the lower rectum, and permit of the removal of any number of inches or feet. No handling of the remaining intestine, through its lumen or externally, is required. All of the advantages of an end to end anastomosis are gotten without contamination.

**Aseptic Resection of Intestine.**—Horine also describes a method of blind end to end anastomosis with the release of a purse string suture after the anastomosis is completed.

**Involvement of Lymph Nodes in Cancer of Rectum.**—One hundred specimens were studied by McVay. From these specimens 623 glands were obtained. Fifty-three per cent. of the specimens did not show glandular involvement; 30 per cent. showed slight glandular involvement, and 17 per cent. showed marked glandular involvement.

**Solid Carcinoma of Ovary.**—Thirty-seven cases of solid carcinoma and two cases of solid sarcoma of the ovaries were found in the examination of malignant tumors of the ovary at the Mayo Clinic between Jan. 1, 1910, and Aug. 1,



1921. These tumors were solid throughout or contained only relatively small cysts, due to degeneration and necrosis or retention. During this time 4,175 tumors of the ovary were removed. Thus, solid malignant tumors comprise 0.93 per cent. of all ovarian tumors. During the same period 540 malignant ovarian tumors were removed; of these 0.086 per cent. were solid. In 66 per cent. of the cases the tumor was unilateral. The general history is similar to that of ovarian fibroma with the additional symptoms of malignancy, loss of weight, strength and appetite, and secondary anemia. The growth of the tumor is usually rapid. Ascites cannot be considered a criterion of malignancy, as it was present in 35 per cent. of the solid carcinomas and in 25 per cent. of the benign fibromas. The treatment of solid carcinoma of the ovary is surgical removal followed by the use of the roentgen ray and radium, if total removal of malignant tissue is impossible. Metastasis and local recurrence indicate a hopeless prognosis, but palliative treatment may be given by radium and the roentgen ray.

### Boston Medical and Surgical Journal

Jan. 4, 1923, 188, No. 1

Progress of Mouth Hygiene Movement. W. R. Woodbury, Rochester, N. Y.—p. 1.

\*Nutrition and Growth in Children. W. R. P. Emerson, Boston.—p. 8.

\*Osteomalacia: Etiology and Report of Case Occurring in an Imbecile with Psychosis. N. A. Dayton, Wrentham, Mass.—p. 10.

Case of Subcutaneous Emphysema Due to Pneumatic Rupture of Rectum. P. J. Finnegan, Salem, Mass.—p. 15.

\*Cesarean Section in Presence of Double Pneumonia. Report of Case. W. C. Seelye, Worcester, Mass.—p. 16.

**Nutrition and Growth in Children.**—The forces affecting the child's health, which in Emerson's opinion must be coordinated to insure success, are: the home; the school and other agencies; medical care; and the child's own interest. The program, in summary consists of (1) weighing and measuring as a means of identification; (2) diagnosis based on complete physical growth, mental and social examinations; (3) removal of physical defects as a prerequisite for successful treatment; (4) measured feeding (forty-eight hour diet record); (5) midmorning and midafternoon lunches; (6) midmorning and midafternoon rest periods; (7) regulation of physical, mental and social activities to prevent over-fatigue (forty-eight hour list of activities); (8) nutrition classes for the treatment of malnutrition; (9) nutrition or diagnostic clinics for problem cases; average weight for height as a minimum standard of nutrition and growth.

**Osteomalacia in Imbecile with Psychosis.**—Dayton cites the case of a woman, aged 36 (mental age about 7) who always had been peculiar and who had to be cared for throughout her life "like a child of 3." She attended school until 10 years of age, but made no progress. The psychosis was gradual in onset, dating from several months before admission, but a notable point was the rapidity of mental and physical deterioration from the onset of the psychosis. During her stay of about seven years in the institution, twenty-nine casualty reports were recorded. Twenty-two of these were minor injuries, the result of falls without apparent cause. That is, the patient fell because of inability to manage the lower extremities rather than from an impediment. Gross changes in the bony skeleton were noted, and a fracture of the left tibia and fibula confined the patient to bed. The patient died soon afterward. A necropsy was held and the findings are reported by Dayton. The bone changes were those of osteomalacia. The ovaries were interesting. They were considered as fibrotic ovaries with degenerated follicles, refuting the theory that osteomalacia is due to hyperactivity of the ovaries.

**Cesarean Section in Case of Double Pneumonia.**—When Seelye's patient was admitted to the hospital she was at full term of her third pregnancy and already a few hours in labor. She was acutely ill with double pneumonia of the influenza epidemic type. It was evident from her condition on admission, together with her previous history, that she could not survive normal labor. The baby was large, with overriding at the symphysis. The choice, therefore, lay between a rapid destructive delivery, and cesarean section. The latter course was considered the quicker and to give

less shock. It was decided to operate entirely under local anesthesia, 0.12 per cent. cocain. The operation was performed without any difficulty or delay, but the baby was dead on delivery. It was evident from its condition that it had been dead in utero for about twenty-four hours, and that death was probably due to the profound toxemia of the mother. The patient made a complete recovery after a convalescence lasting several months.

### Georgia Medical Association Journal, Atlanta

December, 1922, 11, No. 12

Present Status of Surgery and Hospitals in South Georgia. A. D. Little, Thomasville.—p. 471.

Lord Lister and His Priceless Gift to Man. J. A. Hunnicutt, Jr., Athens.—p. 473.

Blood Pressure; Case Reports. J. W. Simmons, Brunswick.—p. 475.

Focal Infection; Report of Cases. C. Thompson, Millen.—p. 479.

Principles Underlying Management of Osteomyelitis. M. Harbin, Rome.—p. 484.

### Iowa State Medical Society Journal, Des Moines

December, 1922, 12, No. 11

Injuries to Spine Not Involving Cord. O. J. Fay, Des Moines.—p. 481.

Vertebral Fractures with Cord Involvement. J. W. Martin, Des Moines.—p. 184.

Tumors of Breast from Standpoint of General Practitioner and General Surgeon. A. D. Bevan, Chicago.—p. 489.

Program of American College of Surgeons. F. Martin, Chicago.—p. 496.

Ethics in Fractures. F. A. Hennessey, Calmar.—p. 498.

Mistakes in Treatment of Fractures. H. L. Beye, Iowa City.—p. 500.

Laboratory Practice of Medicine. H. E. Robertson, Rochester, Minn.—p. 503.

### Journal of Experimental Medicine, Baltimore

December, 1922, 36, No. 6

\*Studies on Endothelial Reactions. VI. Endothelial Response in Experimental Tuberculous Meningo-encephalitis. N. C. Foot, Boston.—p. 607.

\*Spirocheta Eurygyrata. M. J. Hogue, Baltimore.—p. 617.

\*Insusceptibility to Sensitization and Anaphylactic Shock. W. T. Longcope, New York.—p. 627.

Leukocytic Secretions. A. Carrel and A. H. Ebeling, New York.—p. 645.

\*Loss of Circulating Erythrocytes in Certain Types of Experimental Pneumonia. C. D. Leake and T. K. Brown, Madison, Wis.—p. 661.

Supravital Staining of Vaccine Bodies. E. V. Cowdry, New York.—p. 667.

\*Experimental Studies of Nasopharyngeal Secretions from Influenza Patients. X. Immunizing Effects in Rabbits of Subcutaneous Injections of Killed Cultures of Bacterium Pneumointes. P. K. Olitsky and F. L. Gates, New York.—p. 685.

Studies on Disease of Guinea-Pigs Due to Bacillus Abortus. W. A. Hagan, Princeton, N. J.—p. 697.

Value of Heat Killed Cultures for Prevention of Bacillus Abortus Inoculation Disease of Guinea-Pigs. W. A. Hagan, Princeton, N. J.—p. 711.

Susceptibility of Mice and Rats to Infection with Bacillus Abortus. W. A. Hagan, Princeton, N. J.—p. 727.

\*Action of Sodium Salicylate on Formation of Immune Bodies. H. F. Swift, New York.—p. 735.

**Endothelial Response in Experimental Tuberculous Meningo-Encephalitis.**—Foot asserts that experimental cerebral and meningeal tubercles in the rabbit are formed from cells of endothelial origin. These cells are derived apparently from other sources than the neighboring capillary endothelium alone. The circulating macrophages, which, in this case, are capable of multiplying by mitosis while still free in the blood, are drawn on in the formation of the cerebral tubercle. Splenectomy has not materially decreased the available supply of circulating macrophages in this experiment. While these cells may originate in the endothelium of the liver and bone marrow, the lung appears to play a much more important rôle in this respect than has been hitherto suspected.

**Diarrhea Caused by Spirochaeta Eurygyrata.**—The patient from whom Hogue obtained the material containing *Spirochaeta eurygyrata* was a woman who had been suffering with chronic diarrhea for thirteen years. All attempts to control it failed. There was a triple infection of *Chilomastix mesnili*, *Trichomonas hominis*, and *Spirochaeta eurygyrata*. Pure strains of *Spirochaeta eurygyrata* were isolated and cultivated. They lived longest in a medium which was made up of sodium chlorid and pig serum water. They stained readily with iron-hematoxylin, Giemsa's stain, Cross' stain and carbol-fuchsin. They did not stain with the vital dyes used. Cats were fed cultures of *Spirochaeta eurygyrata* but did not become infected with them.



**Insusceptibility to Sensitization.**—Attempts to produce anaphylactic shock in white rats by second intravenous or subdural injections of horse serum failed. It was impossible to demonstrate either by skin reactions or by the uterine reaction that white rats can be sensitized to horse serum. It was not possible to sensitize guinea-pigs passively with the serum of white rats presumably immunized to horse serum. In spite of the fact that the white rat could not be made anaphylactic to horse serum, the tissue of the animal reacted with the horse serum to form precipitins in fair concentration and the antigen disappeared from the circulation soon after the precipitins reached their greatest concentration in the blood. These experiments would indicate that in the white rat anaphylaxis and precipitin formation are independent and represent different types of immunologic processes.

**Erythrocytes in Experimental Pneumonia.**—Erythrocyte counts, blood volume, hemoglobin and hematocrit determinations on a series of dogs suffering from experimental pneumonia induced by the tracheal insufflation of *Bacillus bronchisepticus* and *Bacillus mucosus-capsulatus* indicate that in this condition there is an actual loss of circulating erythrocytes, without compensatory regeneration. Postmortem examination of the organs of these animals revealed red cells in various stages of degeneration in the capillaries and tissue spaces of the lungs, liver, spleen and intestinal walls.

**Experimental Studies with Bacterium Pneumosintes.**—A series of rabbits was subcutaneously injected by Olitsky and Gates with three measured doses of killed cultures of two strains of *Bacterium pneumosintes* derived from the nasopharyngeal secretions of influenza patients. These rabbits were subsequently tested for the development of serum antibodies and for the presence of an induced immunity to the living organisms. The serum of eleven of fifteen rabbits, tested from ten to twenty-seven days after the final subcutaneous injection, specifically agglutinated *B. pneumosintes*, whereas normal rabbit serum did not. Nineteen vaccinated rabbits were subjected to protection experiments. Two of them were unaffected by an intratracheal injection of *B. pneumosintes*, contained in the lung tissues of previously infected animals, in a dose which typically affected the control rabbits. Fifteen of the other seventeen proved to be completely resistant when tested by intratracheal injections of *B. pneumosintes* cultures that produced typical infections in the controls. Ten of these fifteen rabbits were injected intravenously with living cultures of pneumococcus, *Streptococcus hemolyticus*, or *Bacillus pfeifferi* in doses which were noninfective under normal conditions, but infective, as experience has shown, in the presence of a primary lesion caused by *B. pneumosintes*. In none of these animals did infection develop. The two remaining rabbits of the seventeen were not protected against *B. pneumosintes* by the vaccination, and they further developed a secondary pulmonary infection with *B. pfeifferi* after its intravenous injection. Control rabbits similarly injected intratracheally with *B. pneumosintes*, and then intravenously with the pneumococcus, streptococcus, or *B. pfeifferi* in doses that had proved noninfective for normal rabbits, uniformly developed a secondary infection with these organisms. The mildness of the local reactions and the absence of general signs, following vaccination with *B. pneumosintes*, the authors assert, indicate that similar injections would be well tolerated in man. There is no evidence that the subcutaneous injection of large doses of the heat killed organisms reduces the resistance of the animal body to infections with other bacteria. In single rabbit experiments the resistance to intravenously injected pneumococci, streptococci, or *B. pfeifferi* has been found unimpaired immediately after vaccination with *B. pneumosintes*.

**Action of Sodium Salicylate on Formation of Immune Bodies.**—Rabbits treated with sodium salicylate, in daily doses of from 0.16 to 0.2 gm. per kilogram of body weight and at the same time immunized with intravenous injections of *Streptococcus viridans*, both living and in the form of vaccines, and also with washed sheep red blood cells, showed diminished complement fixing antibodies, agglutinins and hemolysins when compared with controls similarly immunized. If the antigens were treated with sodium salicylate

in vitro and subsequently injected intravenously into rabbits, the animals usually showed lower antibody curves than did rabbits that received the untreated antigen intravenously and sodium salicylate by stomach tube. Therefore, Swift is of the opinion that the beneficial effect of sodium salicylate in rheumatic fever patients probably cannot be attributed to an increased production of circulating immune bodies against the infectious agent. This is, however, no contraindication to the administration of salicylates to patients suffering from infectious diseases.

### Laryngoscope, St. Louis

December, 1922, 32, No. 12

- Hare-Lip and Cleft Palate. M. N. Federspiel, Milwaukee.—p. 909.  
Pulmonary Aspects of Tonsillectomy Under General Anesthesia. M. C. Myerson, Brooklyn.—p. 929.  
Some Physical Intranasal Conditions Favoring Involvement of Nasal Accessory Sinuses. M. Metzenbaum, Cleveland.—p. 943.  
Bronchoscopic Tack and Pin Forceps. G. Tucker, Philadelphia.—p. 948.  
Investigation of Nystagmus Arc in Case of Congenital Nystagmus. H. H. Vail, Cincinnati.—p. 952.  
Intratracheal Abscess. C. A. Campbell, Steubenville, Ohio.—p. 955.  
Tonsil Enucleator. D. H. Jones, New York.—p. 956.  
Personal Experiences of Some Details of Older Otology. J. Dundas-Grant, London.—p. 958.  
Observations After Six Years of Constant Use of Sluder Method for Tonsillectomy. E. J. Stein, Lancaster, Pa.—p. 961.  
Case of Bilateral Frontal Sinus Empyema, Subdural and Subperiosteal Abscess with Recovery. M. B. Waltz, Fort Smith, Ark.—p. 966.

### Maine Medical Association Journal, Portland

December, 1922, 13, No. 5

- Vital Statistics. C. F. Kendall, Augusta.—p. 119.  
Cross Fire in Roentgen-Ray and Radium Treatment of Malignant Disease. R. B. Jesselyn, Portland.—p. 128.

### Michigan State Medical Society Journal, Grand Rapids

January, 1923, 22, No. 1

- \*Relation of Diet to Development of Dental Caries. G. L. Bliss, Kalamazoo.—p. 1.  
Rôle of Acidified Milk in Infant Feeding. R. M. Greenthal, Milwaukee, Wis.—p. 9.  
\*Simple, Practical Method for Feeding of Infants. D. M. Cowie, Ann Arbor.—p. 10.  
Treatment of Alimentary Intoxication and Report of Cases. E. W. May, Detroit.—p. 14.  
Feeding of Infants and Children. B. R. Hoobler, Detroit.—p. 16.  
Causative Factor of Vessel Compression in Upper Urinary Obstruction. G. C. Burr, Detroit.—p. 21.  
Lethargic Encephalitis: Study of Ten Cases. S. Wilson and F. A. Weiser, Detroit.—p. 24.  
Advancement of Medicine in Detroit. J. E. Davis, Detroit.—p. 27.  
Nontuberculous Infections of Kidney. F. H. Cole, Detroit.—p. 32.  
Mental and Behavior Changes in Children Following Encephalitis. H. T. Clay, Grand Rapids.—p. 37.

**Relation of Diet to Development of Dental Caries.**—The various phases of this problem as they are presented in man and in animals, naturally and experimentally, are discussed by Bliss as proof that the various diseases to which mankind is prey are due to deficiencies in the various articles of diet. He concludes by stating that a man living on cereals, meat, potatoes and fruit is not on a balanced ration. Physicians should avoid fads, patent vitamin foods and tablets, predigested foods and extremes of all kinds. If they will apply as much ingenuity and thought to dietetics as they do to the mechanical phase of dentistry and medicine, they will cure one defect which hastens the deterioration of civilization.

**Simple Method for Feeding Infants.**—Cowie states that the normal infant requires 45 calories per pound, or 100 calories per kilogram, body weight to maintain its weight. After determining on one ounce of sugar as a constant factor, and accepting all sugars as containing 120 calories per ounce, it became a very simple problem to know how much milk was necessary for the balance of the daily food. For example, if an infant weighed 10 pounds, he would require 10 times 45, minus 120, which equals 330, or the number of calories that must come from milk. If there are 21 calories in an ounce of milk (4 per cent. milk), 330 divided by 21 equals 15½ ounces, the amount of milk necessary to balance the energy requirement. The rest of the formula is made up with water. A chart illustrates how an infant can be fed up to the end of the first year with milk, sugar and water, although in the actual handling of a case vegetables and cereals are necessary after the eighth month.



## Ohio State Medical Journal, Columbus

January, 1923, 19, No. 1

- \*Carcinoma of Colon. G. W. Crile, Cleveland.—p. 5.  
Carcinoma of Colon. J. Phillips, Cleveland.—p. 7.  
\*Treatment of Hyperemesis Gravidarum. W. D. Inglis, Columbus.—p. 11.  
Spinal Therapy in Syphilis. J. G. Marthens, Dayton.—p. 14.  
Nature and Extent of Surgical Intervention in Acute Nasal Accessory Cavity Suppuration. J. E. Brown, Columbus.—p. 16.  
Etiology and Treatment of Maxillary Sinusitis. H. V. Dutrow, Dayton.—p. 18.  
\*Protein Sensitization and Its Relationship to Focal Infection. J. J. Coons, Columbus.—p. 21.  
Contagium Vivum. R. H. Grube, Xenia.—p. 26.  
\*Physician and Tuberculosis Clinic. J. A. Frank, Columbus.—p. 29.

**Treatment of Cancer of Colon.**—Short circuiting the fecal stream to exclude the field of operation; the two stage operation; the iodoform gauze pack to prevent contamination of raw surfaces and to protect the retroperitoneal space against infection; wide resection of the cancer and use of radium and deep roentgen-ray therapy to prevent recurrences, are the leading features of the plan by which Crile and his associates have performed 389 operations on the large intestine and rectum for cancer, including a personal series of 117 operations, of which eighty-seven, including thirty-nine radical operations, have been done with only two deaths.

**Treatment of Vomiting of Pregnancy.**—Inglis places all patients with this condition in favorable hospital surroundings, and withholds food and water until vomiting has ceased for from eighteen to twenty-four hours. Stomach lavage and enemas of sodium bicarbonate solution are used as indicated, as well as rectal feeding. He states that patients improve more quickly and suffer less if they are kept in a slightly somnolent condition, so sedatives are pushed. Unless a marked improvement is apparent in a few days, Inglis dilates and packs the cervix and lower segment of the uterus with gauze and completes the termination of pregnancy the following day under light gas-oxygen anesthesia, if necessary.

**Protein Sensitization and Focal Infection.**—Coons believes it entirely rational to regard nasal infections, adenoids, infected sinuses, catarrhal conditions and infections in general as being the primary cause of such related conditions as bronchitis, asthma, hay fever, angioneurotic edema, the eczemas, urticaria and certain gastro-intestinal manifestations; or they may act secondarily by lowering the resistance of the patient to other infections. After eliminating all foci of infection, Coons believes that the rôle of protein sensitization in diagnosis reaches its maximum value and stands as the last step in the complete study of the case.

**Physician and Tuberculosis Clinic.**—Frank is chief of the bureau of tuberculosis of the Ohio State Department of Health. He gives a summary of the activities of this bureau to date. Eighteen clinics have been held, to which patients have been admitted from forty health districts. All told, 1,145 persons have been examined, of whom 324 have been found positive, 189 suspected, and 632 negative. From preliminary reports, approximately 238 persons with positive and suspected tuberculosis are being treated by their physicians. Physicians have examined about 288 contacts in families, in which there are known or suspected cases of tuberculosis. The clinics have been visited by 205 physicians and 213 county officials, members of boards of health, nurses and others interested in public health activities. Medical society meetings have been attended by 268 physicians and 273 others. The organization nurse has visited 462 physicians, 197 public officials, school superintendents and others. This work has been carried out by the chief of the bureau, one organization nurse and one clinic nurse, together with the indispensable services of the diagnosticians for the sum of \$6,100. This includes equipment, salary and traveling expenses of the department's personnel since Oct. 1, 1921, and traveling expenses of diagnosticians.

## Rhode Island Medical Journal, Providence

January, 1923, 6, No. 1

- Lung Abscess Following Tonsillectomy. F. N. Bigelow, Providence.—p. 1.  
Chronic Empyema and Its Treatment. F. V. Hussey, Providence.—p. 6.  
\*Dermatitis Medicamentosa (Mercury). H. P. B. Jordan.—p. 13.

**Mercuric Dermatitis.**—Jordan reports the case of a man who had a pustular eruption covering the body, excepting the face, back and posterior aspect of lower extremities and the feet. The chest, arms, legs and abdomen were entirely covered with a confluent pustular eruption, the eruption on the penis, scrotum, groins and axillae being of the bullous type. Two days previously the patient had applied blue ointment freely to the chest, abdomen, groin, axillae and penis, and less freely to the lower extremities, to cure pediculosis pubis. On arising the following morning he noticed an eruption which was sore to touch. It became steadily worse. The man became extremely prostrated and remained in this condition for eight days. Recovery was accompanied by profuse desquamation confined to the areas of inflammation. He was discharged well on the twenty-sixth day. The patient at no time showed any of the ordinary symptoms of mercurial poisoning.

## FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

## British Journal of Experimental Pathology, London

December, 1922, 3, No. 6

- \*New Medium for Isolation of Diphtheria Bacillus. S. R. Douglas.—p. 263.  
\*Nonspecific Desensitization. C. H. Kellaway and S. J. Cowell.—p. 268.  
\*Occurrence of Toxic Substance in Blood in Cases of Bronchial Asthma, Urticaria, Epilepsy and Migraine. W. Storm van Leeuwen and Zeydner.—p. 282.  
Application of Absorption of Agglutinin Test to Serologic Study of Pneumococci. R. R. Armstrong.—p. 287.  
Influence of Quality of Meat Used on Reaction Curve of Nutrient Medium. C. G. L. Wolf.—p. 295.  
\*Vitamin Underfeeding. W. Cramer.—p. 298.  
Laboratory Preparation of Purified Hematoxylin. A. H. Drew.—p. 307.

**Medium for Isolation of Diphtheria Bacillus.**—The medium used by Douglas consists of agar and serum, of which the antitryptic action is neutralized, together with potassium tellurite as an indicator.

**Nonspecific Desensitization.**—Kellaway and Cowell assert that the intravenous injection of normal guinea-pig serum into actively sensitive guinea-pigs causes a degree of protection against the specific antigen which is only of short duration. This loss and subsequent return of the sensitiveness of the anaphylactic animal is explained by parallel changes in the sensitiveness of the plain muscle. The changes in the sensitiveness of the plain muscle are probably due to physical changes occurring in the muscle cells. The demonstrable antibody of the serum is greatly diminished in amount very soon after the injection of serum, and is not restored till long after the sensitiveness of the plain muscle has returned to its original value. The injection of guinea-pig serum into guinea-pigs with a high titer of circulating antibody is followed by the appearance of enhanced sensitiveness of the whole animal during two periods—one shortly after the injection and a second after the restoration of the sensitiveness of the plain muscle but before the return to normal of the demonstrable circulating antibody.

**Toxic Substances in Blood in Asthma, Urticaria, Epilepsy and Migraine.**—In this study by van Leeuwen and Zeydner, blood drawn from a vein was at once mixed with alcohol, the alcoholic extract was evaporated and the residue taken up with saline solution. The effect of the extract on loops of isolated cat's intestine was tested. Normal blood extracts had no effect, but extracts made from the blood of patients suffering from asthma, urticaria, migraine and epilepsy caused contraction comparable with that produced by pilocarpin (equal to from 1 to 5 mg. pilocarpin per liter of blood). It is suggested that this toxic substance is related to the allergic disposition.

**Vitamin Underfeeding.**—Observations have been made by Cramer on a stock of rats which have been kept through many generations on a natural diet, the vitamin content of which, though restricted, is adequate to enable them to grow and breed and to prevent the occurrence of obvious ill health. A comparison of rats from these stocks with animals from a stock fed on the same diet supplemented with an abundant sup-



ply of vitamins shows that there is such a condition as "vitamin underfeeding" and that it may occur on a natural diet. Such vitamin underfeeding does not lead to any obvious ill health: the animals are in appearance normal, healthy animals. But vitamin underfeeding, especially if it has occurred in infancy, impresses itself on the organism as a lasting weakness which only manifests itself when the organism is exposed to a strain. Hence the importance of insuring an abundant supply of vitamins in the food, especially to the pregnant and lactating mother and to the growing child. The fact that vitamins have a positive, stimulating druglike action and thus act as food hormones is put forward to replace the present conception of their mode of action. These conclusions suggest that the physical make-up of a community is determined largely by the ease and regularity with which an abundant supply of vitamins is secured to the pregnant and nursing mother and to the growing child.

### Journal of Tropical Medicine and Hygiene, London

December, 1922, 25, No. 23

Case of Human Infection with *Eimeria Oxyspora*, Dobell, 1919. J. G. Thomson and A. Robertson.—p. 369.

New Genus *Alofia* of Family Linguatulidae. Anatomic Account of A. Ginae. G. Giglioli.—p. 371.

\*Case of Blackwater Fever Complicated by Retinal Hemorrhage. R. E. W. Connell.—p. 378.

**Retinal Hemorrhage Complicating Blackwater Fever.**—Connell's patient developed a severe attack of estivo-autumnal fever, during which the blood showed numerous parasites, often two in one erythrocyte. A week later he was found to have blackwater fever. On the fifth day of this illness the man complained that there was a dark spot in the center of the eye, which at 8 feet distance was found to cover a roughly circular area 6 inches in diameter. A paracentral hemorrhage was detected. The condition gradually receded and after two months the eyes were still weak and spots were seen at times, one of which in each eye, paracentrally placed, was somewhat persistent.

### Medical Journal of Australia, Sydney

Nov. 25, 1922, 2, No. 22

General Principles in Psychotherapy. L. P. Lowson.—p. 603.

\*Dysentery Bacilli of Sonne Type. S. W. Patterson and F. E. Williams.—p. 608.

Practice of Medicine in Imaginary City of Utopiaville. E. Sirois.—p. 610.

Some Dislocated Lenses. J. L. Gibson.—p. 615.

**Dysentery Bacilli of Sonne Type in Colitis.**—Patterson and Williams have found in cases of colitis occurring in Australia, examples of a bacillus which constitutes a third group of dysentery bacilli, other than the Shiga and Flexner-Y groups. It is pathogenic for man and animals. Bacteriologically, it is easily confused with dysentery bacilli of the Flexner-Y type, but it is a slow fermenter of lactose. It is agglutinated in low dilution by Flexner-Y agglutinating serum and up to a dilution of 1:1,600 with a polyvalent dysentery serum which is made with an antigen containing representatives of this group. In a series of observations of normal persons and diarrhetic patients, the authors found that agglutination of the patient's serum with this bacillus at a dilution of 1:100 or more may mean that the patient is showing a specific response to that organism.

### Practitioner, London

December, 1922, 109, No. 6

Prescience in Tuberculosis: Bearings on Treatment. R. Philip.—p. 413.

Mental Aspects of Tuberculosis. O. M. Holden.—p. 418.

\*Cerebral and Cerebellar Hemorrhages in Apparently Healthy Adolescents and Children. C. O. Hawthorne.—p. 425.

Auricular Fibrillation. A. J. S. Pinchin.—p. 436.

Treatment of Indigestion. J. Taylor.—p. 447.

Reconstructive Surgery. G. R. Girdlestone.—p. 456.

Perils from Perishing Parasites. F. G. Cawston.—p. 460.

Value of Rectal Feeding in Illness. A. E. Rouse.—p. 463.

**Intracranial Hemorrhage in Apparently Healthy Adolescents.**—Hawthorne records two examples of swift and sudden death from intracranial hemorrhage in two boys, aged 17 and 14 years, respectively; each was regarded, until the day of his death, as in good and even vigorous health, and

neither case was there any history or evidence of violence. In one case there was a considerable hemorrhage deep in the substance of the midcerebellum but no sign of injury and no other evidence of disease. In the other case there was a large hemorrhage in the left frontal lobe and both lateral ventricles were full of blood.

### South African Medical Record, Capetown

Nov. 25, 1922, 20, No. 22

Sterility. E. R. Snyman, Kroonstad.—p. 430.

\*Filter Passing Micro-organism Associated with Epidemic Influenza. S. Lister.—p. 434.

**Bacteriologic Study of Influenza.**—The nasopharyngeal washings from fifteen cases of influenza obtained in eleven instances within twenty-four hours of the onset of the disease were studied bacteriologically by Lister. After a period of from six to eight days minute bodies were observed from some of the tubes inoculated with the filtrates from five out of the fifteen cases under investigation; in some specimens these bodies were present in enormous numbers. They are minute, measuring about 0.15 microns and are uniform in size; they stain a deep blue, and give a peculiar impression of "hardness"; under a magnification of 1,000 they resemble pin points. They usually occur singly, but chains are sometimes present composed of from three to five individuals. Lister has succeeded in subculturing them to the fourth generation both by direct subculture and by the subculture of filtrates from positive cultures. These organisms correspond with those described by Olitsky and Gates. A preliminary attempt was made to infect human beings with this organism. The experiment was carried out on eighteen natives and on the author. Seven subjects received the filtrate, six the unaltered culture and six received the heated culture. Of the nineteen volunteers only one complained of any discomfort; he was in the unaltered culture group and had a typical attack of uncomplicated influenza, beginning nineteen hours after the spraying. The minute bodies were observed in smears of his nasal secretion. A nasal washing was taken and filtered through a Berkefeld candle, the filtrate being planted into Smith-Noguchi medium. Five days later a profuse growth of this minute organism had developed.

### Tubercle, London

December, 1922, 4, No. 3

\*Position of Colony in Tuberculosis Campaign. S. Tinker.—p. 97.

Two Manometers in Apparatus for Inducing Artificial Pneumothorax. W. P. Morgan.—p. 104.

\*Tuberculosis as Deficiency Disease. V. F. Soothill.—p. 108.

Duration of Sanatorium Treatment. R. C. Macfie.—p. 111.

**Position of Colony in Tuberculosis Campaign.**—The growing tendency to discredit the colony as a method of obtaining the desired permanent welfare of the tuberculous working man is controverted by Tinker. In his opinion the colony offers a period of extended treatment, each month of which reduces materially the danger of relapse. It is a stepping stone between sanatorium and home. The author emphasizes that the colony must not be an isolated institution, but must work in harmony with the public health authorities and find its appointed place in the whole problem. Some form of protection is necessary after colony treatment is completed. The municipal workshop offers the possibility of this protected labor in a large number of cases; in rural areas a cooperative system of marketing the goods made by patients in their own homes is essential. The village settlement offers but limited help, and although a method of dealing with individual cases (i. e., the very infective), it is too expensive to be of material assistance in the whole problem. Industrial colony life reestablishes the mental as well as the physical well being of patients, fostering initiative and bringing the ment out of the hopeless attitude which continuous unemployment has caused. Although initial results may be small, they will increase with time and experience.

**Tuberculosis a Deficiency Disease.**—It is suggested by Soothill that future generations might be better protected through increasing individual resistance by an abundant supply of fat soluble vitamin to the developing child, before and after birth.



**Bulletins de la Société Médicale des Hôpitaux, Paris**Dec. 1, 1922, **46**, No. 34

- \*Diagnosis of Addison's Disease. A. Sézary.—p. 1572.
- \*Intravenous Infusion by Drip Method. J. Thiroloix.—p. 1575.
- \*Addison's Disease and Pigmentary Cirrhosis. C. and J. Oddo.—p. 1578.
- \*Gangrene of Hepatic Flexure in Amebic Dysentery. E. Lenoble and Y. Jegat.—p. 1582.
- \*Acute Scleroderma. Laignel-Lavastine et al.—p. 1586.
- \*Chronic Multiple Synovitis of Tendons. R. A. Gutmann.—p. 1590.
- \*Contagiousness of Whooping-Cough. H. Barbier and Renard.—p. 1592.
- \*Multiple Spontaneous Perforation of Lung. Terris.—p. 1595.
- \*Sympathicotonia in Tachycardia. Gilbert and Coury.—p. 1596.
- \*Cutaneous Leishmaniasis. Plessier.—p. 1609.
- \*Cervical Myotonia in Nurslings. G. Variot.—p. 1613.
- \*Familial Myoclonic Epilepsy. Crouzon et al.—p. 1620.
- \*Kala-Azar in France. J. Renault et al.—p. 1624.
- \*Chronic Syphilitic Arthropathy and Vitiligo. Brouardel et al.—p. 1632.
- \*Red Thyroid Spot. G. Marañon.—p. 1635.

**Diagnosis of Addison's Disease.**—Sézary believes that even the simultaneous presence of asthenia, arterial hypotension, Sergent's white line, pigmentation of skin and mucous membranes, does not always point to Addison's affection of the suprarenal capsules. Asthenia, if evidenced by a rapidly increasing fatigue of muscles during work, is the most important finding. Yet even this sign is present in myasthenia gravis and perhaps in some other conditions.

**Intravenous Infusion.**—Thiroloix demonstrates an apparatus ("rhéostill"), by means of which very slow intravenous injections of large quantities of fluid can be made. The injection may be fractioned and this may prevent anaphylaxis if the first pause lasts five minutes.

**Addison's Disease and Pigmentary Cirrhosis.**—Oddo and Oddo report two cases of a combination of Addison's disease with pigmentary cirrhosis (one of them without diabetes) with anatomic findings.

**Gangrene of Hepatic Flexure in Amebic Dysentery.**—Lenoble and Jegat publish a case of amebic dysentery leading to death in spite of emetin treatment. The patient had ascites, edema, no fever, a positive Wassermann reaction. The clinical diagnosis was: chronic peritonitis after atrophic cirrhosis of the liver in an old syphilitic. The necropsy showed gangrene of the hepatic flexure, extending into the liver, a small liver, and localized peritonitis. No amebic cysts were found after death.

**Acute Scleroderma.**—Laignel-Lavastine, Coulaud and Largeau report a case of acute generalized scleroderma with severe pains in the joints. Three rabbits injected with the blood of the patient developed bronchopneumonia with tendency to necrosis and changes in the thyroids. A streptococcus was cultivated from the rabbits (not from the patient). It failed, however, to produce lesions in other rabbits.

**Contagiousness of Whooping Cough.**—Barbier and Renard believe that whooping cough is hardly infectious after three weeks. Such children could be allowed to attend school, but great care should be taken to isolate brothers or sisters, if they have even a slight cough. In one case of typical pertussis they were unable to cultivate the Bordet-Gengou bacillus from the patient. Yet the bacillus grew in pure culture from the pharyngeal mucus of a brother who was coughing but did not have a real attack of the disease.

**Sympathicotonia in Tachycardia and Melanoderma.**—Gilbert and Coury's patient was a syphilitic with hypertension and mitral insufficiency, who had attacks of paroxysmal tachycardia and marked pigmentation of the skin. They are inclined to attribute both of these symptoms to increased sympathicotonia.

**Cervical Myotonia with Plagiocephaly and Craniotabes in Nurslings.**—Variot demonstrated four infants with these symptoms. The unilateral myotonia is the cause of plagiocephaly (asymmetric shape of the skull with depression of one parieto-occipital region).

**Kala-Azar in France.**—Renault, Monier-Vinard and Gen-dron describe a case of leishmaniasis in a child who recovered after injections of sodium acetyl-para-aminophenylantimonate.

**Red Thyroid Spot.**—Marañon reports on this sign, which is present in 85 per cent. of cases with hyperthyroidism. Gentle rubbing of the anterior part of the neck provokes in many neurotic subjects a reddening of the skin. In cases with

hyperthyroidism this redness is limited or localizes quickly just above the thyroid gland. He discusses the relation of this sign (which he described in 1919) to Lian's local hyperesthesia in hyperthyroidism.

**Journal de Chirurgie, Paris**October, 1922, **20**, No. 4

- \*Remote Sequelae of Cholecystectomy. H. Hartmann and D. Petit-Dutaillis.—p. 349.
- \*Experimental Study of Omentum Grafts. P. Brocq et al.—p. 358.

**Remote Sequelae of Cholecystectomy.**—Hartmann and Petit-Dutaillis have reexamined 100 patients long after cholecystectomy, and state that 92 per cent. of this total number were rid of all the disturbances they had been suffering for several years. The relief was immediate or not until after medical treatment following the operation. In one case they were obliged to operate later for a calculus in the common bile duct. This shows the importance of exploring the ducts during cholecystectomy. In more than 8 per cent., appendicitis complicated the cholecystitis, tending to prove that the appendix region also should be examined during cholecystectomy. After the operation, a secondary intervention may be required for adhesions, although it is exceptional; this was required only twice in their 100 cases.

**Experimental Study of Omentum Grafts.**—Brocq, Ducastaing and Reilly describe a few of the main practical applications of the plastic power of the omentum. They experimented on dogs, sheep, rabbits and guinea-pigs. They chose the bottom of the cecum to apply the graft as this point is easy to find in further operations. It may be premature to draw practical conclusions from their experiments, but one fact seems acquired; namely, that the free omentum graft survives, while preserving its specific character. They believe that they are the first to establish by histologic data this remarkable persistence of the endothelium. Their experimental research demonstrates that we cannot rely very much on the omentum graft to insure that the suture is watertight. However, it is bound to be useful in gastro-duodenal surgery, but the main and great value of the free omentum graft is in prevention of adhesions and to prevent the reforming of adhesions. We can use it wherever operations leave an oozing surface and peritonization is impossible. Pedunculated grafts should not be used, as retraction may occur later and entail stenosis. It is in the treatment of certain forms of pericolicitis, with the sticking together of parts of the colon, that the omentum graft is chiefly indicated, especially after correction of a kink bound down by adhesions. All their experiments were on a strictly aseptic basis, and their conclusions do not apply in case of infection.

**Nourrisson, Paris**November, 1922, **10**, No. 6

- \*Inorganic Heart Murmurs in Infants. G. Blechmann.—p. 353.
- \*Antiscorbutic Power of Different Milks. Lesné and Vaglianos.—p. 377.
- \*Prophylaxis of Tuberculosis in Infants. R. Dubost et al.—p. 386.
- \*Maternity House. A. Thierry.—p. 392.
- Second Congress of French Pediatricists. H. Lemaire.—p. 398.

**Inorganic Murmurs in Infants.**—Blechmann reviews the functional murmurs of the heart which are not as rare in young children as it is supposed. After discussing the differential diagnosis, he concludes that time (sometimes a year) is the only safe criterion for diagnosis, if an orthodiagram does not show a distinct organic lesion. Eight cases are described.

**Antiscorbutic Power of Different Milks.**—Lesné and Vaglianos prepared milk in different ways, and tested its power to prevent scurvy in guinea-pigs. Ten minutes of boiling did not hurt the milk, nor heating below 80 C. after addition of sugar. Pasteurization is also good, but the milk is not completely sterilized. They conclude that the best way to prevent scurvy in infants nourished with sterilized milk consists in the addition of a little orange or lemon juice to the food, beginning from the second month.

**Prophylaxis of Tuberculosis in Infants.**—Dubost, Blechmann and François describe the remarkable results obtained by the rural center for babes at Mainville-Draveil. This center took care in 1920-1921 of ninety-five infants, thirty-



seven of whom were born from tuberculous parents. The infants are placed in private homes at a maximum distance of  $1\frac{1}{4}$  mile from the center. The nurses are paid 150 francs per month. The daily expenses are from 6 to 7 francs per child. The mortality was 4.3 per cent. in 1921.

**Maternity House.**—Thierry describes the institution of the maternity house at Tours, with an annex for new-born babes and their mothers. In a village 15 km. from Tours, infants are received without mothers.

### Paris Médical

Dec. 2, 1922, 12, No. 48

Therapeutics in 1922. F. Rathery.—p. 485.

\*Local Vaccination. A. Besredka.—p. 496.

Artificial Pneumothorax in Pulmonary Gangrene. Emile-Weil.—p. 500.

\*Treatment of Visceral Hemorrhages. P. Carnot and P. Blamoutier.—p. 503.

\*Treatment of Streptococcus Infections. A. Mauté.—p. 506.

Present Status of Bismuth Treatment of Syphilis. Emery and Morin.—p. 509.

**Local Vaccination.**—Besredka examined the mode of action of vaccines. He found that after an intravenous or even a subcutaneous injection of living Shiga bacilli in a rabbit, the organs are sterile, but the bacilli are present in the contents of duodenum and ileum. If killed cultures are injected, we can conclude from the swelling of the mucosa that even dead bacilli are excreted there. Similar experiments were made with living and dead cultures of the typhoid-paratyphoid group and cholera. On account of this affinity for the intestinal wall, we can assume that such vaccines, in part at least, reach the bowels. Consequently it is possible to immunize against these diseases by giving the vaccines by the mouth, although it is necessary to add bile to all, except the Shiga. Such immunity is not associated with the presence of antibodies in the blood. Yet it allows us to assume that, even in the other case, the main factor is the local vaccination of the intestine by the excreted vaccine. Besredka points out that smallpox vaccination is a good precedent. He finds that it will be always advisable to consider the receptive organ of the infection. Results with anthrax were encouraging; plague gives some hopes, and it seems that Malta fever immunity is also local, not humoral. It would be advisable to try the intracutaneous instead of the subcutaneous method in staphylococcus infections. He believes that perhaps opsonins are no more important than other humoral antibodies.

**Intravenous Injections of Calcium Chlorid in Treatment of Visceral Hemorrhages.**—Carnot and Blamoutier found that intravenous injection of calcium chlorid is superior to oral ingestion in a number of hemorrhagic states.

**Treatment of Streptococcus Infections with Cocci Dissolved in Sodium Hydroxid.**—Mauté used a vaccine prepared by dissolving streptococci with sodium hydroxid. No results were obtained in ulcerative endocarditis, and more failures than successes in puerperal infections. Good results are reported in lymphangitis, lymphadenitis, purulent pleuritis, erysipelas and chronic tonsillitis.

### Presse Médicale, Paris

Dec. 2, 1922, 30, No. 96

\*Carbophosphaturia. A. Martinet.—p. 1037.

Indications for Ouabain and Digitalis in Treatment of Heart Disease. R. Lutembacher.—p. 1038.

\*Modern Classification of Nephritis. Wolf.—p. 1040.

**Carbophosphaturia.**—Martinet discusses the different conditions under which phosphates and carbonates are precipitated in heating unacidified urine. The first group consists of patients with respiratory troubles leading to an excess of carbon dioxid in the blood. This carbon dioxid is neutralized by the alkali of the blood, and is eliminated in this form through the kidneys. The second group are patients with hyperacidity of the stomach, especially if they are vomiting the acid gastric juice. It is clear that this leads to an alkalinoses. A very common reason for the reaction mentioned is alkalinity of the urine. People using carbonates as a remedy, and patients suffering from urinary infections with ammoniacal fermentation, may void turbid urine. Some relation of the pneumogastric nerve to carbophosphaturia is

probable. Martinet believes also, that the hyperacidity of the gastric juice may be a reaction of defense against alkalinoses of blood.

**Modern Classification of Nephritis.**—Wolf reviews the new German clinical and anatomic researches in nephritis.

### Revue Médicale de la Suisse Romande, Geneva

November, 1922, 42, No. 11

\*Erythema Nodosum After Delivery. E. Gueissaz.—p. 706.

Pernicious Anemia Due to Bothriocephalus. A. Cramer.—p. 718.

Case of Anemia Due to Bothriocephalus. A. Montandon.—p. 727.

Two Cases of Desquamative Erythroderma. Brun and Perrier.—p. 734.

Two Cases of Lethargic Encephalitis in Nurslings. Perrier.—p. 737.

**Erythema Nodosum After Delivery.**—Gueissaz describes five cases of erythema nodosum developing shortly after delivery, and recommends that search be made for the porta of infection. Angina precedes the attack quite frequently. The prognosis of idiopathic erythema nodosum is better than of secondary cases (tuberculosis, gonorrhea, syphilis).

### Archivio Italiano di Chirurgia, Bologna

November, 1922, 6, No. 2

\*Squamous Epithelioma of Lower Lip. A. Miliani.—p. 105.

\*Blocking Splanchnic Nerves. R. Gandusio and G. Pototschnig.—p. 125.

The American Cystoscopes. E. Pirondini.—p. 140.

\*Cylindromas. B. Anglesio.—p. 153.

\*Traumatic Rupture of Spleen. L. Baccarini.—p. 166.

\*Experimental Growth of Bone and Cartilage. B. Poletini.—p. 179.

\*Retractile Mesenteritis. R. Falcone.—p. 192.

Appendicectomy in Chronic Colitis. O. Cignozzi.—p. 205.

**Epitheliomas of Lower Lip.**—Miliani's photomicrograms confirm the view that the granulation tissue represents the highest degree of resistance opposed to the invading growth. He declares that study of the mode of production of this granulation tissue will throw light on the origin and treatment of malignant disease.

**Blocking the Splanchnic Nerves for Abdominal Surgery.**—Gandusio and Pototschnig have been applying Kappis' method of four injections of 30 or 40 c.c. of a 1 per cent. solution of procain, with a little epinephrin. The details are tabulated from their eighteen cases. A little ether to complete the anesthesia was required in three cases; these were a cancer of the papilla of Vater, a case of supposed gastric ulcer in which the findings were negative, and a case of cancer of the liver and duodenum. In all the others the nerve blocking was a complete success. The list includes several cases of resection of the stomach. The chief benefit of splanchnic anesthesia is seen after the operation. The operative shock is minimal, the local pains slight, the patients free from nausea. The pulse was the same as before the operation. No respiratory complications were observed, but local and regional anesthesia does not guarantee against postoperative pneumonia and bronchitis. They state that the anesthesia obtained by blocking of the splanchnic nerves is so perfect and lasting that the longest and most extensive operations can be performed under it. Several of the operations described took an hour and forty minutes and one, two and a half hours. The splanchnic analgesia was perfect throughout. Kappis' publication on this method of regional anesthesia was summarized here, April 10, 1920, p. 1060.

**Cylindromas.**—Anglesio found that three so-called cylindromas examined were unmistakably endotheliomas.

**Rupture of Spleen.**—The boy of 8 had fallen from a tree, and symptoms developed suggesting incipient peritonitis, but the laparotomy revealed only extravasation of blood. Its source could not be discovered although the liver, spleen, etc., were palpated. Necropsy revealed rupture of the spleen with acute hemorrhage. A clot had plugged the crack in the spleen and there was no pain at any time to call attention to the spleen, and no stiffening of the abdominal wall.

**Experimental Grafts of Cartilage and Bone.**—Poletini reports research on rabbits with subcutaneous and sub-fascial implantation of scraps of cartilage from the ear or of bone from the scapula. The grafts had all been kept in alcohol or a solution of formaldehyd. The technic was similar to Nageotte's, but the outcome differed widely in the different animals. In some, the implants were partially or totally absorbed, while in others they persisted unchanged, and in



still others (two of the twelve cartilage and four of the nineteen bone implants) there was active proliferation of the cartilage or bone tissue, actual neoformations. These neoformations, however, were never found in direct connection with the implants. The literature on heteroplastic bone formation is reviewed.

**Retractile Mesenteritis.**—Falcone discusses three cases in which the mesentery had been the seat of inflammatory processes which had entailed diffuse shriveling of the mesentery. This retraction pulled loops of intestines upward and back toward the spine. The viscera are not involved in the inflammatory process of this retractile mesenteritis. In his three cases there was considerable ascites, and in one tuberculous nodules were scattered over the omentum. Nothing could be done in any case, and the abdomen was sutured.

### Rivista di Clinica Pediatrica, Florence

October, 1922, 20, No. 10

\*Butter-Flour Mixture in Infant Feeding. A. Gismondi.—p. 577.

\*Typhoid in Infants. A. Medi.—p. 597.

**Butter-Flour Mixture in Infant Feeding.**—Gismondi has very favorable results with the use of Czerny-Kleinschmidt's butter flour pap in infant feeding. It is well tolerated, especially in mixed nursing, acts well in hypotrophic and convalescent infants, and is contraindicated only in acute dyspepsia and diarrhea.

**Typhoid in Infants.**—Medi believes that the rarity of typhoid infection in the first months of life is due partly to a certain immunity at this stage and the lack of exposure to infection, but partly to the diagnostic difficulties. In cases of congenital typhoid, lesions of the intestine are scarcely ever present, while ulcerations are frequent in typhoid contracted during the first months. The prognosis is not always good.

### Brazil-Medico, Rio de Janeiro

Nov. 18, 1922, 2, No. 46

\*The Dangers from Purgatives. A. Pedro.—p. 313.

Biologic Differentiation of Cobras by Precipitins. L. de Assumpção.—p. 315.

Nutritional Index in Children. E. Meirelles.—p. 318.

Mosquitoes of Matto Grosso; New Species. A. Neiva and C. Pinto.—p. 321.

Nov. 25, 1922, 2, No. 47

Sarcoma of the Choroid. Abreu Fialho.—p. 329.

Tests of Heart Action in Children and in Hookworm Disease. A. de Almeida Junior and S. B. Pessoa.—p. 331.

Symbionts in Brazilian Ticks. A. Godoy and C. Pinto.—p. 335.

A Case of Mycosis. M. Mourão.—p. 335.

Bismuth in Treatment of Syphilis. M. Krone.—p. 338.

**Purgatives.**—Pedro remarks that the medical science of the early nineteenth century rested on the tripod, blood-letting, emetics and purgatives. Blood-letting and emetics have fallen from their high estate as panaceas, but the purge is still in high honor. Anybody can give a purgative, and this inherited habit is maintained by physicians. The family sees that the first thing the physician does is to prescribe a purgative. The reaction to the purgative may be severe. Pedro says that he will never forget a case in which he had prescribed a purgative—"like every one else"—and the patient died of heart syncope as the bowels moved. The man might have died without the purge, but Pedro is convinced that it was an important factor in the fatality. In a case of mitral defect, he had always succeeded in tiding the patient through his attacks with heart tonics, but during an absence from town another physician was called in during an attack, and the patient died while the bowels were responding to the purge that had been ordered. In the typhoid group all purgatives are strictly contraindicated. The intestine irritated by the purgative drug absorbs toxins more readily. In Bur-lureau's twelve cases of accidental food poisoning, the five treated without purgatives recovered much more rapidly than the others who had been purged. Pedro agrees with those who denounce purgatives in uremia for various reasons, chief among them the fact that the purge reduces diuresis and upsets the balance between the nonprotein and the other nitrogen in the blood and urine. The traditional purge before operations is now omitted by many surgeons, and none, he says, have had reason to regret this action.

### Revista Médica del Uruguay, Montevideo

October, 1922, 25, No. 10

\*Acidosis Without Glycosuria. E. Claveaux.—p. 733.

Multiple Lesions in Unrecognized Syphilis. J. May and C. Rodríguez Estevan.—p. 738.

Tuberculous and Cerebrospinal Meningitis. M. Ponce de León.—p. 749.

\*Typhoid and Diphtheria. J. P. Urioste.—p. 760.

Depigmentation in Half-Breed. B. Vignale and J. Estapé.—p. 764.

**Acidosis without Glycosuria.**—Claveaux's patient was a woman, aged 48, with aortic insufficiency, high blood pressure, and retention of chlorids, with tube-casts in the urine and rebellious oliguria. As the oliguria progressed, there was a phase of mental confusion, generalized pruritus, and other symptoms. The urine was hyperacid but there was no glucose or acetone or diacetic acid. After failure of all other measures, sodium bicarbonate treatment was followed by great improvement. Systematic courses, up to 12 gm. of sodium bicarbonate daily, restored comparative health. Now, a year and a half later, the urine is tested with litmus paper, and when it gives an acid reaction, the patient takes the bicarbonate anew; otherwise not. The diuresis increased from 600 gm. to 2.5 liters as soon as 12 gm. of the bicarbonate had been taken.

**Typhoid and Diphtheria.**—Urioste reports a case of this grave association, which is five times more fatal than typhoid alone. It was frequently observed during the war. Joltrain, examining all the typhoid patients entering the hospital, found that a large proportion were diphtheria bacilli carriers (1 in 35). Even when the diphtheria was recognized promptly and treated with antitoxin, the mortality was three times that of typhoid alone. Urioste recalls Huchard's saying "We find what we look for; we look for what we know about."

### Semana Médica, Buenos Aires

Nov. 2, 1922, 2, No. 44

Biologic Methods in Tuberculosis. G. Aráoz Alfaro.—p. 889.

Angio-Endothelioma of the Ear. J. Layera.—p. 894.

\*Rôle of the Maternity. A. Peralta Ramos and J. P. Garrahan.—p. 898.

Appendectomy. E. Matons.—p. 904.

Traumatic Aortic Insufficiency. Emanuel and Roncoroni.—p. 908.

Intra-Uterine Puericulture. V. Delfino.—p. 909.

Vaccines and Serums in Acute Respiratory Diseases. Helmann.—p. 915.

Cough as a Symptom. A. Viton.—p. 916.

Institution for Foundlings. O. L. Bottaro.—p. 918.

Psychophysiologic Tests of the Senses. J. Ramon Beltran.—p. 921.

Illegitimate Maternity. J. A. Beruti and D. Iraeta.—p. 923.

Medicolegal Aspect of Birth Injury. F. A. Deluca.—p. 929.

Experiences with Hydatid Cysts. Calcagno and Collivadino.—p. 932.

Fibroma of Lobule of Ear. C. Jiménez López et al.—p. 934.

Nepiology, the Science of Infant Care. V. Delfino.—p. 935.

**Rôle of Maternity Hospitals.**—The new Maternity at Buenos Aires is almost ready for inauguration. It adjoins the Rivadavia Hospital and cost over two million pesos. It is designed to include, besides the lying-in hospital, welfare work for mothers and infants, with prenatal and postnatal care and advice. It is equipped with 206 beds for adults and 126 for infants, and has twelve distinct departments. One section is devoted to assistance in the home, and one is entitled the puericulture institute. Every maternity home practices prenatal puericulture, but very few continue the care after birth. This one will give shelter to nursing women, provide a milk station, and social service with trained workers.

### Siglo Médico, Madrid

Nov. 11, 1922, 70, No. 3596

Contraindications to Mineral Waters. H. Rodríguez Pinilla.—p. 461.

\*Experimental Chorea and Athetosis. G. R. Lafora.—p. 463.

Digestive Derangement in Infants. García del Real.—p. 464.

Nov. 18, 1922, 70, No. 3597

Traumatic Gangrene. Carrasco.—p. 485. Conc'n No. 3598.

Interpretation of Apical Findings. B. López Durán.—p. 488.

The Sanitary Service in the Morocco Campaign. E. Slocker.—p. 489. Conc'n No. 3598.

**Experimental Chorea and Athetosis.**—In experiments on twenty-seven cats Lafora drove a needle into the red nucleus, the hypothalamus, or the superior cerebellar peduncle. In twelve of the cats, symptoms of chorea or athetosis developed. Puncture of both lenticular nuclei was not followed by any tendency to chorea or athetosis. Sometimes the movements occurred on the same side as the puncture, and sometimes on the opposite side. Some of the animals developed nystagmus, ophthalmoplegia or more or less transient cere-



bellar syndromes. The movements in some developed soon after the puncture and persisted for two or three days or even for fifteen or twenty days. In others they did not appear till after an interval of a month but then continued indefinitely for months. The exact localization of the extrapyramidal lesions responsible for chorea and athetosis is thus demonstrated by his findings. They harmonize with Kleist's statements as to subcortical centers for movements.

### Archiv für Kinderheilkunde, Stuttgart

Nov. 18, 1922, 72, No. 2

- \*Nutrition of Children in Orphanages. E. Rost et al.—p. 81.
- \*Roentgen Examination of Alimentary Tract. I. Buchheim.—p. 100.
- \*Protein Treatment in Pediatrics. Barabás and Torday.—p. 111.
- \*Enterogenous Salt Fever. H. Schönfeld.—p. 120.
- \*Blood Picture in Congenital Syphilis. W. Nitschke.—p. 136.

**Nutrition of Children in Orphanages.**—Rost, Herbst and Weitzel examined the food and its utilization in fifty boy inmates of an orphanage in Berlin. They found the food sufficient in organic substances and salts. A further addition of calcium did not influence the children.

**Roentgen Examination of Alimentary Tract in Children.**—Buchheim examined the gastro-intestinal tract of children over 1 year of age. She quotes the literature and publishes her own results in twenty-three cases. The stomach empties, on the average, in two hours, the small intestine in from two to four hours.

**Protein Treatment in Pediatrics.**—Barabás and Torday put very narrow limits even to a tentative protein treatment in infants.

**Enterogenous Salt Fever.**—Schönfeld confirms the finding of relative constancy of the level of chlorids in the blood (except after the meal). Ingestion of 3 gm. of salt in 100 c.c. of water caused fever in some infants. The amount of salt in the blood increased immediately before the fever, but some cases with high chloridemia did not have an increased temperature. In some children the salt produced all the symptoms of alimentary dyspepsia.

**Blood Picture in Congenital Syphilis.**—Nitschke examined the blood of fifty syphilitic children of different ages. The number of erythrocytes and the hemoglobin percentage were normal. There was a slight tendency to an increased number of white corpuscles, especially lymphocytes. The younger forms of neutrophils appeared in a larger proportion than the older forms.

### Archiv für klinische Chirurgie, Berlin

Nov. 30, 1922, 122, No. 1

- \*Resection of Urethra. N. Petroff.—p. 1.
- \*Appendicular Abscess in Cecum Wall. A. Szenes.—p. 12.
- \*Access to Subphrenic Abscess. K. Nather.—p. 24.
- \*Electronarcosis. K. v. Neergaard.—p. 100.
- \*Spontaneous Healing of Cancer. N. P. Trinkler (Charkoff).—p. 151.
- \*Sugar Content of Blood During Anesthesia. H. Dewes.—p. 173.
- \*Volvulus During Pregnancy. E. König.—p. 188.
- \*Resection of Lesser Curvature. E. Borchers.—p. 198.
- \*Etiology of Muscular Caput Obstipum. O. Beck.—p. 218.
- \*The Peripheral Sympathectomy Question. E. Seifert.—p. 248.
- \*Primary Movable Duodenum. H. Miyake.—p. 269.
- \*Rupture of Pancreas, Stomach and Liver. Recovery. Wildegans.—p. 276.
- \*"Purulent Osteomyelitis of Vertebrae." E. Fraenkel.—p. 280.

**Treatment of Cicatricial Strictures and Fistulas in the Urethra.**—Petroff remarks that progress in plastic surgery has been one of the reasons why simple resection of the stricture with end-to-end suture of the urethra has been neglected in favor of more complicated operations. They are not needed. The urethral stumps with their encircling spongiosa are easily mobilized to bridge a gap of 6 cm. or more. Successful bridgings of gaps of 8, 12 and even 16 cm. have been published. Diversion of the urine is the first step, and the operation proper should not be attempted until infection has been conquered. Then the stricture or fistula is resected through the perineum, aided by a metal catheter in the proximal stump, which has been introduced through the incision in the bladder. A soft catheter in the distal stump is passed into the bladder as the metal one is drawn back. Petroff gives his experiences with eleven cases, and emphasizes the necessity for refraining from leaving a catheter in the urethra after the stumps have been sutured with fine catgut.

**Access to Subphrenic Abscess.**—Nather reviews the anatomic conditions which determine the localization of subphrenic abscess. He warns against the liability to overlook the insidious spread of the infection to other spaces than the one first found, and describes the technic for access by an incision over and parallel to the costal arch in front, or by an incision in the back with resection of the twelfth rib. He extols the advantages of these routes, and describes in detail fifteen cases to throw light on the differential diagnosis and the outcome of these operations.

**Electronarcosis.**—Neergaard reports extensive research on the application of the electric current by Leduc's technic to induce general anesthesia in animals. The narcosis could be maintained for hours; in one case up to nine hours, and ten minutes afterward the dog was eating again. Two of the thirty-five animals died in the course of the narcosis; in the others the narcosis was usually pushed to asphyxia. No attempt was made to apply it to man as the safe limit is too narrow. He recalls, however, that this form of narcosis acts on the most primitive building stones of the organism, and hence for man it seems as if it would be more effectual than in animals. But the experimental basis must be built up more solidly before electronarcosis can be safely tried in the clinic. The numerous advantages of electronarcosis justify further research. The complex factors involved call for systematic concerted action, and he surveys the special lines along which research seems promising.

**Spontaneous Cure of Cancer.**—Trinkler relates that he applied gastro-enterostomy in two cases of large inoperable cancer of the pylorus with extensive involvement of the lymphatics. One of the patients was a woman physician, aged 43. An excised gland in each showed malignant disease, but the tumors retrogressed and the women have been apparently in good health during the subsequent ten and seven years. He compares with these cases what has been published on spontaneous subsidence of cancer, saying that research on the tissues and organs involved in the organism's fight against malignant disease might reveal means to reinforce the natural defensive forces.

**Sugar Content of the Blood During Anesthesia.**—Dewes ascribes to the anesthetic alone the slight increase in the glycemia during local anesthesia for extraperitoneal operations. The increase is much higher with laparotomies under local anesthesia or ether—possibly as high as two or four times the normal figure. The factors inducing this are probably complex.

**Volvulus in Pregnancy.**—König adds another case to the five on record in which the small intestine had become twisted in the course of gestation. The sigmoid colon was involved in sixteen of the total twenty-eight instances on record of volvulus occurring in the pregnant. In his case the woman died twenty hours after the laparotomy. The volvulus had evidently been induced by a mesenteric cyst. The entire small intestine was involved.

**Resection of the Lesser Curvature of the Stomach.**—Borchers analyzes the effect on the shape and motor function of the stomach after lengthwise or doorstep resection of this portion of the organ. All of the seven patients thus treated have been freed from their former symptoms. The group includes one case of a small scirrhus carcinoma of the pylorus.

**Muscular Torticollis.**—Beck rejects all the theories advanced to explain this anomaly. He ascribes it to a congenital deformity of the muscle.

**Periarterial Sympathectomy.**—Seifert applied Leriche's method of peripheral sympathectomy without much benefit in a case of traumatic injury of the hands with suspicion of syringomyelia. The improvement afterward was slight although the changes induced at first were striking. In a case of trophoneurosis in a man, aged 35, the immediate and persisting benefit was pronounced, both subjectively and objectively. Reports as to the durability of the improvement are contradictory. Possibly a difference in the technic may be responsible for this diversity in the outcome. He describes two cases in which trophic disturbances followed the severing



of the femoral or popliteal artery and immediate suture of the stumps. The periarterial sympathetic fibers had evidently been injured and trophic disturbances followed. The conditions were thus exactly the reverse of the intentional periarterial sympathectomy to cure trophic disturbances. He declares that besides the mustard test, the blood pressure, and test hyperemia below a constricting band, we must examine the capillary circulation with the microscope and also the histologic findings, as further functional tests. The cases of gangrene after ligation of arteries should be revised from this standpoint of injury of periarterial sympathetic fibers. His final conclusion is the need for caution in operating on arteries.

**Primary Movable Duodenum.**—Miyake describes ten cases of colic for which a primary, abnormally movable duodenum was responsible—"a new clinical picture." He says that the immediate and durable cure by fastening the duodenum in its normal place has confirmed the correctness of his assumptions and procedure.

### Beiträge zur klinischen Chirurgie, Tübingen

1922, 127, No. 2

- \*Diagnosis of Knee Disease. E. Bircher.—p. 239.
- \*Reaction of Bone to Mechanical Influences. W. Müller.—p. 251.
- \*Blood Pressure During Operations. A. Lehnbecher.—p. 291.
- \*Perforation of Ulcer on Rear Wall of Stomach. W. Cloos.—p. 331.
- \*Pathogenesis of Chronic Duodenal Ulcer. C. Rohde.—p. 340.
- \*Postoperative Peptic Ulcer. H. Erckenbrecht.—p. 365.
- \*Perforation of Gallbladder. F. C. Hilgenberg.—p. 399.
- Inflammatory Tumor in Abdominal Wall. F. Schankies.—p. 405.
- \*To Lengthen Spermatic Cord. Welti.—p. 410.
- \*Operation for Exstrophy of Bladder. E. Brattström.—p. 419.
- \*Fracture of Neck of Femur. C. E. Jancke.—p. 422.
- Rotation of Leg with Hip Disease. Kehl.—p. 438.
- Irritation from Aluminum Acetate. W. Speck.—p. 445.
- Operative Treatment of Radial Paralysis. V. Dumpert.—p. 457.
- Isolated Rupture of Pancreas from Contusion. A. Nast-Kolb.—p. 462.
- Intramuscular Lipoma. A. Nast-Kolb.—p. 465.
- \*Chronic Perienteritis. A. Lehnbecher.—p. 468.

**Diagnosis of Injury of Semilunar Cartilage.**—Bircher comments on the misleading findings with roentgenography of the knee by the usual technic. In a series of 68 operative cases there were signs of arthritis deformans in 20 when reexamined later. In 41 the joint had been known to be free from inflammatory processes before the operation. In 15 cases a fragment of the outer condyle was chipped off for examination, and the microscope revealed inflammation in 70 per cent. of the cases in which the roentgen ray showed only normal conditions. Bircher then applied to the knee Jakobæus' laparoscope, after injecting oxygen or nitrogen into the joint by the artificial pneumothorax technic. This procedure is harmless and extremely effectual, he says, and reveals conditions inside the joint with precision. In 20 cases thus examined, the diagnosis was confirmed by the operation in 8 of the 9 cases of laceration of a semilunar cartilage; with arthritis in 3 of 4 cases, and with osteochondritis in one case. The operation confirmed the diagnosis further in a case each of serous gonitis, a loose body, a tuberculous process or a villous body. The suspicion of tuberculosis was disproved in one case. His experiments on the cadaver seem to show that this method of endoscopy cannot be applied to any of the other large joints, but for the knee it promises to become as indispensable as cystoscopy for the bladder.

**Modification of Structure of Bone Under Mechanical Strain.**—Müller cut out a segment of the radius in animals, thus throwing unusual mechanical strain on the ulna. Typical changes in structure developed, corresponding to the roentgen ray findings in coxa vara, genu varum and genu valgum.

**Blood Pressure During Operations.**—Lehnbecher had the blood pressure taken repeatedly before, during and for a day or two after operations. A total of 320 patients were thus examined. He asserts that the control of the blood pressure during an operation is the control of life itself. The lowering of the blood pressure is the very earliest sign of collapse and shock, and gives warning before there is any other sign of danger. The blood pressure directly after the operation is of little moment for the prognosis, but the pressure in the evening and the next morning tells whether the forces are rallying or the vitality is ebbing. The work issues from Burkhardt's service; he is an advocate of intravenous anes-

thesia, especially for operations on the head and neck. The blood pressure record is said to demonstrate the good analeptic action of this form of anesthesia. He makes a practice of testing the functional capacity of the heart before the operation when feasible. Among the measures for this is walking up a flight of stairs. A physician accompanies the patient, ready to arrest the test at the slightest sign of overdoing. The Katzenstein method was abandoned as the patients did not like the application of the constricting band to their legs, and this made its influence felt on the blood pressure. In 40 patients tested with the stair climbing, the findings corresponded to what was anticipated from the clinical picture in all but nine. The effect of digitalis is not instructive, as the healthy and the practically hopeless cases respond alike. The same may be said of saline infusion in diffuse peritonitis. The exposure of the vein may excite the patient and cause a misleading rise in the blood pressure.

**Perforation of Ulcer on Rear Wall of Stomach.**—Cloos quotes Boas' recent statement that he has had only three cases of perforation of a gastric ulcer in all his extensive experience. In Cloos' service at Stuttgart there have been twenty-six cases during the last ten years. Perforation of an ulcer in the posterior wall occurred in one case, the woman aged 53 having been apparently healthy for the preceding ten years, after a period of stomach disturbance. Symptoms suggesting ileus then appeared suddenly, but subsided under medical measures. Then an abscess developed in the lumbar region but its source was not ascertained until profuse bleeding occurred from both the bowel and the abscess. This was interpreted as from perforation of an ulcer in the posterior wall of the stomach, which was confirmed at necropsy, the woman succumbing to a second hemorrhage from the same source the day after. If it had been possible to discover the perforation earlier and to suture it and drain the abscess, the fatal outcome might have been averted. The perforation might possibly have been utilized for a posterior gastroenterostomy.

**Pathogenesis of Chronic Duodenal Ulcer.**—Rohde has been investigating this subject on the cadaver supported in an upright position. This has shown that certain organs press on the duodenum, compress its wall at these points, and thus expose the mucosa to various mechanical injuries, and to corrosion from the action of the digestive juices. The duodenal ulcer is a local lesion. This is true also of gastric ulcer and of certain gallstone disturbances. Mechanical, anatomic and functional factors combine alike in all these three affections.

**Postoperative Peptic Ulcer.**—Erckenbrecht cites Denk's compilation in 1920 of 309 authentic cases of postoperative peptic ulcer in the jejunum, and adds thirteen new cases to the list, all in men between 18 and 60. He comments on this preponderance of males in all compilations of cases of peptic ulcer. His material confirms the connection between ulcers close to the pylorus and peptic ulcers; some even deny that a peptic ulcer can develop after an operation for an ulcer remote from the pylorus. Some primary injury of the jejunum wall undergoes corrosion from the digestive juices, and a peptic ulcer is the result. Resection of the stomach, by reducing production of gastric juice, has a prophylactic influence, but even this is not infallible: In one of the thirteen cases tabulated, the peptic ulcer followed resection of one half of the stomach. The main thing is not to injure the wall of the jejunum during the operation, and to regulate the diet afterward to keep production of gastric juice at a minimum. The food must be thoroughly chewed; milk must be taken in abundance; and meat, and food with much waste must be proscribed.

**Perforation of the Gallbladder.**—Only 4 of 30 patients with perforation of the gallbladder were men; the others were women from 19 to 69 years old. The experiences with this material teach the necessity for early operation in gallstone disease, instead of waiting until the gallbladder and bile ducts have become so diseased that operation is difficult. In only one case did grave peritonitis follow the perforation. The symptoms in this case did not appear till ten days after the contusion entailing the perforation. In 20 cases pre-existing adhesions had walled off the perforation area. In



23 cases the gallbladder was removed; in the others the subjects were too much debilitated to permit this radical procedure. Seven of the patients died, including 4 of the 10 with diffuse peritonitis.

**To Lengthen the Spermatic Cord with Undescended Testicle.**—Wolti has applied Sievers' method in thirteen cases. The spermatic cord is drawn through the obturator foramen. This lengthens the cord in an adult by fully 7.5 cm. The first incision is as for inguinal hernia, and the foramen is reached from here after the spermatic cord has been thoroughly loosened up. Then a second incision is made in the thigh, to reach the foramen from outside, the 10 cm. incision extending from the spine of the os pubis outward. The adductor longus and the gracilis are separated and also the fibers of the adductor brevis. Through the breach thus made, forceps are introduced and are worked through the obturator foramen. The testicle is then drawn through the foramen. Sievers commends this technic not only for undescended testicles but also for the complete suture of the inguinal canal in cases of inveterate hernia. The only drawback is that the spermatic artery and the veins of the pampiniform plexus have to be severed. This does not seem to have any serious consequences. Otherwise the results are apparently perfect. This operation seems to ward off the tendency to malignant degeneration of ectopic testicles.

**Exstrophy of the Bladder.**—Brattström reports the application of the Maydl operation as modified by Borelius in three of five cases of exstrophy of the bladder. One boy aged 14 was cured, continence being perfect. A girl infant died on the day of the operation. One boy aged 2½ years at the time of the operation (1920), shows satisfactory condition. All the urine is voided through the rectum, and continence is perfect during the day, but not at night.

**Fracture of Neck of Femur.**—Jancke states that recent reexamination of fifteen patients who had been under treatment for fracture close to the head of the femur showed extremely good results. The extension treatment had been followed by restoration to full earning capacity; advanced age rendered the prognosis a little less favorable. In the total of fractures of the neck of the femur—76 women and 47 men—66 per cent. were left with a usable hip joint. Extension prevents adduction contracture and outward rotation; the rest of the joint retains its function.

**Chronic Perienteritis.**—Lehrnbecher reports cases of *Zuckergussdarm* in which the necropsy findings were the same though the clinical pictures had been different. The patients were a girl aged 21 and a man aged 46. The former had presented symptoms for three years which simulated gastric ulcer. The man's symptoms for ten years had suggested stenosis of the bowel. This is the first known instance of the condition having been diagnosed during life. On the old chronic affection with adhesions there suddenly developed an acute phase, with a tumor in the left side which could be nothing else than a clump of bowel loops welded together. Tubercle bacilli were found in the first case but nothing was discovered to explain the condition in the other.

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- Duties and Limits of Medical Welfare Work for Infants and Children. T. Hoffa.—p. 2436.
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**Significance of Liver in the Circulation.**—Hess emphasizes the importance of the liver as an organ, which protects the right heart from congestion.

**Physical Chemistry of Blood Sedimentation.**—Höber and Mond confirm and continue Fåhræus' investigations on blood sedimentation. The negative charge of the corpuscles is comparatively great in a solution of serum albumin, smaller in serum globulin, and smallest in fibrinogen. In pregnancy and other conditions with increased speed of sedimentation, more globulins than usual are adsorbed to the corpuscles. The hydrogen ion concentration in which the tendency of globulins to flocculate is maximal (isoelectric point of globulins), lies near that of the blood. Therefore their adsorption to the corpuscles makes the suspension less stable, than is the case with albumins. The influence of globulins is also partly due to their greater viscosity, which causes the corpuscles to cling together.

**Rôle of Antagonists in Voluntary Movements of Man.**—Wachholder concludes from electromyograms, that antagonists are not passive, though this does not mean that there could be no inhibitory impulses.

**Direct Test for Prognosis in Poliomyelitic Paralysis of Muscles.**—Erlacher introduces needles into the muscle, and determines the strength of faradic current necessary to induce a contraction. He concludes from his small number of tests, that cases which do not lose more than two thirds of the normal irritability during the first months, have a good prognosis.

**Relations of Pneumonia to Influenza.**—Elkeles finds that statistics do not point to any etiologic relation between influenza and lobar pneumonias occurring during epidemics of influenza. No influenza bacilli are found in the parenchyma of the lungs in these cases, though they are always present in typical lobular pneumonias of influenza. Experiments on animals show also fundamental differences.

**Treatment of Central Luxation of Hip Joint.**—Wassertrüding reports two favorable results obtained by extension with Steinmann's nail driven into the femur.

**Symptom-Free Children of Syphilitic Mothers.**—Patzschke recommends treatment even if the babies have no symptoms. One may individualize if the mother has only a positive Wassermann reaction without other symptoms.

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- Financial Distress of Tuberculosis Sanatoriums. C. Schelenz.—p. 1636.

**Roentgen Rays and Pneumoperitoneum in Gynecologic Diagnosis.**—Polano and Dietl find that a combination of roentgen rays with pneumoperitoneum is very valuable in the diagnosis of diseases of the pelvis. They describe the precautions which are necessary for good results.

**Abortive Treatment of Syphilis.**—Bruck finds it necessary to apply at least three series of neo-arsphenamin and mercury treatments, separated by from six to eight weeks, in cases of primary syphilis with negative Wassermann reaction.

**Lumbar Intraspinous Anesthesia.**—Seyffardt finds that it is harmful to remove spinal fluid before the injection.

**Pregnancy in Leukemia.**—Hausam reports a case of pregnancy in the fourth year of a myelogenous leukemia. Although there was a history of torpid hemorrhages after extraction of teeth, there was no abnormal bleeding from the uterus after delivery. During the pregnancy the patient felt very well, but died shortly after delivery. The child is so far (15 months) perfectly normal.



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## OBSERVATIONS AND REFLECTIONS ON THE ETIOLOGY OF PELLAGRA\*

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It would be useless to enumerate the various views advanced to explain the cause of pellagra. Most of them have been discussed repeatedly, editorially, and in special articles in *THE JOURNAL* during the last few years. The idea that the disease is due to a faulty diet has been held almost from the beginning by many of those investigating its nature. At first, there was very little positive evidence in support of this view; but the results of the preventive and feeding experiments conducted by Goldberger,<sup>1</sup> and his associates, in orphanages in the South and elsewhere, were sufficiently suggestive to convince these workers that pellagra is due to a lack of the proper kind of proteins in the diet.

Other observers in this country<sup>2</sup> besides ourselves<sup>3</sup> are not convinced that this explanation will account for certain epidemiologic observations. In addition, we have seen pellagra patients whose animal protein intake previous to the onset of the disease apparently was above criticism.

It is not easy to explain by the food deficiency theory why the disease should have increased so rapidly from 1909 to 1913, and then rapidly declined, so that now it is rare in localities where formerly it was very prevalent. It is difficult to believe that the diet of people living in an area as large as that of our Southern states has changed radically twice during a period of seven or eight years; and, even if we grant this possibility, this increase and decrease during a limited period of time fits in more readily with our knowledge of the course of an infectious disease.

It has been stated that this decrease in pellagra after 1913 is due to the fact that the average person in these communities received larger incomes and had better food; but it is doubtful whether the larger incomes have compensated for the decreased purchasing value of the dollar. The officials of the Public Health Service evidently had this in mind last spring when they predicted that there would be a great increase in pel-

lagra the past summer. The great increase did not occur, however, at least not in the localities we studied.

It is customary to say that a faulty diet may cause disease (1) through an insufficient amount of all essential substances, resulting in general malnutrition, or (2) from the lack of some one essential—vitamin, amino-acid or inorganic substance—the others being present in sufficient amounts. It is possible that excessive amounts of one or more of the essentials may make a diet faulty, even though the others are present in sufficient quantity. Thus, an excess of carbohydrates with just the necessary amount of proteins, or the reverse, may furnish an excellent culture medium in the intestinal tract for an organism which, under these circumstances, would become pathogenic because of the production of unusual amounts of toxins; while with a properly balanced diet such an organism would probably be inoffensive.

Hirschler<sup>4</sup> was apparently the first to observe that certain carbohydrates—sucrose, dextrin and starch—inhibited intestinal putrefaction, and this observation has been confirmed by others, including Herter,<sup>5</sup> Kendall,<sup>6</sup> and Rettger and Horton.<sup>7</sup> In the later work, microscopic and cultural methods were used in determining the changes in bacterial flora of the intestine caused by changes in diet. Thus, the results obtained by Goldberger in his preventive experiments do not disprove the possibility that pellagra may be due to an infectious agent; for it is obvious that the change to a larger amount of protein, with a decrease in carbohydrates, would make conditions less favorable for the development of an organism requiring large amounts of the latter substance.

The Italian investigators were probably the first to note changes in the intestinal flora of pellagra patients. They observed an increase in hyphomycetes, and supposed that these molds were in themselves toxic, or produced a toxin when grown on corn. They were never able to identify any one of these molds as a causative factor in pellagra.

Our general impression of the disease would lead us to the conclusion that pellagra is not a deficiency disease, comparable to beriberi and scurvy, but one in which a definite intoxication, arising most probably from the intestinal tract, forms the basis of the pathologic condition.

The point has been made repeatedly that the failure of physicians, nurses and other attendants of pellagrous patients to develop the disease indicates that it is not due to a specific organism. Those making this state-

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1. Goldberger, Joseph: Relation of Diet to Pellagra, *J. A. M. A.* **78**: 1676 (June 3) 1922.

2. Siler, J. F.; Garrison, P. E., and MacNeal, W. J.: Pellagra and Sewage Disposal, *Arch. Int. Med.* **19**: 683 (May) 1917.

3. Jobling, J. W., and Petersen, W. F.: Epidemiology of Pellagra in Nashville, *J. Infect. Dis.* **21**: 109 (Aug.) 1917.

4. Hirschler, A.: *Ztschr. f. physiol. Chem.* **10**: 306, 1886.

5. Herter, C. A.: *Brit. M. J.* **2**: 1847, 1897.

6. Herter, C. A., and Kendall, A. J.: *J. Biol. Chem.* **7**: 203, 1908.

7. Rettger, L., and Horton, G. D.: *Centralbl. f. Bakteriol.*, **1**, Orig. **73**: 362, 1914.



ment, however, apparently do not take into consideration the question of individual susceptibility, personal hygiene, food, etc. Thus, it is doubtful whether tuberculosis is more frequent among attendants in sanatoriums for tuberculous patients than in other hospitals. Brown<sup>8</sup> states that during the thirty-six years the Trudeau Sanitarium has been in existence only one among many hundreds of employees has developed tuberculosis despite the demonstrated fact that they were continually exposed to infection. He also states that for years no native of Saranac Lake (population about 5,000) has died of pulmonary tuberculosis. If the causative agent of tuberculosis were not so well known, Brown's observations might equally well be used to support the assertion that tuberculosis is not due to a specific organism. It is also well to remember that the attendants in leprosariums practically never develop leprosy.

It seems rather a curious fact that the influence of light on the development and progress of the disease has been almost completely ignored during the last few years, though it is a common observation that the skin lesions are most prevalent on the exposed parts of the body and develop usually in the spring or summer months, following exposure. The majority of our patients ascribed the skin changes to sunburn, and Enright<sup>9</sup> and Bigland<sup>10</sup> have recently referred in some detail to the influence of the sun on the skin lesions. We believe that such patients do better when kept in a dark room.

It is now eighteen years since Heinrich von Tappeiner<sup>11</sup> and his associates, Raab and Jodlbauer, observed that certain fluorescent dyes developed marked toxicity for infusoria when directly activated by light rays. These investigators developed the field to a considerable extent, noting the effect on laboratory animals, on tissues and ferments and on bacteria. Apart from the general biologic importance of these investigations, a certain clinical bearing was found, and the dermatologic field offered particularly alluring applications in the possible explanation of some of the still hidden causes of various dermatoses.

Among the problems attacked were those of fagopyrismus and hydroa aestivale. In the former, a fluorescent substance has been isolated from buckwheat which is able to sensitize animals to light,<sup>12</sup> while alcoholic soluble fluorescent and photodynamic substances have been isolated by Gay and McIver<sup>13</sup> from corn, rye, oats and buckwheat. In hydroa aestivale, Hausmann<sup>14</sup> was able to demonstrate the presence of an active photodynamic substance, hematoporphyrin, in the urine.

The suggestion that pellagra might be a photodynamic intoxication was made almost simultaneously by four different investigators: Hausmann,<sup>14</sup> Lode,<sup>15</sup> Horbaczewski<sup>16</sup> and Raubitschek.<sup>17</sup> Their experiments, also those of Umnus,<sup>18</sup> were made with photodynamic substances obtained from corn; but, since in this country

quite a number of those developing pellagra have been consuming only a minimum of corn products, we must obviously seek some other explanation. Nor must we fall into the error of assuming that the mere entrance of photodynamic substances into the intestinal tract is sufficient to set up a light sensitization, for chlorophyll (as shown by Hausmann, a strongly fluorescent and photodynamic substance), is, of course, a common constituent in the normal diet.

That human beings may be made hypersensitive to photodynamic substances is shown by the interesting experiment of Meyer-Betz,<sup>19</sup> who sensitized himself with hematoporphyrin. He found that exposure to sunlight caused marked edema and erythema of the exposed parts—face, hands, neck, etc.—indicating in a suggestive manner that a photodynamic intoxication can, under certain conditions, be induced in the human being. It is interesting to note that he remained hypersensitive for at least six weeks, though no traces of the sensitizing substance, hematoporphyrin, could be found after seventy-two hours.

For several years, we have been impressed with the possibility that pellagra may be due to a photodynamic substance produced by an organism located in the intestinal tract. The observations supporting the low protein theory may be readily explained by the assumption that this hypothetical organism can produce the light sensitizing substance only when growing in a favorable medium, consisting of an excess of carbohydrates. Such a theory would explain not only the skin manifestations of the disease, but also the results obtained with a high protein diet, and the epidemiologic observations made by ourselves and others. It would also explain why healthy individuals with a normal diet failed to develop the disease when fed with infected material.

The point has been made that negroes, because of their dark skin, should not be affected by pellagra if it is due to the action of a photodynamic substance. Those holding this view apparently believe that the dark skin affords complete protection against the light rays. Such is not the case, as those living in the South are aware, since negroes, though less susceptible than white people, also suffer from overexposure to the summer sun. We have found that dark colored mice are susceptible to the action of hematoporphyrin, though requiring larger doses than white mice; while Hess and his associates,<sup>20</sup> in their study of the influence of light in rickets, found that the ultraviolet rays protected both dark and white rats from this disease, but that the former required longer exposures to the rays. Thus, the protection afforded by a dark skin is relative, and not absolute.

These studies were begun in 1919 in Nashville, Tenn., but the disease became so rare that in 1922 the work was transferred to Memphis, Tenn. Here, conditions were little better than at Nashville. During the summers of 1920, 1921 and 1922, we saw only sixteen patients with active symptoms of pellagra, and, as the technic described below was not developed until the latter part of 1920, we might properly confine this report to the work done in the summers of 1921 and 1922, during which we saw only nine acute cases. This striking decrease in pellagra in the localities where we were working explains why we are making the present

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19. Meyer-Betz, F.: *Deutsch. Arch. f. klin. Med.* **112**: 476, 1913.

20. Hess, A. F.; Unger, L. J., and Pappenheimer, A. M.: *Proc. Soc. Exper. Biol. & Med.* **19**: 238, 1922.



incomplete report, as the expense and time entailed in further work does not seem justified at this time. We realize that the evidence submitted is not conclusive, but hope that others, more fortunately situated, may become sufficiently interested to make additional studies along these lines.

We first endeavored to extract photodynamic substances from the feces and urine, but without avail. It is known, of course, that certain of the bile pigments are fluorescent, and possibly photodynamic; but the suggestive character of some of our epidemiologic findings caused us to ignore these for the present.

Our next efforts were devoted to an attempt to isolate organisms able to produce photodynamic substances, and here we were more successful. In the beginning, it was thought best to concentrate our work on the fungi of the intestinal tract, as the Italian observers had noted an increase of these organisms in the feces

of pellagra patients. Raulin's medium<sup>21</sup> was used at first, but this was subsequently replaced by a medium used by Currie<sup>22</sup> for studying the production of citric acid by fungi. This synthetic medium was easily made, and we were able to make very thick seedings on the plates, since few of the intestinal bacteria will grow on it. For the purpose of limiting the number of organisms to be investigated, they were transferred from the plates to test tubes containing the Currie medium, to which had been added 3 per cent. potassium iodid, 1 per cent. starch and 2 per cent. agar. The potassium iodid and starch were added because mixtures containing a photodynamic substance, potassium iodid and starch turn blue when placed in a bright light, while the controls kept in the dark remain unchanged. Synthetic mediums containing no protein must be used for this purpose, as proteins inhibit the reaction. It was soon found that apparently any organism producing oxalic acid would give blue colonies on this special medium, and subsequently we found that oxalic acid itself was strongly photodynamic. This medium was of great assistance to us, however, for with its aid we were able to discard many of the organisms isolated.

The organisms giving blue colonies were then transferred to flasks containing a fluid medium of the same composition, placed in the incubator at 30 C. for two to three weeks, and then examined for fluorescence. Cultures showing fluorescence were finally examined for their photodynamic action. It was found that the fluorescence is brought out more strongly in the cultures

when the medium is rendered slightly alkaline. By the adoption of this technic, it is possible that we have missed organisms which belong to this group, but the large number isolated made it essential that we limit the scope of the work.

During the summer of 1920, when we were developing our technic, many of our plates were overgrown with either bacteria or fungi, but we obtained from the fungi isolated one strain that produced a strongly fluorescent substance. During the summer of 1921, we studied three acute cases and six so-called chronic cases. In some of the latter, the subjects had been free from the disease for a year; some presented doubtful recurrences; others, except for their clinical history, gave no indications that they had ever suffered from the disease. From this group, three positive cultures of the same organism were obtained; two pure cultures from the three acute cases and one mixed culture from

a doubtful case. The mixed culture in the fluid medium became actively fluorescent, but we were unable to separate the active strain. This difficulty was encountered in three instances, and will be appreciated by those who have worked with mixed cultures of fungi.

At Memphis, we studied five acute, four subacute and fifteen so-called chronic cases. Most of the latter group were examined because we could not obtain active cases. Of this group, two pure cultures and one mixed culture were obtained from the five acute cases, one pure culture from the four subacute cases, and one mixed culture from the fifteen so-called chronic cases.

During the fall of 1921, a patient with pellagra was admitted to the Presbyterian Hospital, New York. This case, while

atypical in some respects, presented symptoms which caused us to make a definite diagnosis of pellagra, and this diagnosis was confirmed by others who are familiar with the disease. In this case, the same fluorescent fungus was isolated repeatedly from the feces, and when the patient subsequently came to necropsy, the organism was isolated from the middle and lower portion of the small intestine and from the large intestine.

Thus, during the summers of 1921 and 1922, strains of fungi producing fluorescent substances were isolated from the feces in five of nine acute cases, including the New York case, one of six subacute cases, and two of twenty-three so-called chronic cases. In the latter group, some of the subjects had not presented any symptoms of the disease for more than a year. At Nashville and at Memphis, fifty nonpellagrous persons were studied, and in no instance did we isolate a

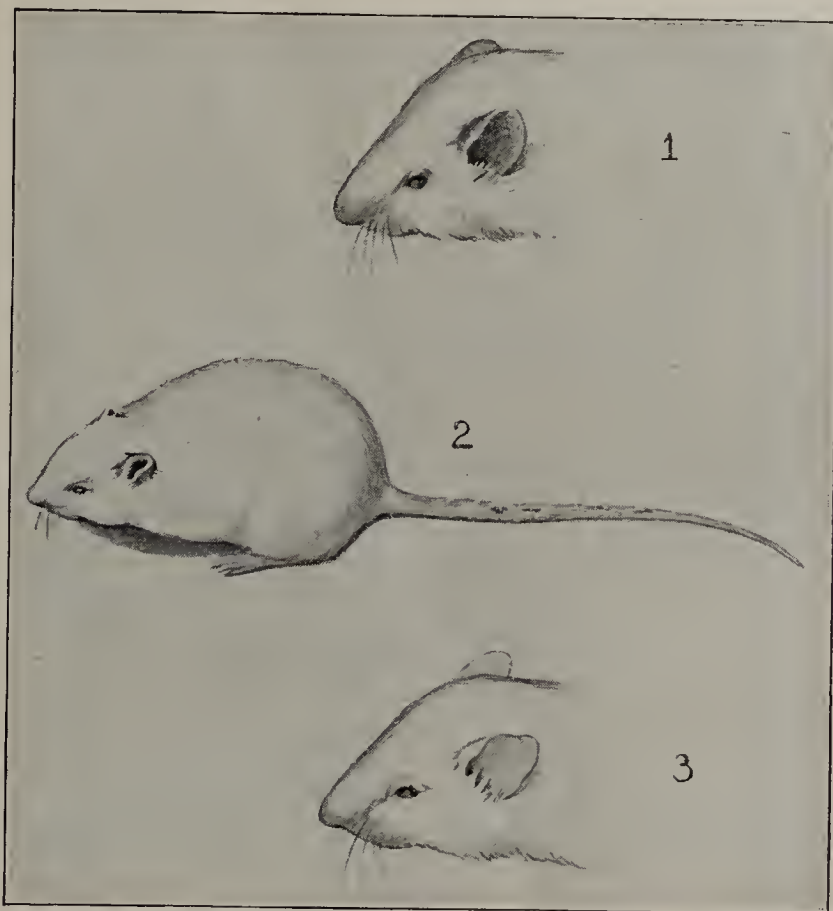


Fig. 1.—Appearance of ears, showing reddening and thickening following exposure to sun after two injections of photodynamic extracts.

Fig. 2.—Appearance following several injections of active substance and four days' exposure to bright light, showing scaly tail, loss of ears and some thinning of hair over face.

Fig. 3.—One of controls, kept in same cage during light exposures.

21. Lutz, L., and Guéguen, F.: *Bull. Soc. mycol. de France* **17**: 83, 1901.

22. Currie, J. N.: *J. Biol. Chem.* **31**: 15 (July) 1917.



fluorescent fungus. A series of individuals were studied in New York as controls on the case seen here, but all were negative.

The fungus apparently belongs to the *Aspergillus glaucus-repens* group. More intensive studies of its biologic properties are now being made in two separate institutions, with the idea of determining its identity. The fungus may prove to be a well known organism that becomes pathogenic only under certain limited conditions.

The fluid medium in which the fungus has been growing for from two to three weeks becomes light brown and is strongly acid in reaction. When the medium is made slightly alkaline, it becomes strongly fluorescent. Frequently, a red pigment is also produced. The fluorescent substance was soluble in nearly all of the lipid solvents. It can be readily extracted from the medium by means of ether or ethyl acetate. The medium must be acid in reaction at the time of extraction with the solvent. From the solvent, it can be easily removed by means of weak alkalis. In these alkaline washings, which are, of course, now free from most of the other constituents of the medium in which it has been growing, the fluorescence is very marked.

Photodynamic experiments were conducted with the extracts obtained with ether or ethyl acetate. The ether extracts obtained by extracting the cultures were evaporated over a small amount of sodium chlorid solution at a low temperature. The photodynamic action of the extracts thus obtained was tested first on the potassium iodid-starch mixture, and was found to be active in the light and inactive in the dark. When a series of mice were inoculated, those exposed to the light soon developed edema and reddening of the ears, and swelling and edema of the eyelids. In a few experiments, death quickly followed exposure to sunlight. If the inoculations were continued daily, with repeated exposure to bright light, the ears became gangrenous and dropped off, the tail became rough and scaly and there was some loss of hair from the face and head. The greatest difficulty encountered in these experiments was in determining the strength of the solutions used, for we had no way of standardizing them. Dr. Johnson showed that paramecia also were susceptible to the photodynamic action of these extracts. Attempts were made to infect the animals by feeding, but without success.

#### CONCLUSIONS

Our observations will not permit us to agree that in all cases of pellagra there was an insufficient amount of animal protein in the diet previous to the onset of the disease; but we do believe that the individuals observed probably consumed an excess of carbohydrates, and, for this reason, we favor the idea advanced above. Those conversant with the diet of people living in the Southern states must have been impressed with the excessive amount of carbohydrates consumed, and this appears to hold true for the warmer countries throughout the world. This does not mean that these people do not obtain a sufficient amount of animal protein.

We have given some of the results obtained during the last three years in the attempted development of a hypothesis which we believe will reconcile some of the opposed views about pellagra. It is not our desire to claim, or even to suggest, that we have discovered the cause of pellagra. We realize that such a claim could be made only after it had been demonstrated that the

organism could be isolated in the majority of a large number of pellagra cases, and that it does not occur in nonpellagrous individuals. The decrease in the disease renders this task impossible for us, so it was thought best to report the results we have obtained up to date, and let others, if they so desire, carry on the work.

## ROENTGENOGRAPHY OF URINARY TRACT DURING EXCRETION OF SODIUM IODID\*

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There is need of a simple and painless method of depicting the urinary tract, bladder, kidneys and ureters. By the use of catheters and various opaque



Fig. 1.—The patient received 200 c.c. of a 10 per cent. solution of sodium iodid intravenously. The roentgenogram made two hours later revealed a perfect outline of the full bladder.

mediums, success has been attained so far as the bladder, ureters and pelves of the kidney are concerned. Cystography and urography, while of great importance, are not without drawbacks and limitations. The use of the urethral or ureteral catheter is subject to obvious objections from both the physician's and the patient's standpoint. Technically, ureteral catheterization is at times very difficult, and it often subjects the patient to excruciating pain and occasionally to serious reactions. While pyelography may clearly delineate the renal pelves, it may fail to reveal the outline of the kidney itself. In surgical and medical diseases of the kidney, information concerning the size and location of these organs is of paramount interest. In nephritis, for example, it would be of decided value to be able to ascertain definitely during the patient's life whether his kidney is large, small or contracted, or of normal size. While the kidneys may be clearly outlined by inducing a pneumoperitoneum, and possibly by injecting air locally into the renal

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regions, these procedures, for obvious reasons, are not likely to be practiced generally.

It occurred to one of us (L. G. R.) that if, in roentgenography of the urinary tract, advantage could be taken of the fact that sodium iodid, after its introduction into the body, is normally excreted in the urine, roentgenograms of the kidneys, ureters and bladder might be secured without the need of catheterization. An ideal opportunity for the clinical testing of this idea presented itself in the section on dermatology and syphilology of the Mayo Clinic, where one of us (E. D. O.) was utilizing intravenously from 50 to 250 c.c. of a 10 per cent. solution of sodium iodid in the study of the pharmacology and therapeutics of iodids. This circumstance made possible an immediate and direct clinical study, eliminating the necessity of carrying out time-consuming preliminary investigations on animals. The patients were informed of our interest in this problem, and many of them volunteered to undergo the roentgen-ray studies.

#### THE INTRODUCTION OF VARIOUS MEDIUMS IN THE URINARY TRACT

Voelcker and Lichtenberg,<sup>1</sup> in 1906, were the first to report the use of an opaque roentgenographic medium, injected into the pelvis of the kidney for the purpose of determining the pelvic outline. Colloidal silver, the medium suggested by them, was dirty and expensive, and it often caused severe reactions. In 1915, Burns<sup>2</sup> reported very satisfactory results with thorium nitrate. Various other chemical compounds were suggested, but none were satisfactory. The proprietary preparations were expensive and often caused marked reac-



Fig. 2.—The patient received 135 c.c. of a 10 per cent. solution of sodium iodid intravenously. The roentgenogram made one and one-half hours later contained shadows of the pelvis, the major calices and a portion of the ureter on both sides.

tions. The work of Braasch and Mann<sup>3</sup> has demonstrated that practically all the silver compounds, when

retained in the pelvis of the kidney or injected under pressure, produce areas of cortical necrosis. In some instances, it has been possible to find definite deposits of the metal in the renal cortex. Praetorius,<sup>4</sup> who suggested the use, as a medium, of a preparation claimed to contain colloidal silver iodid, cites twelve deaths, previous to 1917, from the use of colloidal silver. Later, Schüssler<sup>5</sup> and Barreau<sup>6</sup> reported severe reactions

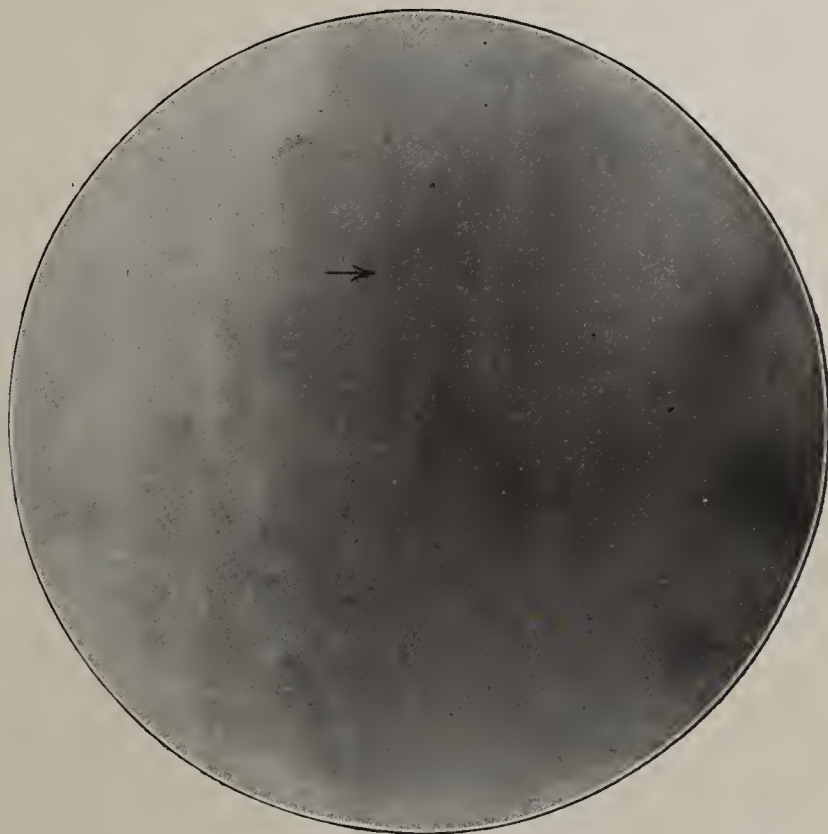


Fig. 3.—The patient received 100 c.c. of a 10 per cent. solution of sodium iodid intravenously. The roentgenogram made one hour later contained a definite outline of the pelvis of the left kidney, with the ureter from 4 to 6 cm. distant from the kidney hilus.

from the use of the preparation claimed to contain colloidal silver iodid.

Kelly and Lewis,<sup>7</sup> in 1913, were the first to suggest the use of an iodid as a medium. They recommended silver iodid emulsion. Sodium iodid as a medium in roentgenography was introduced by Cameron<sup>8</sup> in 1918. The striking lack of toxicity of sodium iodid has long been known, but not fully appreciated. Enormous doses have been used clinically by syphilologists in the treatment of syphilis. Experimentally, the lack of toxicity of the iodids was illustrated recently by Weld,<sup>9</sup> who found that toxic effects did not follow the administration intravenously of 50 c.c. of a 25 per cent. solution to dogs weighing 6 kg. Weld suggested the use of sodium bromid, which is now generally used for depicting the renal pelvis and ureters in urologic examinations at the Mayo Clinic. Sodium bromid causes fewer reactions than sodium iodid, but does not give such clear roentgenographic outlines. Sodium

4. Praetorius, G.: Pyelographie mit kolloidalem Jodsilber ("Pylon"), *Ztschr. f. Urol.* **13**: 159-168 (April) 1919.

5. Schüssler, H.: Zur Pyelographie mit "Pylon," *München. med. Wehnschr.* **67**: 750-751 (June 28) 1920.

6. Barreau, E.: Zur Frage der Pyelographie, *Ztschr. f. Urol.* **15**: 134-144, 1921; Ueber Pylon, *ibid.* **15**: 507, 1921.

7. Kelly, H. A., and Lewis, R. M.: Silver Iodide Emulsion—a New Medium for Skiagraphy of the Urinary Tract, *Surg., Gynec. & Obst.* **16**: 707-708, 1913.

8. Cameron, D. F.: Aqueous Solutions of Potassium and Sodium Iodids as Opaque Mediums in Roentgenography, Preliminary Report, *J. A. M. A.* **70**: 754-755 (March 16) 1918; A Comparative Study of Sodium Iodid as an Opaque Medium in Pyelography, *Arch. Surg.* **1**: 184-214 (July) 1920.

9. Weld, E. H.: The Use of Sodium Bromid in Roentgenography, *J. A. M. A.* **71**: 1111-1112 (Oct. 5) 1918; Toxicity of Pyelographic Mediums, Report of a Death Following the Use of Thorium Nitrate, *J. Urol.* **3**: 415-426 (Oct.) 1919. Renal Absorption with Particular Reference to Pyelographic Mediums, *Med. Clin. N. America* **3**: 713-731 (Nov.) 1919.

1. Voelcker, F., and Lichtenberg, A.: Pyelographie (Roentgenographie des Nierenbeckens nach Kollargolfüllung), *München. med. Wehnschr.* **53**: 105-107, 1906.

2. Burns, J. E.: Thorium, a New Agent for Pyelography, Preliminary Report, *J. A. M. A.* **64**: 2126-2127 (June 26) 1915.

3. Braasch, W. F., and Mann, F. C.: Effects of Retention in the Kidney of Media Employed in Pyelography, *Am. J. M. Sc.* **152**: 336-347 (Sept.) 1916.



bromid, like sodium iodid, is of such low viscosity that it often runs from the pelvis and ureter before the roentgenogram is completed.

METHOD OF ADMINISTRATION OF SODIUM IODID

*Intravenous Administration.*—The method of intravenous administration of sodium iodid has been employed in the section on dermatology and syphilology since 1918. The patient is first given 15 grains (about 1 gm.) of potassium iodid by mouth, three times a day for two days, in order to determine whether there is an idiosyncrasy to the drug. If no symptoms of acute iodism occur, the intravenous injection of a 10 per cent. solution is begun, the third day.



Fig. 4.—The patient received 100 c.c. of a 10 per cent. solution of sodium iodid intravenously. The roentgenogram made one and one-half hours later revealed a perfect outline of a full bladder, and an outline of the pelvis of the left kidney with a suggestion of the calices and the ureter for a distance of from 3 to 4 cm. below the hilum of the kidney. The right kidney area was obscured by gas in the colon.

Various dosages have been employed, ranging from 5 to 20 gm. of a 10 per cent. solution of chemically pure sodium iodid. As Osborne has pointed out, 10 gm. may be given to practically every patient without untoward symptoms, provided the injection is not too rapid, that is, not completed in less than four or five minutes. With a dose of more than 10 gm., symptoms appear, probably due to osmotic changes resulting from large amounts of the hypertonic salt solution. It would seem that 10 gm. is a fair dose for the average routine case. Naturally, the usual contraindications to iodids apply here; that is, patients with tuberculosis,

adenomatous thyroids, exophthalmic goiter and marked debility are not good subjects for this form of treatment. Generally speaking, our results following the intravenous administration of sodium iodids may be summarized thus:

1. Satisfactory roentgenograms of the bladder were secured in practically every case with doses of from 5 to 20 gm. intravenously.

TABLE 1.—IODIN IN THE URINE AFTER SODIUM IODID INTRAVENOUSLY

Time After	Sodium Iodid, 5 Gm.			Sodium Iodid, 10 Gm.			Sodium Iodid, 20 Gm.		
	Iodin Excreted			Iodin Excreted			Iodin Excreted		
	Urine, C.c.	Per Cent.	Mg. per 100 C.c.	Urine, C.c.	Per Cent.	Mg. per 100 C.c.	Urine, C.c.	Per Cent.	Mg. per 100 C.c.
15 min.	9.5	1.2	5.6	43.0	1.2	2.5	55.0	0.5	1.6
30 min.	17.5	3.5	8.5	21.5	1.9	7.8	40.0	0.6	2.8
45 min.	16.5	2.9	7.4	21.5	2.5	10.0	26.0	0.5	3.8
1 hr.	14.0	2.0	6.3	22.5	2.7	10.2	25.5	1.0	7.0
2 hrs.	77.5	8.8	4.9	95.0	8.7	7.7	146.0	8.4	9.8
3 hrs.	54.0	5.4	4.4	106.0	5.2	4.2	104.0	7.7	12.7
4 hrs.	43.0	6.4	6.2	93.0	2.5	2.2	133.0	10.4	13.3
6 hrs.	....	...	...	25.0*	1.9	5.9	....	...	...
7 hrs.	218.0	16.5	3.2	....	...	...	225.0	15.6	11.8
8 hrs.	....	...	...	102.0	8.7	7.2	....	...	...
18 hrs.	490.0	19.5	1.6	473.0	17.6	3.2	375.0	23.4	10.5
24 hrs.	245.0	10.0	1.7	590.0	6.6	0.9	151.0	8.1	7.5
48 hrs.	1055.0	14.7	0.59	965.0	15.5	1.4	1080.0	13.9	1.2
72 hrs.	960.0	2.8	0.12	1005.0	4.6	0.3	1030.0	3.7	0.6
96 hrs.	995.0	0.5	0.02	1120.0	0.3	0.02	975.0	0.1	0.01
120 hrs.	1010.0	Trace	....	945.0*	Trace	....	950.0	Trace	....
In 24 hrs.	....	76.2	....	....	59.5	....	....	76.2	....
In 48 hrs.	....	90.9	....	....	75.0	....	....	90.1	....
In 72 hrs.	....	93.7	....	....	79.6	....	....	93.8	....
In 96 hrs.	....	94.2	....	....	79.9	....	....	93.9	....

\* Approximately four fifths of this specimen was lost.

2. Ten gram doses of sodium iodid intravenously gave fair roentgenograms of the kidneys and ureters in approximately 50 per cent. of the cases, and occasionally of the liver and spleen.

3. The best roentgenograms of the upper urinary tract and of the spleen and liver were secured with the use of large doses, that is, from 15 to 20 gm.

The time elapsing between the administration of the sodium iodid and the taking of the roentgenogram is of vital importance. Table 1 shows the amount and

TABLE 2.—URINARY EXCRETION OF IODIN AFTER SODIUM IODID BY MOUTH

Time After	Sodium Iodid, 1 Gm.			Sodium Iodid, 5 Gm.			Sodium Iodid, 20 Gm.		
	Iodin Excreted			Iodin Excreted			Iodin Excreted		
	Urine, C.c.	Per Cent.	Mg. per 100 C.c.	Urine, C.c.	Per Cent.	Mg. per 100 C.c.	Urine, C.c.	Per Cent.	Mg. per 100 C.c.
Before	Sample	Trace	....	Sample	Trace	....	Sample	Trace	....
1 hr.	59.0	5.3	0.76	77	7.3	4.03	296	10.9	6.34
2 hrs.	46.0	8.6	1.58	52	7.1	5.80	122	6.2	8.42
3 hrs.	52.0	7.1	1.29	119	9.9	3.51	63.5	1.6	4.24
4 hrs.	45.5	6.3	1.32	212	6.8	1.35	....	...	...
6 hrs.	....	...	...	365	18.5	2.14	252	4.4	2.97
10 hrs.	300	24.0	0.75	226	11.0	2.06	886	30.9	5.9
24 hrs.	470	26.7	0.53	433	23.7	2.32	734	23.6	5.4
48 hrs.	910	12.6	0.13	843	12.1	0.61	1120	14.2	2.1
72 hrs.	....	....	....	895	2.4	0.10	955	5.7	0.8
96 hrs.	....	....	....	990	0.4	0.01	885	0.2	0.04
120 hrs.	....	....	....	1120	Trace	Trace	1060	Trace	Trace

concentration of iodine in the urine at varying intervals following the intravenous administration of 5, 10, and 20 gm. doses of a 10 per cent. solution of sodium iodid. The highest point of concentration following a dose of 5 gm. is in the second fifteen minute interval, when 8.5 mg. of iodine was excreted in each cubic centimeter of urine. With a dose of 10 gm., this amount rose to 10.2 mg. of iodine for each cubic centimeter of urine during the third fifteen minute interval, and following the 20 gm. dose, to 12.7 mg. during the second hour and 13.3 mg. during the third hour. From



these data, it is seen that the roentgenograms should be taken one-half hour, one hour and two or three hours after doses of 5, 10, and 20 gm., respectively. Our best results have been obtained by following this procedure, based on an actual determination of the rate of excretion of sodium iodid.<sup>10</sup>

*Administration by Mouth.*—It was at first thought that roentgenograms of the urinary tract, following administration of sodium iodid by mouth, would be of no value because of the shadows cast by the drug in the stomach and in the small intestine. The contrary has been shown, however, when the proper technic is employed and attention is paid to the time interval between the administration of the iodid and the making of the roentgenogram. Satisfactory roentgenograms have been obtained at one and two hour intervals following a single large dose of 10 gm. of sodium iodid. This method, however, is not applicable to routine cases because of the local gastric upset following the ingestion of such large amounts of the salt. Our best results have been obtained by administering 3 gm. of sodium iodid hourly for three hours and taking the roentgenograms from one hour to two hours after the last dose. The rationale of this procedure is shown in Table 2. The urinary concentration of iodine following the oral administration of sodium iodid becomes highest during the one hour to three hours after the ingestion of from 1 to 5 gm. of the salt.

The patient is prepared in the routine manner for roentgen-ray examination of the urinary tract. At 8 a. m. he is instructed to take the first powder, consisting of 3 gm. of the sodium iodid, well diluted in from one to two glasses of water. He is instructed to empty the bladder at this time and not to pass more urine until the examination is completed. At 9 a. m. and at 10 he repeats the procedure, and at 11 the first roentgenogram is made, after which he is instructed to void as much urine as possible. This is measured and a second roentgenogram is made. It may be that the administration of large doses of sodium iodid will yield uniformly better results, but such has not been our experience. The employment of less than 3 gm. for each dose has not yielded satisfactory results except in a few instances.

In case the bladder alone is to be studied, the administration of a single dose of from 3 to 5 gm. of sodium iodid, without previous preparation, is all that is necessary. In this case the patient should be instructed

not to void and the roentgenogram should be taken three hours after the ingestion of the drug. Results following the oral administration of sodium iodid may be summarized thus:

1. Very satisfactory roentgenograms were secured of the kidneys, pelvis of the kidney, ureters and bladder in approximately 50 per cent. of cases, with repeated doses.

2. In a few cases the liver and spleen were also strikingly outlined.

3. Uniformly excellent results were obtained in the roentgenography of the bladder, following the repeated doses and after a single dose.

#### ROENTGENOLOGIC TECHNIC

In the first studies the technic routinely employed in the examination of the kidneys, ureters and bladder was used. Preliminary control roentgenograms were made before the administration of the sodium iodid. Plates 5 by 7 inches were used, without intensifying

screens, one roentgenogram being made of each kidney area and one of the bladder area. A medium focus, standard Coolidge tube was used, with 60 kilovolts, 50 milliamperes, an average distance of 67.5 cm. from the target to the plate, and the time was varied from two to eight seconds according to the thickness of the patient. An aluminum compression cap, 12.5 cm. in diameter, fitted over the bottom of the cone, was clamped down as far as could be comfortably borne by the patient. Fairly satisfactory roentgenograms of thin, normal and even moderately stout subjects were obtained by this technic. The plates were marked with the patient's registration number and with the number of hours intervening since the administration of the sodium iodid. In

some cases a series of roentgenograms was made at varying intervals after the administration. Another series of studies was made using duplitized films in intensifying screens, varying the kilovoltage and milliamperage according to the thickness of the subject, with uniformly better results, particularly in stout subjects. Control films were also made. Still another series was made using 14 by 17 inch duplitized films in intensifying screens with the Potter-Bucky diaphragm. A single film was made in a few cases; in the majority, two films were made, one high, to include the complete kidney area, and the other to include the bladder area. In this series, many films were made after the subjects had held the urine the allotted time; after they had emptied the bladder and the amount voided had been measured, a second film was made and marked with the amount voided. When actual retention occurred, it was depicted in the roentgenogram. The best uniform results were obtained with the Potter-Bucky diaphragm technic.

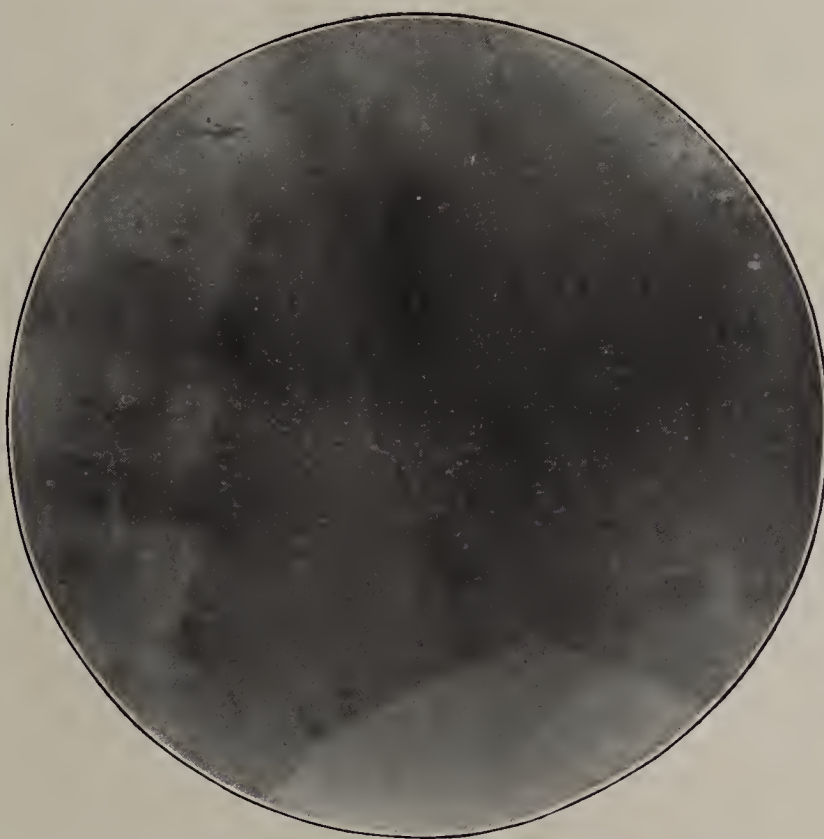


Fig. 5.—The patient received 100 c.c. of a 10 per cent. solution of sodium iodid intravenously. The roentgenogram made one hour later contained a definite shadow of the pelvis of the left kidney and the ureter for a distance of from 4 to 6 cm. below the hilum of the kidney. There was also a definite suggestion of the major calices.

10. These data and those dealing with the oral administration have been taken from work already published and work now in the process of publication by Osborne on the general subject of the pharmacology and therapeutics of iodids (Osborne, E. D.: Iodin in the Cerebrospinal Fluid, with Reference to Iodid Therapy, J. A. M. A. 76: 1384-1386 (May 21) 1921; Contributions to the Pharmacology and Therapeutics of Iodids, *ibid.* 79: 615-617 (Aug. 19) 1922; Contributions to the Pharmacology and Therapeutics of Iodids, II, to be published).



## INTERPRETATION OF THE RESULTS

In some of the films and plates, because of gas in the colon or because of the thickness of the patient, it was not possible positively to identify the kidney and other solid organs. On the majority of the films



Fig. 6.—The patient received 100 c.c. of a 10 per cent. solution of sodium iodid intravenously. The roentgenogram made one hour later revealed a definite shadow of the partially filled bladder. The density of the kidneys, the spleen and the lower margin of the liver appeared to be increased over the normal. The pelvis of both kidneys and the ureters for a distance of from 4 to 6 cm. from the hilum of the kidney were definitely outlined. On the right, there was a suggestion of the lower major calices.

and plates, the shadows of the kidneys, the lower margin of the liver and the spleen were sharply outlined, and it was our impression that, comparing the control plates and films with those made after the administration of the sodium iodid, there was a slight increase in the density of the shadow cast by these organs in the second plates and films of the series.

The pelvis of the kidney filled with iodid solution to varying degrees and the ureters could be traced in a number of instances, while in a few there was even a suggestion of the calices. In all of the plates and films the bladder was distinctly outlined and, as we have mentioned, retained iodid solution could be seen in patients with urinary retention. Obviously, only some of the better plates are shown in the accompanying illustrations.

## COMMENT

The method described offers numerous possibilities in the field of research, not only with regard to the urinary tract, but also with regard to other systems, organs and tissues. We are firmly convinced that

this investigation will serve as a stepping stone in other fields of study. The method affords an approach to the study of the physiology of the bladder, its form and position under varying degrees of distention, and the phenomena associated with distention and with emptying. It should also prove of decided value in the study of pathologic conditions of the bladder, such as diverticula, tumor and diseases secondary to disturbances in its innervation, or to obstruction in the lower urinary tract, such as stricture and enlarged prostate. In the study of the kidneys, the success of the method is only partial. It will be of assistance in a limited way, especially in determining the size, shape and position of these organs. It is too early and our results are too uncertain to determine whether the method has any value in the study of the liver and spleen.

Much is offered by this method in the study of the vascular system. Under the fluoroscope, the cephalic vein has the appearance of a steel wire, from the point of injection of the iodid at the elbow to the juncture of the cephalic vein with the subclavian. This has been noted following the use of 10 and 20 per cent. solutions of sodium iodid. In all probability, with variations in the technic, important results will be obtained with regard to the venous returns and the peripheral arterial circulation. In the study of aneurysm and of arteriovenous anastomosis, it should also be of value.

## CONCLUSIONS

1. By the method described, it is possible to obtain roentgenograms of the urinary tract during the excretion of sodium iodid following its intravenous or oral administration.



Fig. 7.—The patient received three 3 gm. doses of sodium iodid by mouth. Roentgenograms were made two hours after the last dose, and a shadow of the full bladder was obtained. The patient voided 125 c.c. of urine, and a roentgenogram was made which revealed retention that had not been suspected clinically. Further clinical study revealed the existence of a cord bladder.

2. The method uniformly gives excellent and accurate shadows of the urinary bladder and renders reliable information relative to its size, shape and location.

3. It has been partially successful in depicting the renal pelvis and the ureters in a limited number of cases.



4. In a number of cases it assists in revealing the kidney itself through intensifying the renal shadow.

5. It has been proved a success in revealing the existence of residual urine in the bladder and in furnishing approximate information of the amount, thus eliminating the necessity of catheterization and its attendant dangers of infection.

6. Oral administration of the drug will prove satisfactory for routine use in making roentgenograms of



Fig. 8.—The patient received one dose of 5 gm. of sodium diiodid by mouth, and a roentgenogram was made three hours after the ingestion of the drug. A perfect outline of the full bladder was revealed.

the bladder, while for shadows of the ureters and kidneys intravenous injection of large doses of sodium iodid is desirable.

## ACUTE BARBITAL (VERONAL) POISONING

### REPORT OF CASE WITH FATAL OUTCOME

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Acute poisoning from barbitol is apparently becoming more common in this country. This is probably due to the fact that the drug is so easily obtained without a physician's prescription. It is also due to the increase in the number of persons who seek hypnotic drugs in order to procure sleep; for it seems that the symptom of insomnia is becoming more common among all classes of our population.

That serious symptoms may arise from overdosage or prolonged use of barbitol does not seem to be generally recognized even by the profession, but that this is so is attested by the cases reported in recent medical literature by Littell,<sup>1</sup> Hassin and Wein,<sup>2</sup> Taub<sup>3</sup> and Macleod.<sup>4</sup> Boenheim<sup>5</sup> states that, in a series of 286 cases of acute poisoning observed in Sick's service at

Stuttgart in thirteen years, barbitol was the drug taken in 5.7 per cent. of the cases, and five of the patients died. All of these had taken barbitol in excess of 10 gm.

Acute barbitol poisoning, in the absence of a history, may be easily mistaken for a number of other diseases giving rise to comatose states. This is especially true of epidemic (lethargic) encephalitis and certain cases of meningovascular syphilis. The case here reported illustrates most of the salient features in the symptomatology.

### REPORT OF CASE

*History.*—R. H. M., a man, aged 39, married, white, an American, was admitted to the Anaheim Hospital, Oct. 16, 1921, in a state of profound coma. Friends who accompanied the patient stated that he had been found in a shack in the oil fields in this condition, and it was thought that possibly he had been overcome by carbon monoxid gas from a leaky gas stove used to heat the shack. Search of the patient's effects revealed a box containing twenty 5-grain (0.3 gm.) tablets of barbitol, and a note to his wife expressing his intention of committing suicide. The patient's wife said he had always been in good health except for an attack of influenza in February, 1921, following which he had been subject to many "colds" and occasional attacks of mental depression. During the summer of 1921, his work had been very arduous, and he had undergone a good deal of mental strain.

Four weeks prior to admission, he consulted a physician on account of insomnia, and the latter prescribed barbitol, 5 grains, to be taken at bedtime. He took one tablet each night for a week. At the end of the week, he had the prescription refilled, and he took two tablets each night for another week. Two weeks before admission, he went on a vacation, but he could not enjoy it because of insomnia, so he returned home after three days. October 11, he consulted another physician, who prescribed barbitol. He also bought a box of barbitol himself in Pasadena. His wife stated that he was at home every day for the six days preceding admission, and he appeared to be in normal health except that he looked worn out and was quite depressed because of insomnia. She said that he had taken six or seven of the tablets each day for the five days preceding his admission to the hospital. October 16, he resumed his work. That afternoon he was found unconscious and was brought to the hospital.

*Physical Examination.*—The patient was well developed. He was in profound coma. The temperature was 101 F. The face was cyanosed and the breathing stertorous, with the mouth open and the maxilla drawn down almost on the chest. The tendon reflexes were very lively. Muscular rigidity was marked. The pupils were round and equal, and reacted to light and to painful stimuli, such as pinching the neck. Hippus was present. No nystagmus was noted. The fundus oculi was normal. The Babinski sign and variants were negative on both sides, as was knee and ankle clonus. The cremasteric reflexes were present. The epigastric and abdominal reflexes were not obtained. At intervals, the patient moaned and moved the limbs. Shouting in his ears elicited no response. Painful stimuli of any degree failed to rouse him. Strong ammonia applied to the nostrils produced no defense movements or wrinkling of the face.

The radial pulse rate was 100. Both radial pulses were full, equal and regular. The blood pressure was: systolic, 145; diastolic, 95. The heart showed no abnormalities. At intervals, there was profuse perspiration. Respirations were 30 a minute, changing at times to the Cheyne-Stokes type. There was marked dyspnea and diaphragmatic breathing. Tracheal râles were heard over the lungs. The mouth was open, the tongue swollen and congested. The patient was able to swallow fluids. Mucus tended to collect in the throat, and increased the degree of dyspnea and cyanosis already present. The abdomen was negative. The urine and feces were passed involuntarily.

*Laboratory Data.*—Examination of the blood revealed: erythrocytes, 4,450,000; hemoglobin (Dare), 93; smear, nor-

1. Littell, J. J.: Veronal (Barbitol) Poisoning, J. A. M. A. 77: 1333 (Oct. 22) 1921.  
2. Hassin, G. B., and Wien, M. S.: Case of Acute Veronal (Barbitol) Poisoning Simulating Epidemic ("Lethargic") Encephalitis, J. A. M. A. 75: 671 (Sept. 4) 1920.  
3. Taub, S. J.: Acute Veronal Poisoning, J. A. M. A. 74: 459 (Feb. 14) 1920.  
4. Macleod, Ernest: Med. Rec. 98: 985 (Dec. 11) 1920.  
5. Boenheim, F.: Acute Barbitol Poisoning, Med. Klin. 17: 1263 (Oct. 16) 1921; abstr., J. A. M. A. 78: 76 (Jan. 7) 1922.



mal; leukocytes, 7,600; carbon monoxid hemoglobin, absent; differential leukocyte count: polymorphonuclears, 68 per cent.; small mononuclears, 25; large mononuclears, 2; eosinophils, 1; transitionals, 4; blood Wassermann test, negative; blood culture, negative; chemical analysis of blood: creatinin, 2.75 mg.; uric acid, 3.1 mg.; urea nitrogen, 19 mg.; nonprotein nitrogen, 39 mg.; chlorids, 0.7 mg.; blood sugar, 0.12 per cent.

Cerebrospinal fluid examination revealed: Wassermann, Nonne, Noguchi and Ross-Jones tests, negative; cell count, 8; colloidal gold curve, negative. The urine and cerebrospinal fluid contained no hematoporphyrin. Urinalyses, October 16, 17, 18 and 19, were all completely negative.

*Clinical Notes.*—October 17, the patient's general condition was much the same. Increasing difficulty in respiration was relieved by oxygen inhalations. The patient moved his head more than on the day of admission. A lumbar puncture did not cause any movement of the patient, nor did it rouse him in the least degree from coma. Feces and urine were passed involuntarily. The temperature range in twenty-four hours was from 99 to 103.8 F.

October 18, the temperature rose to 104.5 F. at 8 p. m., and remained high all day. The muscles were now flaccid. The limbs took the position determined by gravity. The tendon reflexes were now diminished. Cyanosis was marked at times, and there was much tracheal rattling. Coarse mucous râles were heard throughout both lungs. Dyspnea was increasing. The twenty-four hour temperature range was from 99.5 to 104.5 F.

October 19, the patient was in very poor condition, sweating profusely, with extreme dyspnea and cyanosis. Oxygen inhalation failed to give relief. At noon, breathing was definitely of the Cheyne-Stokes type, and the lungs were full of mucous râles. The patient died at 3:10 p. m.

*Treatment.*—Frequent inhalations of aromatic spirits of ammonia were ordered; strychnin sulphate one-thirtieth grain, hypodermically, every four hours and camphor in oil hypodermically, as required. Hot coffee enemas, 6 ounces (178 c.c.)

Blood and serologic tests ruled out syphilis and carbon monoxid poisoning.

Urinalysis and blood sugar examination excluded diabetes. The previous history of good health and freedom from bad habits practically excluded brain tumor, alcoholism and kidney disease.

History and physical examination eliminated trauma.

Carbon monoxid poisoning seemed a plausible explanation for the symptoms at the time of admission, but a more detailed history and the negative blood examination vetoed this opinion.

Epidemic encephalitis was simulated very closely, but the definite history of ingestion of large amounts of barbital, together with the extreme degree of coma, which is not the rule in epidemic encephalitis, led to a definite diagnosis of barbital poisoning.

This case, so far as I can ascertain, is the only one reported in recent American medical literature which had a fatal outcome.

## AN OPERATION FOR INGROWING TOE NAILS\*

GROVER C. NEY, M.D.

BALTIMORE

Ingrowing toe nail is a very common disorder. It is caused either by tight fitting shoes or by the bad practice of cutting the angles of the nails, allowing the sharp corners to jut into the soft parts, producing an eroded area that soon becomes infected. This condition usually occurs on the mesial side of the great toe, and less commonly the side near the second toe. Fre-

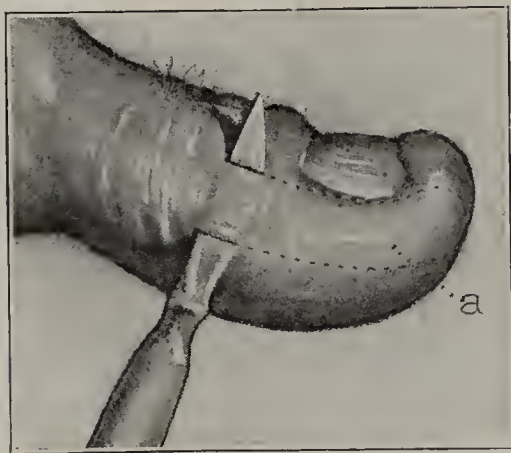


Fig. 1.—a, superolateral pedicle graft.

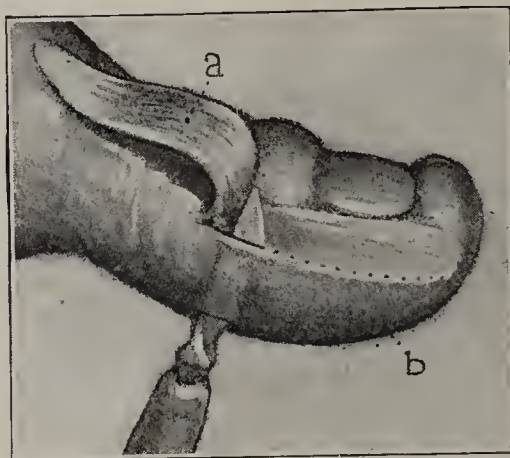


Fig. 2.—a, superolateral pedicle graft thrown back; b, inferolateral pedicle graft.

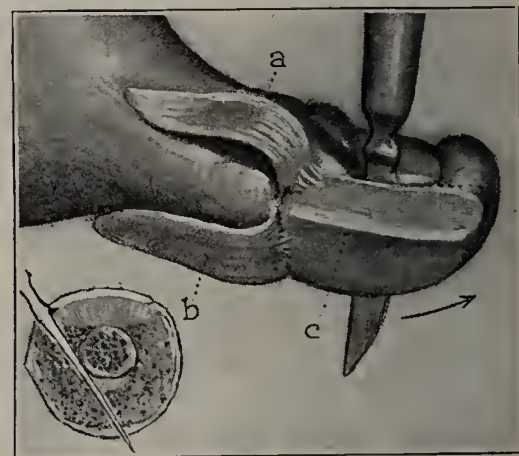


Fig 3.—a, b, two pedicle grafts laid back for protection; c, knife inserted obliquely to excise tissue; inset, direction in which knife should be inserted.

every six hours, were prescribed. Sodium bicarbonate solution, 3 per cent., by proctoclysis, was given every other hour. Fluids were given by mouth. The colon was washed out with high soda enemas, morning and evening. Oxygen inhalation was prescribed as required, for dyspnea and cyanosis, and caffein sodiobenzoate, 7 grains (0.46 gm.) hypodermically, also as required. Tepid sponge baths were given frequently to reduce temperature, and on account of the sweating.

### COMMENT

It was estimated that the patient had taken more than 300 grains (20 gm.) of barbital in a period of less than four weeks, 175 grains (11.6 gm.) of which was taken four or five days preceding admission. On admission, the usual conditions giving rise to coma had to be considered; namely, cerebral hemorrhage, alcohol and drug poisoning, epidemic encephalitis, carbon monoxid poisoning, brain tumors, diabetic coma, cerebral syphilis, uremia and unrecognized brain injury.

quently the nail is markedly convex, and the edge curved toward the toe, cutting into the flesh and producing an erosion. The toe becomes not only painfully inflamed, but also thickened, as a result of the nail's acting as an irritant.

The palliative treatment is effective, provided the soft parts have not become eroded or infected. Even after recovery from the palliative procedures, the condition is prone to recur. Most of the operations for ingrowing toe nails have to do with the removal of a portion of the nail. The operation commonly performed consists of excising a V-shaped portion with the apex at the root of the matrix of the nail. This wedge contains the inflamed, tender tissue, and a portion of the nail with its underlying matrix.

This operation has several objections. It denudes an area which, owing to its location anatomically

\* From the Surgical Clinic of the Hebrew Hospital.



and physically, is slow to heal. Some cases take from two to three months to epidermatize completely. If the operator is not thoroughly experienced with the procedure, the matrix is not completely removed, the nail grows, and the patient has a recurrence of the ingrowing toe nail. After the wound is completely healed, a portion of the nail remains which has an irregular contour, and is bothersome.

The operation here described is done solely on the soft parts, and the nail is not disturbed. In seventy-five cases there has been no recurrence. A tourniquet is placed around the base of the toe for two purposes: to make the field bloodless, and to act as a partial nerve block. The side of the toe is well anesthetized with 0.5 per cent. procain; the injection is begun half way between the base of the toe and the matrix of the nail, and is extended well round to the middle of the toe, both anteromesially and posteromesially. A small, sharp knife blade is then slipped under the skin, as shown in Figure 1, and a fairly thin pedicle graft is cut

permitted to walk, using a cut-out shoe. In the elderly and debilitated, the time of recovery may be proportionately prolonged. Figure 6 shows a healed, uncomplicated case, seventeen days after operation.

2401 Linden Avenue.

## FIBROLIPOMA OF LEFT LABIUM MAJUS

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Lipoma of the vulva is of sufficiently rare occurrence to make the report of a case worth while.

### REPORT OF CASE

A widow, aged 40, who had given birth to two children, both normal deliveries, was a native of New Mexico. There was nothing in the family or personal history which had any bearing on the condition under discussion. Except for the

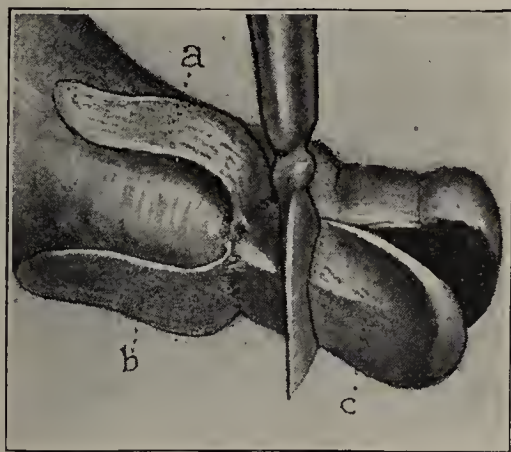


Fig. 4.—c, knife cutting tissue from side of toe.

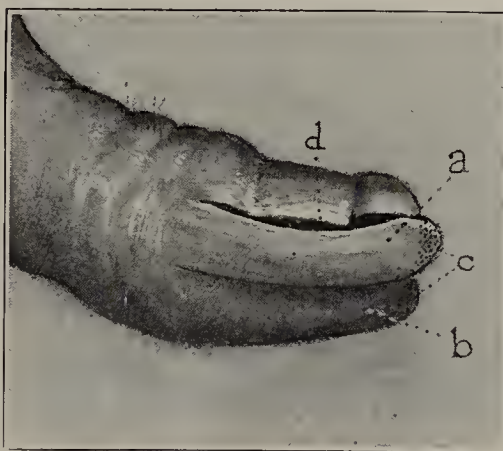


Fig. 5.—a, b, superolateral and inferolateral pedicle grafts laid over denuded area; c, tissue trimmed from grafts to suit the size of the denuded area; d, nail elevated with cotton, and graft placed under the nail.



Fig. 6.—Healed toe.

from the superolateral side of the toe. Another similar pedicle graft is cut immediately below it from the inferolateral side of the toe, as shown in Figure 2. The two pedicle grafts are thrown back and carefully protected so as not to be injured by the next procedure. The knife is then inserted in an oblique direction in the cutaneous fold, as shown in Figure 3.

The knife should be inserted immediately in the angle and close to the bone. The incision should be continued to the tip of the toe, and the tissue should be snipped off as high up as possible. The two pedicle flaps are then placed over the denuded area and trimmed to suit the size and shape of the raw surfaces, as shown in Figure 4.

The anterior flap is placed just beneath the nail, and the nail is elevated with a piece of cotton. The toe is covered with a piece of rubber protective coated with petrolatum, and a large gauze dressing applied.

The wound should not be dressed until the sixth day after operation. Frequently the pedicle attachment of the graft has sloughed, but it has already accomplished its purpose. The implanted skin remains, and covers the raw area in a surprisingly short time.

If, previous to operation, the toe has not been infected, healing should take place in from two to three weeks, but in infected cases the period of healing may extend to seven weeks. Naturally, the delicate grafts take better if the patient does not walk.

The operation is painless, and the patients do not suffer postoperatively. After the first week, if the patients are disinclined to remain in bed, they are

usual diseases of childhood, she had always enjoyed perfect health, up to the time the growth appeared.

*Examination.*—The patient was well nourished, 5 feet, 6 inches tall, and weighed 200 pounds. The blood pressure was systolic, 130; diastolic, 85. The abdomen was flat and without rigidity. No tumor masses could be felt anywhere. All the organs were normal and appeared to be functioning properly. The appetite was good, and the patient suffered no pain before or after eating. She said that she slept well. The knee jerks were slightly increased; all other reflexes were normal.

Suspended from the left labium majus was a pedunculated tumor, covered by elastic, hypertrophied skin, which at many points showed pitting on the surface. Two or three small areas of epidermis presented a thin glistening appearance, which was evidently due to friction. This mass had attained such an enormous size that it hung down to the patient's knees like an apron, as shown in the accompanying illustration. The patient said that she had first noticed the growth in February, 1919, three years and a half before the photograph was made.

On palpation, the tumor seemed to consist of rather firm tissue, with the characteristic fluctuations of a fatty growth. Pressure did not produce pain, the only sensation mentioned by the patient being a "slight smarting," which had, at times, been noticed.

*Treatment.*—The diagnosis was fibrolipoma. Excision was advised, and the tumor was removed.

*Pathologic Report.*—The tumor weighed 44 pounds (20 kg.). The pathologist, Dr. James R. Scott of Albuquerque, reported that, on section, he found that the epidermis was underlaid by a layer of dense, glistening, white fibrous tissue, about 1 inch (2.5 cm.) in thickness. Deeper in the specimen were large collections of lobulated adipose tissue, surrounded by a framework, together with a number of large veins which



bled freely on incision. There was no evidence of enlarged lymphatics. Plugs were taken from the thickened skin and underlying fibrous tissue, also from a characteristic island of fat surrounded by fibrous tissue. These were hardened in 10 per cent. liquor formaldehydi. Sections, stained by the hematoxylin and eosin and hematoxylin and van Gieson methods, showed the tumor mass to be covered with a fairly normal appearing epithelium. Immediately beneath the epithelium was a thick layer of firm fibrous tissue. In this fibrous tissue were many local aggregations of small round inflammatory cells, grouped about the small blood vessels especially, but also occurring as local aggregations at isolated points in the fibrous tissue. The small blood vessels appeared normal. Still deeper in the tumor mass, there were large deposits of adipose tissue. In the net work of this adipose tissue was considerable infiltration, caused by small, round inflammatory cells, which were particularly numerous in the vicinity of the small blood vessels. The sections showed no evidence of malignancy. The diagnosis was fibrolipoma.

#### CASES REPORTED IN THE LITERATURE

According to Lynch's<sup>1</sup> recent study of pelvic neoplasms, lipoma of the vulva is a rare occurrence, and this is all the more surprising because lipomas in general are very common. "The infrequency of these cases is well shown by the fact that no operator has yet recorded more than a single case in his own experience." In 1893, Howard A. Kelly<sup>2</sup> compiled nineteen cases from the literature, to which he added a case of his own. In 1914, A. L. Goodman<sup>3</sup> published an account of a lipoma of the vulva, occurring in a child, aged 11, and mentioned nineteen other reports which he had found recorded. Ten of these are included in Kelly's list, of which Goodman evidently had no knowledge. Lynch mentions six authors who have published reports of cases since the appearance of Kelly's paper; but his references are so incomplete and unreliable that they cast doubt on the accuracy of this statement. Churchill Carmalt,<sup>4</sup> writing in 1902, after mentioning Kelly's list, says that he found seven cases among those patients first treated for hernia, in a report on this subject by Jonathan Hutchinson, Jr.,<sup>5</sup> and that three cases were reported to him verbally by T. G. Thomas and W. S. Stone, making, with his own, fourteen additional cases.

Assuming the correctness of Lynch's statement, reports of less than forty-five cases of lipoma of the vulva have so far appeared in the literature. The tumor in the case reported by Balls-Headley<sup>6</sup> weighed 21

pounds (9.5 kg.), although Lynch quotes it as 24 pounds (10.9 kg.). Balls-Headley says in his article that Stiegele removed one that weighed 101 pounds (45.9 kg.). Kelly and Goodman, and also Senn in his textbook on tumors, in quoting Stiegele's case give the weight as 10 pounds (4.5 kg.). I have been unable to see Stiegele's original text; but it seems likely that Balls-Headley's statement is a misprint. If this is so, the tumor which I report here is the largest lipoma of the vulva on record.

All authors agree that labial lipomas are a very rare occurrence. Sturmdorf,<sup>7</sup> who reported one that had to be removed to permit delivery, calls it "one of the rarest of gynecologic affections." According to Lynch, "we know little of the etiology, save that they occur usually during the child-bearing age." In general, lipomas of the labia majora present practically the same characteristics as similar growths elsewhere in the body. The lipoma is a firm, elastic, rounded, usually multilobulated growth, sharply circumscribed from the surrounding tissue, but without encapsulation. It consists of normal fat tissue, lipoma molle; but this density may be reduced by secondary changes, or more often increased by admixture with fibrous tissue or by forms of metaplasia. It may exhibit an excess of fibrous tissue, because of atrophy of fat with fibrous replacement, or from admixture with true fibroma (fibrolipoma), as in my case. More frequently, true myxoma is combined with lipoma.<sup>8</sup> Virchow was of the opinion that irritation and trauma played an important part in the etiology of lipoma of the vulva. Carmalt's patient gave a history of falling astride a chair and striking the left labium majus. This injury was followed by a painful swelling, on the subsidence of which there remained a rather hard nodule, which gradually devel-



Fibrolipoma of left labium majus.

oped into a lipoma. Levings<sup>9</sup> remarks that "the very frequent occurrence of fatty tumors at places which have been subjected to irritation, injury, or chronic inflammation is seemingly well established. The production of lipomas is closely related to the formation of normal adipose tissue, as, with very few exceptions, they both occur in the same tissue layers, and are identical in histologic structure. Thoma says that the tendency in individuals to obesity favors the production of lipomata." This is interesting in connection with my patient, who weighed 60 pounds (27 kg.) more than is normal for a woman of her height.

#### ETIOLOGY

No doubt, lipomas occasionally arise when there is a general increase in body fat; but it is likely that this

1. Lynch, F. H., and Maxwell, A. F.: *Pelvic Neoplasms*, New York, D. Appleton & Co., 1922.

2. Kelly, H. A.: *Lipoma of the Labium Majus*, Johns Hopkins Hosp. Reports 3: 321, 1892-1894.

3. Goodman, A. L.: *Lipoma of the Vulva*, Am. Med. 9: 47 (Jan.) 1914.

4. Carmalt, Churchill: *Lipoma of the Vulva*, Am. J. Obst. 45: 688, 1902.

5. Hutchinson, Jonathan, Jr.: *Lipomata in Hernial Regions*, Tr. Path. Soc. London, 37: 451, 1886.

6. Balls-Headley, Walter: *Case of Lipoma of the Labium and Adjacent Parts*, Australian M. J. 10: 345, 1888.

7. Sturmdorf, A.: *Lipoma of the Labium Majus*, Am. J. Obst. 61: 311, 1910.

8. Ewing, James: *Neoplastic Diseases*, Philadelphia, W. B. Saunders Company, 1919.

9. Levings, A. H.: *Tumors*, Chicago, Cleveland Press, 1903.



is only because the pathologic production of fat in the form of tumors occurs coincidentally with a predisposition toward the physiologic formation of fat. We are still ignorant of just why lipoma develops, or why the formation takes place in any given part of the body. Vulvar lipomas are prone to become pedunculated, because of their location, the tissues to which they are attached being stretched out to form a broad thin base. In this connection, a case of lipoma in a man, reported by Christopherson<sup>10</sup> is of interest. His patient was an Arab sheik, aged "approximately" 65. He could with difficulty waddle along with his staff, owing to the weight of a mass of fat in his abdominal parietes. The skin hung down from the umbilicus to the middle of the thigh like a bag, enclosing a mass of fat, and behind, becoming continuous with the abdominal skin again over the pubis. This fatty apron could be flapped up toward the chest, and, buried deep in the folds of fat and behind it, was the penis, retracted and hidden. . . . The fatty deposit in the abdominal parietes became pendulous and apron-like, because there was no support, such as cloth trousers give to the western race. Calico garments, loose as they are, afford no support." According to Christopherson, this type of lipoma is quite common in the Sudan, and the possibility of customs of dress having a bearing on the location of dependent fatty tumors is worth considering.

#### DIAGNOSIS

The diagnosis of labial lipoma is ordinarily quite simple. Kelly points out, however, that these tumors may readily be taken for cysts when the fat is soft in the interior, because of the diminished amount of fibrous tissue, and the deceptive sensation of fluctuation which they give. They may also be mistaken for elephantiasis when the fibrous tissue in their septums is in excess, giving them a hard, even dense, feel. A large lipoma, with its pedicle extending over, or through, the inguinal canal, may easily simulate an inguinal hernia, demanding a careful examination to establish the differential diagnosis. Goodell<sup>11</sup> first thought the growth presented by his patient was a cystic tumor, because of the marked fluctuation, "but an exploratory plunge of an aspirator-needle resulted in a dry tapping," and he "came to the conclusion that it was an adipose tumor."

Carmalt believes that "confusion of these tumors with the smooth lymphangiectatic tumors, known as elephantiasis, would probably be easy; with the tumor reported by Andrews and quoted by Bland-Sutton as 'adrenal rest,' with sebaceous cysts which Winckel reports in the labia." He is also cognizant of an instance in which confusion arose because of "blind internal rectal fistulas entering the labis"; but he considers the chief difficulties are those encountered in differentiating this growth from epiplocele or omental enlargements.

The progress of these lipomas is usually very slow, and, as they are quite painless and very seldom cause inconvenience until they attain considerable size, it is perhaps not strange that no larger number have been brought to the attention of surgeons. The woman whose case is reported by Emmet<sup>12</sup> had learned to accommodate herself so comfortably to the presence

of the labial lipoma, "which she carried in a bag attached to her waist," that, once assured that the growth was not malignant, she refused all intervention, and would not even allow another examination that a sketch of the growth might be made.

#### TREATMENT

Operation is simple. The tumor shells out easily from its attachment, and the wound ordinarily heals by first intention. Especial aseptic precautions must, however, be exercised, as the site of such a growth is peculiarly liable to infection. In Carmalt's case, even the scar was invisible beneath the pubic hair, the labium perfectly regaining its normal appearance. In Sturm-dorf's case, the growth was extirpated during labor, while "the fetal head was pointing at the vaginal outlet"; but, although the tumor's "surface was transversed by a network of tortuous and dilated veins," it was successfully removed, permitting "prompt spontaneous delivery."

I have found no record of any labial lipoma recurring after removal, and no report of serious or fatal consequences. The fact that such a growth may easily become large enough to interfere with walking and the sexual functions seem to offer abundant reasons for its early removal.

### CHRONIC OBSTRUCTIVE JAUNDICE (NONCALCULOUS)

REVIEW OF NINE CASES TREATED BY  
CHOLECYSTOGASTROSTOMY \*

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It is unusual for growths involving the head of the pancreas to produce obstruction to both the common bile duct and the duodenum to such a degree that, if benefit is to be derived from an operation, it will be necessary to drain the stomach as well as the biliary passages. For this reason, I shall report the history of a patient suffering from such a growth, in whom symptomatic relief was obtained by combining cholecystogastrostomy with gastrojejunostomy. At the same time, I shall review briefly the histories of eight other patients operated on for the relief of chronic obstructive jaundice. If it is possible to establish suitable drainage sufficiently early in these cases, symptoms resulting from the obstruction will be relieved; but the final outcome will depend on the nature of the primary disease. Should chronic pancreatitis, or other non-malignant condition, be the cause, a cure may result. Fortunately, in nearly all cases of noncalculous obstruction of the common bile duct, the gallbladder is large and freely movable. The walls are usually in good condition, and an anastomosis to some part of the intestinal tract, preferably the stomach or duodenum, is a fairly simple and safe procedure. Diseases producing the symptoms for which this type of operation is advised or undertaken are often malignant in character, and, for this reason, these operations are usually referred to, and generally thought of, as palliative operations.

Since the diagnosis in many cases of chronic jaundice remains doubtful, even after the abdomen is

10. Christopherson, J. B.: A Curious Case of Lipoma, *J. Roy. Army Med. Corps* 6: 355 (March) 1906.

11. Goodell, W.: *Lessons in Gynecology*, Ed. 3, Philadelphia, F. A. Davis Company, 1891, lesson 45, p. 87.

12. Emmet, T. A.: *Principles and Practice of Gynecology*, Ed. 2, Philadelphia, H. C. Lea's Son & Co., 1880, pp. 601-602.

\* Read before the Southern Surgical Association, Memphis, Tenn., December, 1922.



opened, because it is not always practicable or even desirable to remove a portion of tissue for microscopic examination, a supposed palliative operation may prove to be a curative one. The symptoms are relieved, and the patient is restored to health, while Nature in some way makes provision for the disabled organ which causes the trouble. The final outcome in every case of obstructive jaundice, unless relieved by operation, is so certain that all those in reasonably good condition deserve the benefit of an exploratory operation.

The first patient in this series was operated on, four and one-half years ago. The preoperative diagnosis was common duct obstruction, probably due to stone. At operation, the gallbladder and common duct were greatly distended; but no stones were found. The pancreas was moderately enlarged, nodular and hard as stone throughout. The diagnosis was carcinoma of the pancreas. This patient made an uninterrupted recovery. Jaundice disappeared entirely in three weeks, and he has remained well to the present time. It is evident that this condition was chronically inflammatory and not malignant.

Since operating on this patient, I have performed the operation of cholecystogastrostomy eight times for the relief of chronic obstructive jaundice. Four of the nine patients suffered one or more attacks of pain. Two of these had calculi in the gallbladder; one, a number of small stones, and the other, a single large stone. In none of the cases was a stone found in the common duct. The gallbladder and ducts were distended in all cases—some to only a moderate degree, others, enormously. The walls of the gallbladder were described as thinned or thickened in varying degrees.

The pancreas showed definite pathologic changes in eight of the cases. In two, it was symmetrically enlarged throughout. In one, the midportion was the seat of a bulky tumor. In one, the head was thickened but smooth, and there were areas of yellowish subperitoneal fatty deposits, suggestive of fat necrosis. In four instances, it was hard as stone, nodular and irregular. On two occasions, it was thought that a separate nodule could be palpated at the location of the diverticulum of Vater; but these observations were not verified by exploratory incision into the duodenum. In one case, the pancreas appeared to be perfectly normal, and the obstruction was due to an anomalous vessel, an artery about the size of the radial, which crossed the common duct just as it disappeared behind the duodenum. The jaundice was classed as moderate in five cases and severe in four. Its duration was from three weeks to three months, except in the patient with the anomalous vessel, in whom it had been intermittent

for more than ten years. Weakness, loss of weight and digestive disturbance either preceded or soon followed the jaundice. Nausea and vomiting occurred to a certain extent in all cases; but, in one instance, they were so severe that the patient was unable to retain food of any sort. Two patients gave a history of chills and fever, and itching was a distressing symptom in five.

During the period in which these nine patients were observed, a number of other patients with chronic jaundice were operated on for one cause or another; but, as the methods adopted were different, the histories are not included in this report. Suffice it to say that in all cases in which an anastomosis of the gallbladder to the intestinal tract seemed to offer the hope of draining the bile passages, cholecystogastrostomy was performed. The stomach was chosen as the site for the anastomosis for the reason that it is easier and

safer, in the average case, to suture the gallbladder to this viscus than to the duodenum. All nine patients on whom this operation was performed made good operative recoveries. Technically, the operation offered little difficulty, as the gallbladders were large and freely movable—the fundus lying over the pyloric end of the stomach at about the point where the union should be formed.

#### TECHNIC OF OPERATION

The gallbladder is aspirated and a transverse incision,  $1\frac{1}{2}$  inches (3.8 cm.) long, is made just below the apex of the fundus. This opening is united by three rows of sutures to one of a similar length in the stomach, just proximal to the pylorus. No clamps are used. Use of the suction apparatus aids greatly in keeping the

field clean. Apparently, the thinness or thickness of the gallbladder wall is not significant so far as obtaining union is concerned.

#### RESULTS OF OPERATION

The convalescence of most of these patients was unusually smooth. The presence of bile in the stomach did not cause discomfort or increase the tendency to postoperative vomiting. As a matter of fact, the bedside notes show that five patients did not vomit following the operation; two vomited only once; one, several times during the first week, and in one, there was considerable vomiting on the twentieth day. This patient developed an acute dilatation of the stomach, which was promptly relieved by lavage. It is a general observation of all surgeons who have performed cholecystogastrostomy that the passage of bile through the stomach is harmless. The average stay of the patients in the hospital was twenty-six days. At the time of



Fig. 1 (Case 8).—Appearance of gastro-intestinal tract, twenty minutes after the ingestion of a barium meal.



discharge, the jaundice had entirely disappeared in all but one patient. This was undoubtedly a case of carcinoma of the diverticulum of Vater, which was almost a mahogany color—a slight tinge remaining on the twenty-fifth day.

The general symptoms, such as itching, dryness of the skin, nausea and vomiting, were entirely relieved. There was marked improvement in the strength of all but two patients. The histories of the patients since leaving the hospital reveal that four are perfectly well—one, four and one-half years after operation; one, nearly four years; one, two years and eight months, and one, eight months. One died at the end of one and one-half years. This man had resumed his work as a carpenter and was apparently in good health. He died suddenly following an unusual effort. Two died four months after operation, from extension of the disease.

The two remaining patients (Cases 8 and 9) have been operated on too recently to warrant an opinion as to the outcome. One of these (Case 8) is the one in whom there was obstruction to the descending portion of the duodenum, as well as to the common bile duct. A brief history of this case is reported herewith.

#### REPORT OF CASE

*History.*—F. T., a man, aged 56, was admitted to St. Luke's Hospital, Sept. 14, 1922, complaining of nausea, vomiting, weakness and itching of the skin. The present illness had begun about six months previously with indigestion and a tendency to tire easily. Careful examination at that time, including a barium meal, was negative, except for the presence of slight anemia. Early in the preceding summer he had gone to Scotland, and, although he suffered from a severe attack of diarrhea on the way over, he was much improved. In August, however, indigestion became worse and was soon followed by nausea and vomiting, so that by the time he returned home (September 1) he was unable to take, or to retain, solid food. About this time, jaundice appeared, which had gradually increased up to the present time. Recently, itching had become so troublesome that it kept him awake at night. The urine was very dark, and the stools were clay-colored. He had suffered no pain at any time. He had lost from 20 to 30 pounds (9 to 13.5 kg.) in weight. He had suffered from chronic constipation and occasional attacks of indigestion.

*Examination.*—The patient was a well-developed man, who appeared to be chronically ill. There was evidence of loss of much subcutaneous fat. The skin and sclera showed a marked yellowish tinge. The head and neck were normal. The lungs were clear. The heart was not enlarged, and there were no murmurs. The contour of the abdomen was normal. The presence of fluid was not demonstrated. The liver and gallbladder were not felt. There was a definite mass, about 2 by 3 inches (5 by 7.6 cm.), which was hard and movable, immediately to the right of the median line, at about the

normal location of the pancreas. The extremities were normal.

*Laboratory Findings:* The red blood cells numbered 4,704,000; hemoglobin, 50 per cent.; white blood cells, 70 per cent.; polymorphonuclears, 70 per cent.; neutrophils, 30 per cent. The morphology was normal. The Wassermann reaction was negative. Examination of the urine was negative; that of the stool was positive for blood.

*Roentgen-Ray Findings:* There was a lesion involving the pyloric end of the stomach and the second portion of the duodenum, with a twenty-four hour retention of barium in the stomach and duodenum. The possibility of a pancreatic lesion was considered, and it was believed that these findings merited surgical exploration. The diagnosis was carcinoma of the head of the pancreas, and obstruction of the common bile duct and second portion of the duodenum.

*Pathologic Findings:* The gallbladder and common duct were greatly distended. The head and body of the pancreas were hard, nodular and enlarged. The duodenum felt normal to the touch, but the descending portion was fixed to the pancreas. The liver appeared to be normal. The gallbladder did not contain stones, nor could stones be palpated in the common duct.

#### Operation and Result.

Sept. 22, 1922, a cholecystogastrostomy, combined with gastrojejunostomy, was performed, employing a button for intestinal anastomosis. The gallbladder was united to the anterior wall of the stomach, just proximal to the pylorus, by three rows of sutures—the two outer rows being silk and the inner row, chromic catgut. Before completing the anastomosis, one half of the button was dropped into the stomach. The posterior wall of the stomach was then exposed through a small opening in the transverse mesocolon, and the anastomosis to the jejunum rapidly completed by the use of the button.

Blood transfusion was given on the fifth day after operation. Convalescence was slow but satisfactory. All evidence of jaundice had disappeared at the end of three weeks. The patient did not vomit following the

operation, and he is now able to take all sorts of food. Two weeks after discharge from the hospital, there was a definite increase in the size of the pancreas, accompanied by pain in the back. The patient was then referred by his physician to Dr. Pfahler of Philadelphia for deep roentgen-ray therapy. Under this treatment, there has been marked reduction in the size of the growth, with general improvement in health.

In 1916, Erdmann and Heyd<sup>1</sup> reported a case in which cholecystogastrostomy and gastrojejunostomy were performed at one operation. The patient was in good condition, six months later. More recently, Spencer<sup>2</sup> of London described a case in which cholecystoduodenostomy was followed in three weeks by gastrojejunostomy, and the man lived for five years, dying of scirrhus cancer of the pancreas. Such results



Fig. 2 (Case 8).—Appearance of the gastro-intestinal tract, five and one-half hours after the ingestion of a barium meal.

1. Erdmann, J. F., and Heyd, C. G.: *Am. J. M. Sc.* 152:174 (Aug.) 1916.

2. Spencer: *Brit. J. Surg.* 10:303.



in a class of cases usually looked upon as hopeless warrant the risk involved in undertaking these operations.

Reviewing the histories of the cases forming this report and checking up the findings at operation with the subsequent history of the patients, I am impressed by the fact that in only three of the first seven cases in which operation was performed was I able to make a prognosis with a fair degree of certainty. Ordinarily, the failure to differentiate, in less than 50 per cent. of cases, a malignant from a nonmalignant tumor by the feel would be embarrassing; but, if one recalls the variations in size, density and shape of the apparently normal pancreas, such mistakes are more easily forgiven.

Certain procedures, such as forced fluids by mouth, if possible, glucose solution by rectum, and saline solution injected under the skin, employed over a period of days, are of great value in the preliminary preparation of these patients for operation. It is important to have the blood grouped, and to be prepared to give blood transfusion, either before or after operation. Furthermore, it is very important to avoid unnecessary trauma during operation.

The abdomen should be explored, and the various organs palpated with great care. Hemorrhage, started from lacerating the tissues, or from the forcible separation of adhesions, may be difficult or impossible to control. When one is in doubt, the common bile duct or duodenum should not be explored. It is better to leave an occasional stone than to cause the death of the patient by searching for it. I doubt the wisdom of ever cutting into the pancreas in deeply jaundiced patients for the purpose of removing specimens for pathologic examination. Such incisions serve no useful purpose, so far as the individual is concerned, and may lead to irremediable harm.

#### CONCLUSIONS

All patients suffering from chronic obstructive jaundice should be operated on, as surgery offers the only hope of relief. Internal drainage of the bile ducts is preferable to external drainage, just as it is desirable, when possible, to anastomose around inoperable growths in the intestine in order to avoid the formation of an artificial anus. The slightly greater risk involved in anastomosing the gallbladder than in establishing simple drainage is more than offset by the increased comfort of the patient, plus the added advantage of retaining the biliary secretion. Besides, in the event of a cure by external drainage, a secondary operation is necessary in order to close the fistula. I have found it easier to unite the gallbladder to the stomach than to the duodenum, and, since the passage of bile through the stomach is harmless, I consider cholecystogastrotomy the operation of choice.

424 Park Avenue.

## LESIONS OF THE PARATRIGEMINAL AREA

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The results of the surgical treatment of trigeminal neuralgia are brilliant and extremely gratifying to patient and surgeon alike. Section of the sensory root of the fifth cranial nerve offers immediate and lasting relief from an excruciating pain which defies description. Among an appreciable number of patients suffering from a true major neuralgia involving the trigeminal nerve there is a small number complaining of pain in the face which must be differentiated from typical trigeminal neuralgia. These patients offer a real differential diagnostic problem because surgical measures directed toward the fifth cranial nerve usually offer no relief.

The history given is that of a deeply situated, dull ache occurring in one or more of the areas supplied by the divisions of the trigeminal nerve. It may be more or less continuous and attended by exacerbations, and it may spread from one divisional area to another. The important point to be noted is that there are no sudden attacks of severe neuralgic pain causing untold agony and suffering; there are no dolorogenic zones, the slightest stimulation of which occasions a paroxysm of pain; there is not that state of apprehension in which the patient feels that the examiner may touch the face and produce a pain. These patients do not reach that state of mental depression induced by suffering which welcomes

death as a relief from the pain. In short, the complaint and the appearance of patients with trigeminal neuralgia are entirely lacking.

Yet this group of patients suffer pain, often prolonged, and to dismiss them with the diagnosis of an indefinite infection headache is an injustice. They have been subjected to numerous roentgen-ray examinations of the teeth and accessory nasal sinuses; they have had their tonsils removed, and still they suffer. It is usually after such procedures that they are referred to the surgeon for resection of the sensory root, only to be told, after careful examination, that resection cannot definitely promise relief. Sluder<sup>1</sup> has described a group of patients presenting symptoms of such a nature, and has attributed the pain to a sphenopalatine ganglion neuralgia. He has given relief to these patients by injection of the ganglion. He has offered preliminary cocaineization of the ganglion as a differential diagnostic point between this class and those suffering from a major neuralgia, for the application of a swab of cocain solu-



Fig. 1.—Anatomic model showing gasserian ganglion, internal carotid artery, carotid sympathetic plexus and related structures. The circle encloses the paratrigeminal area.

1. Sluder, Greenfield: Concerning Some Headaches and Eye Disorders of Nasal Origin, St. Louis, C. V. Mosby Company, 1918.



tion on the mucous membrane overlying the sphenopalatine ganglion offers immediate relief.

Three cases are here reported presenting pain in the distribution of the trigeminal nerve, entirely unlike a major neuralgia, none of which belong to the group described by Sluder. One of these cases was differentiated by the use of cocain applied to the sphenopalatine ganglion; in another, the lesion was verified at necropsy, and the description of the third case, found in the literature, excludes this condition very definitely.

#### REPORT OF CASES

CASE 1.—Mrs. E. S., aged 73, gave a history of a dull, heavy ache in the right maxillary and ophthalmic areas, which seemed to be deeply situated. The pain had been present for ten months. It had never involved the area supplied by the mandibular division. The patient suffered more or less continuously, but careful examination of the external surface of the face and within the mouth did not detect any dolorogenic zones. She was quite positive that there were no particular stimuli which produced the pain.

She had many roentgenograms taken of the accessory nasal sinuses and had all of her remaining teeth removed, without relief. Her tonsils were present, but examination did not reveal any inflammation or infection, and gave no indication for tonsillectomy as far as the tonsils themselves were concerned. Examination of the nasal accessory sinuses failed to detect any pathologic condition, and repetition of the roentgen-ray examination confirmed the previous negative results. A careful physical and neurologic observation revealed a moderate degree of generalized arteriosclerosis, a right enophthalmos with drooping of the right upper eyelid, a slightly smaller pupil on the right, and increased lacrimation on the right. The extra-ocular muscle movements were perfectly normal; there was no diplopia, and the pupils reacted to light and accommodation. There was no paresis or paralysis of the muscles supplied by the motor division of the fifth nerves, and sensation over the face was quite normal to all stimuli. The ciliospinal reflex, producing dilatation of the pupil by pinching the skin of the neck, was present on the left side but absent on the right. One drop of a 5 per cent. cocain solution in each eye produced unmistakable dilatation of the left pupil, but no change in the right. Under the influence of this solution, both pupils reacted to light. No other cranial nerves were involved, and otherwise the examination was entirely negative.

Four months prior to coming under observation, the patient had submitted to an alcoholic injection of the ophthalmic and maxillary divisions at their peripheral foramina. Loss of sensation was produced for three months, but the pain continued unabated, and she had resorted to the use of barbitol (veronal) for relief. To rule out a possible sphenopalatine neuralgia, a pledget of cotton saturated with cocain solution was placed on the mucous membrane over the sphenopalatine ganglion. No relief from the pain was obtained. The maxillary division was then reached through a deep injection of alcohol, and loss of sensation was produced in the maxillary area. A later report from the patient stated that her pain was still present, unchanged.

We were dealing in this case with a lesion producing pain in the supply of the ophthalmic and maxillary divisions of the right trigeminal nerve and, in addition, with a paralysis of the sympathetic fibers innervating the right orbit, as evidenced by failure of pupillary dilatation on the application of the cocain solution, narrowed palpebral fissure due to enophthalmos, and the absence of the ciliospinal reflex on the right side.

CASE 2.—Mrs. J. N., aged 65, gave a history of attacks of pain lasting six weeks. The pain, which was paroxysmal and momentary, was located in the left lower jaw, but frequently spreading upward, involving the maxillary and ophthalmic areas. These pains were situated deeply and could be brought on by firm pressure of the tongue against the gums of the lower jaw and by pressure on the eyeball. Following the last

attack of severe pain, two days prior to hospital entrance, pain of a less severe and an aching character had been almost constantly present in the same location. Physical and neurologic examinations revealed that the right pupil was smaller than the left, and both were slightly irregular. The right pupil reacted promptly to light and accommodation, but the left was slightly sluggish. There was a ptosis of the left upper eyelid, with paralysis of the extra-ocular muscles supplied by the left oculomotor nerve. The retinal veins in both eyes were dilated. There was no loss of sensation over the area supplying either trigeminal nerve, and the function of the muscles supplied by the motor division of this nerve was perfect. No other cranial nerves were involved, and examination otherwise was entirely negative. The Wassermann reaction on the blood and spinal fluid was negative.

The patient suddenly became unconscious, with the eyes drawn to the left; and loss of superficial reflexes and an increase in the deep reflexes, with a bilateral Babinski phenomenon, were noted. Death ensued within twelve hours. Postmortem examination revealed a small tumor the size of a pea on the outer coat of the left carotid artery, at the point within the skull where it turns forward to give off the middle cerebral and ophthalmic arteries and just medial to the gasserian ganglion. There was a diffuse hemorrhage between the dura and arachnoidea at the base, and the meninges were adherent to the vault of the skull. Section of the tumor mass revealed that it was an aneurysm of the wall of the carotid artery.

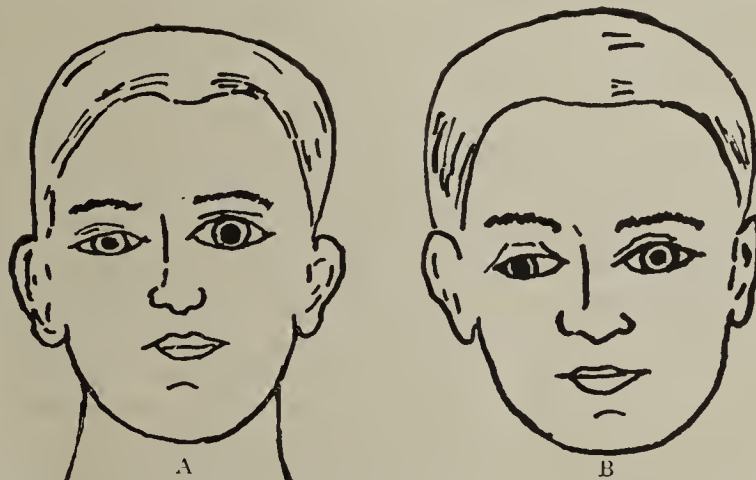


Fig. 2.—A, enophthalmos in Case 1, with narrowed palpebral fissure and failure of the right pupil to dilate after the application of cocain solution; B, ptosis in Case 2, with paralysis of the extra-ocular muscles supplied by the oculomotor nerve and dilated pupil.

This case is the exact opposite of the previous one. A patient suffering pain in the left trigeminal area was believed to have trigeminal neuralgia. However, the ptosis and dilatation of the pupil, and the paralysis of the extra-ocular muscles supplied by the third cranial nerve pointed unmistakably to a paralysis of the left oculomotor nerve.

CASE 3.—Ræder,<sup>2</sup> in 1918, reported the case of a youth, aged 18, who complained of pain in the left eye that radiated to the entire left trigeminal area. The left pupil was small, there was a slight drooping of the upper lid, the eyeball was somewhat sunken, and the left palpebral fissure was narrowed. Intra-ocular tension was decreased in the left eye, and, on instillation of cocain solution, the pupil of this eye did not dilate. The left pterygoid and masseter muscles were paretic, and movements of the eyeball in every direction were somewhat impaired, although the patient did not complain of diplopia. There were no vasomotor changes present on the left half of the face. A diagnosis was made of a paratrigenal lesion involving the region between the gasserian ganglion and the internal carotid artery, with infiltration of the sympathetic fibers passing from the carotid plexus to join the oculomotor and trigeminal nerves. Necropsy revealed a small, grayish red tumor occupying the space between the left

2. Ræder, G.: Report of a Case of Endothelioma in the Paratrigenal Area, *Norsk Mag. f. Lægvidensk.* 79, 1918; abstr., *Practical Medicine Series 8* (Neurology and Psychiatry), 1918.



gasserian ganglion and the hypophysis. The oculomotor nerve passed above the tumor, which infiltrated the sympathetic fibers and completely surrounded the internal carotid artery except on its medial surface. Histologic examination of the tumor proved that it was an endothelioma.

## COMMENT

Many instances are on record of involvement of the sympathetic fibers in the spinal canal and in the neck, due to trauma, or pharyngeal or cervical gland tumors. These cases are characterized by excessive sweating and other vasomotor phenomena on the affected side, in addition to the presence of Horner's syndrome. The cases under discussion lacked these symptoms and other symptoms of spinal or cervical pathologic changes, which has led us to believe that the sympathetic fibers surrounding the external carotid artery were intact and the lesion, consequently, was within the cranium. Likewise, tumors originating within the gasserian ganglion have been reported wherein the surrounding structures have been involved by an extension of the growth. The previously cited cases involved the trigeminal nerve incompletely, and the involvement was secondary to pathologic conditions originating elsewhere in the paratrigeminal area.

Ræder failed to find a report of a similar case in the literature. To his case, I wish to add Case 1, which clinically is quite similar, and Case 2, which was proved to be the result of a lesion in the same anatomic area, but the pathologic changes of which involved the oculomotor nerve instead of the sympathetic fibers, thus producing an opposing clinical picture. Each of these three cases presented pain in the distribution of the trigeminal nerve, but not typically a major neuralgic pain, and at least two had been referred for operative procedures directed toward the trigeminal sensory root. In addition to the presence of pain, these cases are characterized by the presence of symptoms directly attributable to involvement of the structures immediately adjacent to the gasserian ganglion. Figure 1, the reproduction of a model, presents the anatomic relations of the structures in the paratrigeminal area; and it can be readily seen that it would be possible for a very small lesion to involve the sympathetic fibers, and the oculomotor, trochlear and the abducens nerves in various combinations with the gasserian ganglion.

It is probable that the extent of the pain in these cases depends on the amount of involvement of the gasserian ganglion. Langley<sup>3</sup> has shown that stimulation of the caudal end of the cervical sympathetic trunk does not produce any changes in respiration or blood pressure that might be taken as evidence of pain. He failed to find any facts supporting the presence of a reflex action within the cervical sympathetic trunk; and histologic examination of the cervical sympathetic has demonstrated the absence of fibers that might transmit pain impulses. Nevertheless, it is true that alcoholic injections which relieve the pain of a true trigeminal neuralgia do not materially benefit these patients. There is the possibility that the pain present in the eye, situated deeply, may be transmitted by fibers of deep sensibility that are present in the nerves innervating the extra-ocular muscles.

## SUMMARY

Attention is directed to two syndromes of the paratrigeminal area: The one characterized by paralysis of

the sympathetic fibers passing from the carotid plexus, plus pain in the trigeminal area, of which we have two examples; the other characterized by pain in the trigeminal area plus paralysis of the oculomotor nerve. No doubt other combinations of nerve involvement may occur in this particular area.

2431 South Dearborn Street.

TORSION OF UTERINE ADNEXA  
BEFORE PUBERTY

## REPORT OF A CASE \*

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*History.*—Lillian T., aged 13, was admitted to Lebanon Hospital, in the service of Dr. Henry Roth, April 25, 1922, complaining of abdominal pain and vomiting. Her past history was uneventful. She had never menstruated, and had been well up to the onset of her illness, four days prior to admission to the hospital. At that time she was seized suddenly with sharp pain in the right lower quadrant of the abdomen. This pain soon became generalized, but on the second day the pain localized in the right lower quadrant and became very severe. The patient vomited several times after onset of the pain. On the third day of her illness, her temperature was 103 F. She complained of frequent and painful micturition, and had a feeling of soreness in the epigastrium. Before entering the hospital, the child had received numerous cathartics, which resulted in frequent fluid stools.

*Examination.*—On admission, the child appeared to be well nourished. She was apparently in severe pain. The eyes, ears, nose, mouth and throat presented no abnormalities. There was no enlargement of lymph nodes anywhere. The lungs were clear, and the heart sounds were rapid, regular and of good quality. The abdominal wall moved regularly with respiration, and there were no irregularities of outline. The right lower quadrant was rigid and very tender, and no masses were palpated. A rectal examination was not made. A blood examination revealed 17,800 leukocytes per cubic millimeter, with a differential count of 89 polymorphonuclears and 11 lymphocytes. Urinary analysis revealed a faint trace of albumin, but was otherwise negative. On admission, the temperature was 102.8 F. and the pulse rate, 100 a minute. Respirations were 26 a minute. A diagnosis of acute appendicitis was made, and the child was prepared immediately for operation.

*Operation.*—A right rectus incision was made, and when the peritoneal cavity was opened there was a flow of a moderate amount of serosanguineous fluid. In the lower angle of the incision, there appeared a large, bluish black, sausage-shaped mass, which at first sight impressed me as being a strangulated loop of intestine. This mass was carefully manipulated and traced to its point of origin—the adnexa of the right side. The mass was delivered without difficulty. It was an ovarian tumor, twisted on its pedicle, and it included the right fallopian tube and mesosalpinx. The pedicle was untwisted, and both tube and ovary were removed *en masse*. Torsion in this case followed the direction of the hands of a clock. The appendix appeared inflamed at the tip, where it was covered with fibrin and was in close contact with the adnexal mass. The appendix was removed. The anterior layer of the broad ligament on the right side was covered with patches of fibrin. The adnexa on the left side were examined, and they appeared to be normal. A cigaret drain was placed in the pelvis, and the abdominal incision was closed in layers. Recovery was uneventful, and the patient was discharged as cured, May 9.

*Pathologic Report.*—The appendix appeared pale, except at the tip, which was acutely inflamed. No fecaliths were

3. Langley, J. N.: Remarks on the Results of Degeneration of the Upper Thoracic White Rami Communicantes, Chiefly in Relation to Commissural Fibers in the Sympathetic System, J. Physiol. 25: 468, 1900.

\* Read before the Society of Alumni of Lebanon Hospital, Nov. 14, 1922.



present. Microscopically, the appendix appeared normal except for the serosa, which was considerably congested. The adnexal mass consisted of a horseshoe or kidney-shaped tumor measuring 12 by 6 by 3 cm. Along the concave side of the specimen was attached a uterine tube, which appeared acutely inflamed. On section, the mass felt solid. It appeared hemorrhagic. Microscopically, the section was unrecognizable as ovarian tissue. It was composed entirely of blood cells, with an occasional thin strand of connective tissue.

COMMENT

Torsion of uterine adnexa before puberty is a condition that occurs infrequently, as may be judged by the very few cases reported in the literature. Smith and Butler<sup>1</sup> have compiled reports of twenty-six cases of torsion of ovarian tumors before puberty; and in a review of torsion of normal adnexa, they have abstracted the histories of four cases occurring in children under 12 years of age. Of the first group, only one third were diagnosed correctly, while in another third the diagnosis of appendicitis was made. Of the four cases of twisted pedicles of normal adnexa, one was diagnosed as acute appendicitis, and the remaining three as appendical abscess.

An analysis of the thirty-one cases, including the one that I report, shows that in nine instances in which torsion occurred on the left side the correct preoperative diagnosis was made five times, and in twelve instances in which torsion occurred on the right side the correct preoperative diagnosis was made only once. There remain ten cases unclassified as to the side involved, in which the correct preoperative diagnosis was made twice. Appendicitis was the preoperative diagnosis twice in the nine cases in which the left side was involved, six times in the twelve involving the right side, and five times in the ten unclassified cases. This shows that when signs and symptoms pointed to a lesion in the lower abdomen, particularly on the right side, there was a tendency to diagnose the condition as appendicitis.

These cases emphasize the fact that, in a girl presenting signs and symptoms of acute intra-abdominal disease, torsion of the adnexa must be given serious consideration. Also, in view of the fact that symptoms of torsion of the adnexa may simulate those of various other conditions, a rectal examination may aid greatly in the establishment of a correct diagnosis. Although rectal examination of children is at best unsatisfactory, in some cases such a procedure may help considerably toward arriving at a proper diagnosis. In the case reported, it was only when the abdomen was palpated during anesthesia that the presence of a tumor was detected. A rectal examination would have modified our diagnosis, if not completely, at least to the extent of leading us to consider seriously other possibilities in addition to a probable acute appendicitis.

Smith and Butler raise the question as to whether normal adnexa can undergo torsion, and in their paper they present summaries of fourteen reported cases of torsion of normal adnexa at various ages, four of which occurred in children under 12 years of age. Whether, in the case that I report, the torsion involved a normal ovary or one modified by cystic degeneration is difficult to say; for even the pathologic examination of the removed specimen did not give us the slightest clue as to what the condition of the ovary was before torsion had taken place.

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OBSERVATIONS ON THE PRECIPITIN  
REACTION FOR SYPHILIS \*

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OMAHA

From time to time, numerous discrepancies in the Wassermann test for syphilis have been reported, and though standardization of the test has been many times attempted, no method of standardization is as yet generally accepted. To meet this difficulty, several precipitation tests have been developed, the latest and simplest being that of Kahn,<sup>1</sup> modified by Herrold.<sup>2</sup>

The latter test is even more simple and economical than the Kahn test. It is based on the formation of a ring of precipitation of antigen when in contact with serum from a patient with syphilis. To determine the value of this precipitation reaction in the diagnosis of syphilis, parallel observations on Wassermann and precipitin tests have been made.

The antigen used was prepared according to the method described by Kahn. For the test, the antigen is diluted rapidly 1:10 or 1:12 with physiologic sodium chlorid solution, as outlined by Kahn and Herrold. A small amount of antigen is then placed in a precipitin tube (0.5 by 3 cm.), and serum (heated or unheated) is allowed to run slowly into the bottom of the tube in order to give a sharp ring of contact. Blood serum

COMPARISON OF ONE THOUSAND FIVE HUNDRED WAS-  
SERMANN AND PRECIPITIN REACTIONS

No. of Serums	Wassermann	Precipitin
222	Positive	Positive
1,261	Negative	Negative
14	Positive	Negative
3	Negative	Positive
1,500		

tested by Herrold<sup>2</sup> was unheated. In my titrations, serum heated to 56 C. for thirty minutes was used, with apparently identical results. After standing at room temperature for from one to two hours, the tubes are read against a dark background. Proper light is necessary to obtain the most accurate interpretation, and while some experience is essential, most rings are readily identified.

In the accompanying table are the results of parallel tests of Wassermann and precipitin reactions on 1,500 serums. Complete agreement occurred in 1,483 serums; the Wassermann reaction was positive and the precipitin negative in fourteen instances, and the Wassermann was negative and precipitin positive in three. In three instances in which the Wassermann was positive and the precipitin negative, the tests were repeated and the reactions were found to agree (positive). In one case, the Wassermann was negative and the precipitin positive, and at necropsy syphilitic aortitis with aneurysm was found. In one instance with repeated tests, the Wassermann was always positive, and at no time could any trace of precipitation be made out. It is assumed that failure to agree the first time in the three serums was due to error in technic or in interpretation. It may also be noted that among the discrepancies the majority occurred early in the study and so may in large part be due to inexperience.

\* From the Laboratory of the Cook County Hospital, Chicago.  
1. Kahn, R. L.: A Simple Precipitation Reaction for Syphilis, *Arch. Dermat. & Syph.* 5: 570-578 (May) 1922; 5: 734-743 (June) 1922; 6: 332-341 (Sept.) 1922.  
2. Herrold, R. L.: A Ring or Contact Precipitation Test for Syphilis, a Modification of the Kahn Test, *J. A. M. A.* 79: 957 (Sept. 16) 1922.

1. Smith, R. R., and Butler, N. J.: *Am. J. Obst. & Gynec.* 2: 507-521 (Nov.) 1921.



Numerous tests were made on cerebrospinal fluids, without success, the precipitin test being very unreliable. Positive reactions occurred clearly only when considerable traumatic blood was present.

In all Wassermann tests, the antsheep system was used, with amounts of serum, antigen and complement approximating 0.1 c.c., and with three antigens (10 units).

No attempt has been made to correlate the clinical findings and the results of the serologic tests, the study being limited only to the comparison of the two reactions; however, the close agreement between the Wassermann and precipitation tests on blood serums (98 per cent of 1,500 tests) renders the latter worthy of further consideration. The technic of the Wassermann test is somewhat complicated and laborious, and it is subject to modifications of such nature that among several observers varying results may be obtained on the same serums. The precipitin test is far more simple to set up and is readily interpreted. Because of its simplicity, accuracy and economy of materials and time, the precipitin test may be used to advantage parallel with the Wassermann, as an aid in the interpretation of results. When the tests agree, reasonable accuracy is assured; when there is disagreement, the tests should be repeated, and if there is still discrepancy, for the present at least, the result of the Wassermann test should be accepted.

In instances in which the two tests fail to agree, it is possible that further study of the antigens and their dilution, together with the clinical history and findings, may result in such accuracy that the precipitin test will serve as an aid in the diagnosis of syphilis.

Brandeis Theater Building.

THE USE OF CREATININ AS A TEST  
OF RENAL FUNCTION\*

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Many new tests for the functional activity of the kidneys are being introduced from time to time. Most of these tests are carried out by studying the excretion of a foreign substance, usually a dyestuff, by the kidneys. One notable exception is the employment of urea as a functional test by Addis and Watanabe<sup>1</sup> and by McLean and de Wesselow.<sup>2</sup>

The frequent addition of new tests does not necessarily imply any dissatisfaction with those tests now in use, but indicates an increasing appreciation of the complex process usually designated as "renal function." Most students of kidney diseases have noted and emphasized the peculiar variability of different kidneys in the excretion of different substances. This variability calls for the employment of several tests if we wish a composite picture and not a fragmentary view of the kidney's functional activity.

Creatinin seems for many reasons to be an excellent substance for testing the functional response of the kidney. Its concentration in the blood in health is remarkably constant: its hourly excretion by the kidney

is so constant that Austin, Stillman and Van Slyke<sup>3</sup> have advocated its use as a means of checking the accuracy of urine collections, and its daily excretion in the same individual is so uniform that Shaffer<sup>4</sup> has estimated its excretion to be from 20 to 30 mg. per kilogram of body weight, and has introduced the term "creatinin coefficient" to express this constant relationship.

Although creatinin is readily excreted by the normal kidney, in nephritis this daily excretion may be dimin-

TABLE 1.—FINDINGS IN NORMAL CONTROLS

Case	Age, Years	Creatinin Excretion, Mg.			Phenolsulphonephthalein Percentage		
		Specimen 1	Specimen 2	Specimen 3	1 Hour	2 Hours	Total
1	24	68	197	130	4	10	50
2	28	88	246	125	25	5	30
3	38	61	205	134	50	25	75
4	25	75	273	99	60	10	70
5	26	45	224	133	25	15	40
6	35	42	175	109	25	10	35
7	28	87	260	175	30	7	37
8	34	85	286	164	50	18	68
9	28	31	111	88	40	10	50
10	24	55	167	77	50	5	55
Average excretion		64	214	113			

ished; and, as Myers and Lough<sup>5</sup> have emphasized, there is often in this disease an increase in the amount of creatinin in the blood, which is of both diagnostic and prognostic value.

Recently, we have been interested in studying the excretion of creatinin in health and in disease, and particularly the response of the kidney to a sudden increase of creatinin in the blood.

The creatinin used in these studies came from two sources: urine, and a by-product obtained in the manufacture of meat juice.<sup>6</sup> Identical results were obtained from the three samples of creatinin.

The following procedure was carried out in making the test: The patient voided, this specimen was thrown away and he was given a glass of water; and promptly at the end of an hour urine was obtained and labeled Specimen 1. The patient was immediately given an intravenous injection of 0.5 gm. of creatinin, drank

TABLE 2.—VARIOUS DISEASES

Case	Age, Yrs.	Diagnosis	Creatinin Excretion, Mg.			Phenolsulphonephthalein Percentage		
			Specimen 1	Specimen 2	Specimen 3	1 Hr.	2 Hrs.	Total
1	35	Dilatation of esophagus.	26	142	85	50	13	63
2	65	Syphilis of liver.....	73	266	123	50	10	60
3	30	Infectious arthritis.....	42	198	164			
4	45	Infectious arthritis.....	19	169	43	13	13	26
5	49	Exophthalmic goiter.....	41	113	99	17	18	36
6	50	Myxedema.....	54	198	140	43	20	63
7	67	Exophthalmic goiter.....	16	108	127			
8	41	Pernicious anemia.....	50	221	58	20	8	28
9	42	Diabetes.....	41	212	128	50	15	65
10	74	Carcinoma of lip.....	76	226	163	40	10	50
Average excretion of creatinin.....			42	186	108			

a glass of water and again voided at the end of an hour, and this was labeled Specimen 2. He then drank another glass of water and again at the end of an hour voided, this urine being labeled Specimen 3.

3. Austin, J. H.; Stillman, Edgar, and Van Slyke, D. D.: Factors Governing the Excretion Rate of Urea, *J. Biol. Chem.* **46**: 91 (March) 1921.

4. Shaffer, Philip: Protein Metabolism in Exophthalmic Goiter, *J. Biol. Chem.* **3**: 13, 1907.

5. Myers, V. C., and Lough, W. G.: The Creatinin of the Blood in Nephritis, Its Diagnostic Value, *Arch. Int. Med.* **16**: 536 (Oct.) 1915.

6. This by-product was supplied through the courtesy of Mr. C. B. Valentine. Prof. Graham Edgar of the University of Virginia kindly sent some creatinin prepared from the same by-product.

\* From the Department of Internal Medicine of the University of Kansas School of Medicine.

1. Addis, Thomas, and Watanabe, C. K.: The Rate of Urea Excretion, *J. Biol. Chem.* **27**: 249 (Oct.) 1916.

2. McLean, H., and de Wesselow, O. L. V.: On the Testing of Renal Efficiency with Observations on the "Urea Coefficient," *Brit. J. Exper. Path.* **1**: 53 (Feb.) 1920.



Care was taken that the patient emptied the bladder completely each time he voided, and that the glass of water taken each time was uniform in size, measuring 200 c.c. The creatinin solution was both prepared and autoclaved just before injection.

For the purpose of comparative study, the phenolsulphonaphthalein test was employed, the dyestuff being injected intravenously. In a few of the earlier observations, the phenolsulphonaphthalein test was carried out on the day following the creatinin injection, but in most instances the dye was injected simultaneously with the creatinin, and the determinations of the excretion of both substances were made during the identical periods. No untoward reactions on the part of the patient were encountered in any tests.

The creatinin determinations in the urine were made by the method of Folin; the phenolsulphonaphthalein estimations were made with the Dunning and Dubosq colorimeters.

In all, more than fifty observations have been made. The first group shown in Table 1 consisted of ten

Three of these controls gave a phenolsulphonaphthalein excretion of less than 40 per cent. in two hours. Subsequent phenolsulphonaphthalein tests, with no creatinin injection, yielded an excretion of more than 60 per cent. in two hours. No satisfactory explanation of this variation is apparent.

Table 2 presents the results obtained in a group of patients suffering from various diseases. None of this group had any indication of kidney disease. The urine was clear, and the blood nonprotein nitrogen, urea and creatinin showed normal values. The average excretion of creatinin following injection was even greater here than in the normal controls, as four times the preinjection value was obtained in the hour after injection, and six times as much was excreted in the two hours as during the preinjection hour. The average values were: Specimen 1, 42 mg.; Specimen 2, 186 mg., and Specimen 3, 103 mg.

A group of ten patients with arterial hypertension was studied. The results are presented in Table 3. All of these patients, when the test was carried out, had

TABLE 3.—ARTERIAL HYPERTENSION

Case	Age, Years	Blood Pressure		Blood Chemistry, Mg. per 100 C.c.			Urine		Creatinin Excretion, Mg.			Phenolsulphonaphthalein Percentage			Comment
		Sys-tolic	Dias-tolic	Nonprotein Nitrogen	Urea	Creat-inin	Albumin	Casts	Speci-men 1	Speci-men 2	Speci-men 3	1 Hour	2 Hours	Total	
1	42	180	100	31	15	1.4	—	—	39	228	161	45	10	55	
2	64	200	90	24	11	1.0	—	—	65	126	31	55	15	60	
3	60	175	90	16	17	1.4	—	—	19	250	81	13	12	25	
4	67	160	90	40	18	1.7	—	—	81	112	106	23	12	35	
5	41	165	100	41	18	1.4	—	—	40	258	70	50	10	60	
6	62	182	90	43	21	1.0	—	—	40	152	79				
7	42	180	120	30	10	1.7	—	—	58	245	130	50	10	60	
8	49	150	90	..	12	1.5	—	—	20	123	85	25	12	37	Later, phenolsul-
9	45	155	80	28	13	1.2	+	—	42	184	102	15	10	25	phonaphthalein
10	50	220	120	44	19	1.9	+	+	40	128	79	22	15	37	70 per cent.
				92	45	2.9	++	++	62	90	83	10	5	15	Marked edema
				15	...	...	+	+	27	78	64	20	15	35	Improved

TABLE 4.—HEART DISEASE

Case	Age, Years	Diagnosis	Urine		Creatinin Excretion, Mg.			Phenolsulphonaphthalein Percentage		
			Albumin	Casts	Speci-men 1	Speci-men 2	Speci-men 3	1 Hour	2 Hours	Total
1	35	Aortic insufficiency.....	—	—	53	140	160	35	15	50
2	40	Myocarditis.....	—	—	28	284	106	60	10	70
3	40	Myocardial insufficiency.....	—	—	60	180	86	45	10	55
4	42	Mitral insufficiency.....	—	—	29	137	77	35	20	55
			++	++	39	60	49	8	10	18

normal controls. The urine of these subjects was negative, and the blood chemical findings for nonprotein nitrogen, urea and creatinin were normal.

A summary of this group of cases shows that the average excretion of creatinin during the hour following injection was three times the amount of that excreted during the hour preceding injection, and that the total excretion at the end of two hours was five times the amount.

The average values were 64 mg. for the preinjection hour, 214 for the first hour after excretion during the preinjection hour, and 113 for the second hour. The amount of urine voided varied greatly with different individuals, and some subjects showed an increased urinary output after injection. All showed an increase in the creatinin concentration of the urine; the individuals not showing any increased amount of urine had a very marked increase in this concentration, often as great as 700 per cent. This indicated an ability of the normal kidney to excrete the excess creatinin by increasing its concentration in the urine when there was no increase in urinary output.

normal values for blood nonprotein nitrogen, urea and creatinin. In one patient there was a trace of albumin, with casts, in the urine, and in another a faint trace of albumin in the urine. In the eight others urinary findings were normal. In all of these patients except one, when first studied, there was an excretion of creatinin similar to that described for normal individuals. The average values for the three specimens of urine were 48, 180 and 82 mg.

One patient (Case 10) deserves especial comment. The test when first carried out gave normal values. Four days later, during an attack of acute renal insufficiency associated with edema and increase in the blood nonprotein nitrogen, urea and creatinin, the amount of creatinin recovered one hour after injection was only approximately 40 per cent. more than that excreted during the previous hour. A third test after subsidence of these symptoms indicated an almost normal excretion.

Four patients suffering from cardiac disease were studied. The results are presented in Table 4. In two of these patients, the creatinin excretion after the



test was greatly increased; one patient with a very marked edema showed an excretion slightly less than that usually obtained in normal controls, while a fourth patient (Case 4) showed at first an adequate excretion, but later, with the development of a marked anasarca, and a reduction of the total daily urine output to 300 c.c., only a 50 per cent. increase in excretion at the end of one hour. The last patient had normal values for blood nonprotein nitrogen, urea and creatinin.

A summary of the cases of nephritis is presented in Table 5. Two of the patients had a relatively mild acute nephritis and responded normally to the test. In addition to these, fourteen cases of typical chronic nephritis were studied, two of which came to necropsy.

The results of the creatinin test in these patients were uniform. In none was there an increase of creatinin excretion exceeding 50 per cent. one hour after injection; in some there was no increase, and in others an actual decrease. The average values for the creatinin excretion in this group were 43 mg. for the preinjection hour, 51 mg. for the first hour following injection, and 62 mg. for the second hour after injection.

THE PRECIPITIN REACTION OF  
THYROGLOBULIN \*

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Thyroglobulin, first isolated by Oswald, is a comparatively constant compound in different species, except, of course, for variations in the iodine content. So far as we can learn, the antigenic properties of thyroglobulin have not been studied, and it occurred to us that it would be of interest to study them. Accordingly, we prepared thyroglobulin from beef, swine, and human thyroids in the usual way, but with special efforts to obtain as pure a product as possible.

The thyroids were freed from fat and connective tissue and torn into small pieces, which were washed in water until almost white, and then extracted in the icebox with salt solution containing a little thymol. After being filtered through paper several times, the extract was precipitated with

TABLE 5.—NEPHRITIS

Case	Age, Years	Blood Pressure		Blood Chemistry, Mg. per 100 C.c.			Urine		Creatinin Excretion, Mg.			Phenolsulphonephthalein Percentage			Comment
		Sys-tolic	Dias-tolic	Nonprotein Nitrogen	Urea	Creatinin	Albumin	Casts	Speci-men 1	Speci-men 2	Speci-men 3	1 Hour	2 Hours	Total	
1	38	158	100	..	..	1.7	+	+	104	272	176	45	11	56	Acute
2	17	130	75	22	9	1.4	+	+	41	201	160	30	10	40	Acute
3	44	200	150	41	22	1.8	+	+	70	63	71	32	11	43	
4	70	145	90	..	16	1.5	+	+	27	8	38	30	10	40	
5	70	200	120	131	81	5.0	+	+	36	7	19	5	2	7	
6	56	210	135	..	13	1.7	+	+	30	45	50	8	10	18	
7	22	180	115	..	20	1.4	+	+	56	..	142	23	17	40	
8	35	180	120	34	11	2.0	+	+	16	12	12	..	..	Trace	Died, necropsy
9	52	220	135	46	26	1.5	+	+	91	122	95	..	..	Trace	Died, necropsy
10	56	220	160	70	46	2.7	+	+	45	46	70	..	..	Trace	
11	68	150	100	20	13	1.2	+	+	37	17	31	40	10	50	
12	65	160	80	..	14	..	+	+	43	63	66				Arteriosclerosis
13	70	220	120	34	18	2.8	+	+	138	179	44	8	15	23	
14	44	170	60	..	..	2.0	+	+	30	39	25	15	10	25	
15	56	150	80	40	22	1.0	+	+	25	9	40	3	Trace	3	
16	47	190	110	80	46	4.2	+	+	48	60	64				
Average excretion of creatinin in chronic nephritis (Cases 3 to 16).....									43	51	54				

Only four of the patients gave blood creatinin values above 2 mg. for each hundred cubic centimeters; six gave normal values for blood creatinin, but at the same time were unable to excrete the excess creatinin thrown into the circulation. This failure to excrete an increased amount of creatinin was apparently due to inability to concentrate this creatinin in the urine, and also to inability to make up for the failure in concentration by an increased output of urine.

SUMMARY

In normal persons and in patients suffering from various diseases with no renal lesions, the intravenous injection of 0.5 gm. of creatinin was followed by an increased excretion in one hour amounting to three times that excreted during the hour preceding injection. The total excretion at the end of two hours amounted to five times that of the preinjection hour.

In chronic nephritis, the kidney fails to respond in this manner, and in the cases studied this increase has been less than 50 per cent. In a number of these patients, no increase at all was seen.

Registered Physicians in Great Britain.—The total number of names mentioned in the British Medical Register for 1921 is reported as 45,408 for an estimated population in the United Kingdom of 46,000,000, or one physician to every 1,013 people.

an equal quantity of concentrated ammonium sulphate solution, and the precipitate was washed with a 50 per cent. ammonium sulphate solution, dissolved in salt solution, and reprecipitated as before. The ammonium sulphate was removed by dialysis, and the final solution given a concentration of 0.85 per cent. sodium chlorid.

For injecting rabbits, a 1 per cent. solution of swine and human thyroglobulin by weight was used, 10 c.c. being given intravenously every day for three days. Five days after the last injection of swine thyroglobulin, the serum of the rabbits gave a fairly strong precipitin titer, while the serum of the rabbits injected with human thyroglobulin was without any action. Beginning on the seventh day after the last injection, these rabbits were given a second series of three daily injections of 10 c.c., and, on the fourth day after the last injection, the serum gave a very high precipitin titer. In the case of beef thyroglobulin, 10 c.c. of a 1:250 solution was injected intravenously daily, three times; and, on the fourth day after the last injection, the serum was found to have a good precipitin titer.

The results of the tests with the antisera prepared as outlined are given in the accompanying table, the figures of which indicate the highest dilutions of the thyroglobulins and of serums with which the antisera would form precipitates by the contact or ring method after one hour at the room temperature. In all cases in which negative results are recorded, the tests were carried through with a series of progressive

\* From the John McCormick Institute for Infectious Diseases.



dilutions of the thyroglobulin or serum in question; we did this in order to avoid the danger of being misled by failure of reaction in low dilutions of antigen due to the so-called prozone effect.

The results show that, in these experiments, beef and swine thyroglobulins acted as strictly specific precipitinogens, the resulting precipitin serums being apparently specific, each for the corresponding thyroglobulin, while the human thyroglobulin, besides a rich output of specific precipitin, also called forth, but in far smaller quantities, precipitins for swine and beef thyroglobulins and for human serum. As indicated in the table, the serum precipitins in the original antiserum for human thyroglobulin were removed by an equal amount of a 1:200 dilution of normal human serum. Appropriate tests showed that the human thyroglobulin used as antigen contained small amounts of serum proteins, but sufficient to account for the serum precipitins in the antiserum. The precipitins in this antiserum for swine and beef thyroglobulin were probably of

TITERS OF ANTITHYROGLOBULIN PRECIPITIN SERUMS

Serums of Rabbits Injected Intravenously with Beef, Human or Swine Thyroglobulin	Titers of Antiserums in					
	Beef Thyro- globulin	Beef Serum	Human Thyro- globulin	Human Serum	Swine Thyro- globulin	Swine Serum
Antibeef serum...	8,000	0	0	0	0	0
Antihuman serum, original.....	8,000	0	1,000,000	1,600	25,000	0
Antihuman serum, after mixing with equal quantity of 1:200 dilution of human serum and removing the precipitate that formed on standing.....	2,000	0	640,000	20	25,000	0
Antiswine serum..	0	0	0	0	128,000	0
Normal rabbit serum.....	0	0	0	0	0	0

the nature of so-called minor precipitins; at any rate, mixing the antiserum with two parts of swine or beef thyroglobulin solution 1:3,000, and removing the precipitate that formed on standing, deprived the antiserum of all power to react with either of these thyroglobulins, while it still reacted with human thyroglobulin solution at 1:256,000. Similar treatment of the antiserum with human thyroglobulin, on the other hand, removed all precipitins completely. Even mere dilution of the antiserum with three parts of salt solution was enough to suppress the reactions with swine and beef thyroglobulins, the titer in human thyroglobulin being reduced merely in proportion to the dilutions.

The injecting of rabbits with extracts in salt solution of thyroids removed from exophthalmic goiter patients (by Dr. George W. Crile in Cleveland and Dr. J. F. Jaros in Chicago) caused the formation of precipitins for human thyroglobulin, from normal as well as exophthalmic thyroids; and in such antisera, too, minor precipitins acting on swine and beef thyroglobulins were present also.

## SUMMARY

The results of this work indicate that human thyroglobulin, prepared as described, contains a main, strictly specific antigen and also lesser antigens that in the rabbit may call forth precipitins for thyroglobulins of other species. Perhaps closer study may reveal several thyroglobulins in other species also; but the beef and swine thyroglobulins used in these experiments acted as strictly specific antigens.

## DENGUE FEVER IN LOUISIANA

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NEW ORLEANS

The epidemic of dengue fever that prevailed in Louisiana from the early part of September until the latter part of December, 1922, was doubtless introduced into the state from Texas. Reports indicate that Galveston and Houston had been suffering from this disease for some time, and the case dissemination followed closely the course of the Southern Pacific Railroad, the main line of communication between the two states.

Shortly after the invasion of southern Louisiana, the epidemic spread diagonally northwest, toward Shreveport, closely approximating the Texas and Pacific line. Subsequent invasion of other cities to the right and left of both railway systems followed in due course.

It is quite impossible to know accurately the actual number of cases that occurred; the official reports so far received show less than 8,000. A survey made during the early part of the epidemic indicated that only a fraction of the cases that occurred were reported by the practitioners. The reasons are at once apparent when one remembers that the physicians in many localities were suddenly overwhelmed with work, and that the slight danger resulted in an indifference, so that many persons were seen not at all or, at most, only once or twice.

During the survey it was noted, and as the epidemic progressed it became increasingly clear, that this acute infectious disease did not always present the typical symptoms of dengue. In fact, there was such great variation that physicians were often in doubt as to what they were really handling. Coupled with the ever present specter of yellow fever in Louisiana was the tradition that the latter disease followed closely on the heels of a dengue outbreak. It is probable that there is some rational basis for this tradition, a fact which has only been recently appreciated, viz., that both diseases are transmitted by the same vector, *Aedes aegypti*. This insect, formerly known as *Stegomyia fasciata*, *S. calopus* and *Aedes calopus*, and commonly called the "yellow fever," "tiger," "house," "day" and "calico" mosquito, is widely disseminated throughout all sections of the state. It breeds exclusively in cisterns and back yard litter, such as empty cans, bottles, jars, troughs, sagging or blocked gutters—in fact, any receptacle that will contain a teaspoonful of water long enough for the eggs to develop. Not infrequently this plague of the Louisiana rural districts is found breeding in the water pitchers within the house itself. Flying by day, it is encountered with monotonous frequency in the living and bedrooms of unscreened dwellings, between the hours of 9 or 10 in the morning and 4 or 5 in the afternoon. During the survey, *Aedes*, gorged with the blood of dengue patients or in the process of feeding, was observed very often.

## PREPARATION OF A QUESTIONNAIRE

The variation in symptoms and degree, and the fact that occasionally the conviction was expressed that the prevalent disease was an aborted or modified form of yellow fever, led to the preparation of a questionnaire, a copy of which was sent to every physician in Louisiana. Altogether, about 2,000 physicians were circularized;



of this number, 442 replied. Since a number of the replies contained the simple statement that no cases had been encountered, or were otherwise unsuitable, 333 were selected as being representative, and the information obtained from them forms the basis for the present article. The results represent approximately 6,000 points.

In the formulation of the questionnaire it was necessary that the principle of brevity be in accord with the clarity of purpose of each question, a combination which it was hoped would at once induce the physician to take the trouble of answering, at the same time giving the maximum amount of useful data. The shortcomings were more easily recognized after the answers had been received and the contents tabulated. Many other points, such as relative percentages, could have been required without sacrificing space; as a matter of fact, they were frequently offered voluntarily, though for lack of definite request there was lack of uniformity.

The questionnaire asked for a general impression, based on personal experience, of the course of the disease. The number of cases reported is naturally only an approximation, but I venture to think it is a fairly accurate estimate of the number of cases that occurred in the state. In a large group of figures such as was supplied by the questionnaires, the exaggerations above and below the true status would tend to equalize one another in the general averages. As the data can be expressed numerically for the most part, this principle would hold for each reply.

It was believed that the twenty questions here reproduced would sufficiently cover the situation, while physicians were invited to offer additional remarks on points not covered by the questions on the reverse side of the questionnaire blank:

1. How many dengue patients did you attend?
2. Did there appear to be an incubation period (how long)?
3. What was the nature of the prodromal symptoms (how long)?
4. Did headache, pains or fever predominate in ushering in the acute onset?
5. Temperature: height and variations; relation to pulse?
6. Nature of pains (joint or muscular)?
7. Was there conjunctival injection?
8. Were there oral, nasal or gastro-intestinal symptoms (nature)?
9. Was there a flush or cyanotic condition of face or body preceding onset (nature, location)?
10. Were there remissions?
11. On what day did the remissions occur, as a rule?
12. Was there a rash present (day of disease, nature of rash, location)?
13. Was there any icterus? If so, at what period of the attack?
14. Any "black vomit" unaccounted for?
15. How long (days) did the attack last?
16. Was convalescence prolonged (great depression, etc.)? Any relapse?
17. Have you reason to suspect that dengue was an aborted or atypical form of yellow fever?
18. Were *Stegomyia* ("tiger," "day") mosquitoes numerous in houses of patients?
19. To what do you assign the cause of the decrease in number of cases (weather, screening, etc.)?
20. Were there any deaths attributable to dengue (ages, complications)?

#### NUMBER OF CASES

The number of cases estimated to have occurred within the state by 333 physicians is close to 30,000; actually, 29,827 were reported on the questionnaires,

while additional unclassified reports bring the total to 31,955. The number reported so far to the Louisiana State Board of Health up to date is 7,560. The impression derived during the survey is that the estimate is more nearly correct. On the basis of the final estimate, approximately 1.74 per cent. of the population of Louisiana suffered from the disease, i. e., there was a morbidity rate of 1,740 per hundred thousand. The rapidity with which it spread to virtually all sections of the state makes this feature in the epidemicity of dengue comparable to influenza; indeed, the questionnaires contain many expressions to the effect that the two diseases were in other respects very similar.

The geographic distribution of the cases, according to the southern, central and northern divisions of the state, is quite distinct. Taking the southern part of Louisiana as that part extending from the Mississippi line to the Gulf, including those parishes east of the Mississippi River, we find that 57 per cent. of the cases occurred in this district. Assuming the central section to be the territory northward from the southern Mississippi state line up to the approximate level of Vicksburg, the figures indicate very close to 10 per cent. of the total, while the northern part contains the remaining 32 per cent. It is quite obvious that the distribution depends to a great extent on the relative density of population, including, as the northern and southern divisions do, the large cities of Shreveport and New Orleans. Even though this is the case for the territory as a whole, it is quite probable that other conditions influenced the number of cases occurring in these two cities. Whatever these may be, the fact remains that the number of cases estimated to have existed in Orleans Parish is less than half the number of those given in the questionnaires for Caddo Parish, where the city of Shreveport is located, though the ratio between the populations is, respectively, 4.5 to 1. It is possible that attention to the eradication of the back yard mosquito breeding places has been more concentrated and effective in New Orleans than it has been in Shreveport. This would naturally be expected, since the demand and attainment of this objective has, in the case of New Orleans, the background of past experience with yellow fever epidemics which Shreveport has never had to even approximately the same degree.

#### INCUBATION PERIOD

The limits fixed for the incubation period vary between 3.4 and 6.7 days. This gives a general average of five days from 59.16 per cent. of definite answers to this question; while 16.22 per cent. answered in the negative, meaning probably that no period was perceptible, and 12.31 per cent. stated that the incubation was either uncertain or unknown. The same percentage offered no comment whatever.

It will be readily understood that this question can be very difficult to answer with any degree of accuracy, and the opinion will depend on a number of factors, the most uncertain of which will be the statement of the patient regarding a possible exposure.

#### PRODROMES

The prodromal symptoms, according to the records of the physicians, vary from four hours to six days. Obviously, the latter period is due to faulty observation and conclusions. The average seems to be about 1.8 days, or forty-three hours, though they may vary with the individual. Only twenty-eight answers to this phase of the question were given, so that the result



cannot be said to be dependable. Approximately 19.82 per cent. of the replies stated that the onset was either sudden, without any noteworthy prodromes, or the simple statement was made that none were noted.

Malaise is an expression by which the preliminary symptoms are described, though it is qualified in many cases, and, it may be assumed, comprises a number of manifestations not ordinarily included in the definition of the term. Thus the prodromal symptoms may be present as a mild conjunctivitis or coryza, together with indefinite aches and pains, sore throat, headache, nausea, anorexia, muscular soreness and backache, lassitude, languor, dizziness, and a slight chill or at least a feeling of chilliness. Two or three or more of these symptoms were noted by 51.35 per cent. of the practitioners, while 33.63 per cent. gave no answer whatever to the question. It is clear that none of these symptoms is in any way characteristic, but they are the heralds of nearly every infectious disease.

#### SYMPTOMS CHARACTERIZING THE ONSET

The acute attack is ushered in with headache, fever and pain. Sometimes a rigor precedes or accompanies the other three symptoms. The headache may be intense, with a feeling of tension in the eyeballs, or it may appear to be localized in the supra-orbital or occipital region. The pain in the eyeballs is often intensified on exposure to light. Again, the pains in the head are described as being neuralgic in character. Pain in the muscles, especially the lumbar group, and joint and long bone pains are almost invariably accompaniments in some degree of the three initial symptoms. These will be discussed later.

The relative percentages of observations of concomitant initial symptoms have been derived by grouping them as nearly as the replies would allow. First, the headache, fever and pain were accompanied or preceded by a chill in 9.31 per cent. of the instances. Secondly, headache, fever and pain alone as initial symptoms were noted by 86.29 per cent., while fever and pain alone, unaccompanied by headache but by a rigor, were observed by 2.7 per cent. of the physicians. Altogether, 12.01 per cent. of the replies show that a chill was present. The remaining 1.2 per cent. of the practitioners gave no answer to the question.

#### TEMPERATURE AND PULSE

Reports on the temperature are very complete and quite constant. The limits vary between 100.9 and 103.8 F., with a general average, which includes isolated figures arrived at by the observer himself, of 102.5. In certain instances a subnormal temperature has been observed during the period of invasion and frequently during convalescence. Exceptional temperatures as high as 106 were noted.

The pulse has been found to increase conformably with the temperatures in 44.74 per cent., and to be slower than would normally be expected in 25.53 per cent. of the cases, while the remainder of the questionnaires contained no observation on this point.

The actual pulse rates as given in the questionnaires are of no particular value in themselves, aside from the conclusions that one may derive. They varied during the fever period between 70 and 150.

#### JOINT AND MUSCLE PAINS

General pains in the body, which are so characteristic of dengue fever, are described in a variety of ways, which, however, leave no doubt what is meant. The

muscular variety is usually localized in the muscles of the back, especially in the lumbar region. It is called backache and "spinal irritation." Aching pains in the muscles of the legs are also frequently noted.

The bone and joint pains are described as "a feeling as though the bone was being broken." The long bones, especially those of the limbs, appear to be principally involved. The joint pains are indefinite, and seem to be generally apprehended more as a feeling of soreness. No instance of swelling or inflammation of a joint is given.

These pains have been classified according to occurrence, together or as one or the other variety predominated. The percentages noted were: joint and muscle together in 37.54 per cent.; joint alone in 14.42 per cent., and muscular alone in 46.55 per cent. of the replies.

#### CONJUNCTIVAL INJECTION

The presence of injection of the conjunctiva was noted frequently at the beginning and during the course of the disease. It appeared in about 35 per cent. of the infections. No effort is made to interpret its significance here; it would appear, however, to be a fairly constant symptom. Affirmative replies were received from 71.17 per cent. of the physicians, while 27.03 per cent. did not see this symptom. Only 1.8 per cent. gave no answer to the question.

#### PRESENCE AND NATURE OF ORAL, NASAL AND GASTRO-INTESTINAL SYMPTOMS

The oral symptoms commonly noted were perverted taste, the complaint being frequently encountered that everything, even water, tasted bitter. Very competent observers noted this aberration in themselves and in their patients, and it occurred frequently as an outstanding phenomenon among the replies.

Other oral symptoms are a heavily furred tongue, ulcerated and bleeding gums, and stomatitis with hemorrhage.

The nose and throat symptoms noted were epistaxis, coryza, inflammation of the nasopharynx, often with bleeding, and tonsillitis.

The gastro-intestinal manifestations are the most constant and characteristic. Anorexia and nausea, accompanied by vertigo and severe vomiting, were by far the most frequent. Vomiting of blood and bile, tarry and bloody stools, and severe diarrhea are also frequent occurrences. Abdominal pain, apparently without special localization, and diarrhea approximating acute dysentery were also noted. According to the reports, vomiting averaged about 31 per cent. of the infections. One physician noted abdominal pain in 20 per cent. of his cases, while the reports of four physicians show an average of 12 per cent. of their patients as having diarrhea. Apparently about 45 per cent. of all patients had gastro-intestinal symptoms of some kind, though the percentages are not reliable. It is unfortunate that the percentage of patients having certain symptoms was not specified in the questionnaire. Those cited are averages of voluntary statements only, and are doubtless much fewer than would have been given had space been allotted. However, in summing up the replies to this question the results prove quite satisfactory. Thus, 38.49 per cent. of the physicians report having observed gastro-intestinal symptoms alone; 29.73 per cent., gastro-intestinal complicated by oral and nasal symptoms, and 15.02 per cent., only oral



and nasal symptoms; 9.31 per cent. either saw none at all or failed entirely to answer this question.

#### INITIAL FLUSH OR CYANOSIS

A flushed or cyanotic appearance of the face or body was not infrequently observed. It was thought that possibly this phenomenon might be classed as an initial manifestation, though there is some doubt as to whether it was not due to the febrile reaction. Among the replies received, 49.25 per cent. were in the affirmative, 44.45 per cent. negative, and 2.40 per cent. made no observation; at least, no definite cyanosis was seen. The remainder, 3.90 per cent., made no comment whatever.

#### THE REMISSION

The question of remission is an important one, because it is stated as being a characteristic of the dengue infection. Twenty physicians report the percentage of remission noted among their cases. The average is approximately 19 per cent., though the estimates vary between 2 and 60 per cent. for different localities. The percentage of replies, however, shows that remissions were observed very frequently. Thus, 76.27 per cent. of the observers noted a remission, and the remainder, 22.52 per cent., did not.

The number of days that elapsed from the commencement of the fever before the remission occurred varies between 3.2 and 4.9. The general average, taking isolated estimates, is 3.6. Roughly, this means that the remission may be expected on the third or fourth day of the disease.

The remission lasts only a short time, during which the patient may feel comparatively well; it varies from a few hours to a day or more, and the attack begins anew. No reliable data were collected on this phase of the infection, though voluntary statements were occasionally included in the replies. The fact that remissions do occur, the relative frequency of observation, and the period, is of much more importance than the length of the remission. Sometimes the question was answered by the statement that the remissions occurred daily. These replies were taken to refer to the difference between the evening and morning temperatures, and cannot be said to constitute a typical remission as the term is ordinarily understood.

#### THE ERUPTION

The eruption that occurs in dengue fever is of considerable differential diagnostic importance. It assists materially in deciding whether a patient is attacked by influenza, or whether the physician is dealing with an atypical case of yellow fever. Unfortunately, it is not a constant symptom; 61.86 per cent. of the questionnaires contain the observation.

The rash has been described as morbilliform, scarlatiniform, as resembling the eruption of German measles, as consisting of papules, macules or rose spots, or as being erythematous and petechial. An eruption resembling urticaria is occasionally mentioned. It may appear, or prevail, on the face, forehead, arms, trunk and limbs, or it may be disseminated over the head, face and body and the extensor surface of the arms; it may be localized on the abdomen, the chest, the back or the forehead.

The rash may appear during the febrile period, or it may occur after the fever declines. It generally terminates with desquamation and intense itching.

Though it may be earlier or later, the average period of development is on the fourth day of the disease.

The replies may be divided roughly into three types most frequently mentioned: an eruption resembling measles, which was noted in 18.32 per cent. of the answers; the scarlatiniform, in 5.11 per cent., and the urticarial form in 2.4 per cent. No eruption was seen by 10.51 per cent., and 1.8 per cent. gave no reply.

Thirty-eight physicians report the approximate percentage of their cases in which an eruption of one sort or another occurred. They vary between 5 and 75 per cent., with a general average of approximately 15 per cent.

#### ICTERUS

The question of the presence or absence of icterus and the day of appearance has some importance. Icterus was noted in 28.23 per cent. of the answers. The remainder of the practitioners did not see it. It seems to have been observed at very different periods of the disease, from the fourth to the seventh day, during convalescence, just after the fever declined, or shortly after it began. Furthermore, it was found diffuse or confined to the sclera and conjunctivae.

#### "BLACK VOMIT"

In view of the impression that many gained while noting the course of the disease, and of the rumors and reports that "black vomit", so characteristic of yellow fever, was occurring in many cases, it was decided to ask the physicians in general regarding their experience with this symptom. Of the total number replying to the questionnaire, 15.32 per cent. observed "black vomit" in some form, while 84.40 per cent. answered in the negative. Four physicians reported the percentage of their cases, and these figures vary between 2 and 10 per cent., with an average of 6 for the four observations.

It seems probable that some of these instances were true "black vomit" in the sense that the material vomited consisted of blood originating within the stomach itself, acted on by the gastric juice, while no doubt the majority owed the origin of the vomited material to blood from the pharynx, the gums, the nose or the tonsils. What part hemorrhage from gastric ulcer played is, of course, not known; but it will be recalled that hematemesis occurred frequently enough among the gastro-intestinal symptoms to make hemorrhage from the gastric mucosa and the formation of the acid hematin within the stomach, i. e., typical "black vomit," a possibility. The mention of dark colored bile as a constituent of the vomitus leads one to believe that this may have been the reason for the observation in many instances.

#### DURATION OF THE ATTACK

The length of an attack was often difficult to define with accuracy. Many cases were extremely mild, and seemed to last only one or two days. Probably a large number were complicated with malaria, which appreciably altered the duration and course of the dengue infection.

The average of the duration limits as recorded in the questionnaire replies varies between three and nine-tenths and eight days. The general average of the limits, together with isolated estimates, puts the duration at six days. Probably both results represent fairly correct averages for the duration of the infection, and they are borne out very well by independent averages taken on five series of from sixty-three to sixty-five replies each.



## CONVALESCENCE AND RELAPSE

Prolonged convalescence with a greater or lesser degree of depression was observed by 85.59 per cent. of the physicians answering the questionnaire. Only 11.41 per cent. saw no depression, and 3 per cent. offered no reply. Weakness and asthenia frequently followed the attack, and insomnia during convalescence, was comparatively frequent. Convalescence may be prolonged for as much as three weeks.

Relapse was reported in 33.33 per cent. of the questionnaires, and 25.22 per cent. of the replies stated that no relapses had been noted. Some patients are reported as having had dengue before.

## EXCEPTIONAL COMPLICATIONS AND SYMPTOMS

There appear not to have been any complications attributable to dengue as the inciting cause. The disease itself, however, was frequently superimposed on some other malady, more especially malaria in those regions in which the latter is particularly prevalent, and, of course, tuberculosis, pneumonia and organic diseases. The deaths due to the interaction of dengue with other ailments will be considered later on.

Exceptional symptoms have occurred only in women. Menorrhagia and premature menstruation were reported a number of times, and it was found by some observers that pregnant patients suffered more severely than others, though there appear not to have been abortions, and the women were delivered at term. Deaths during pregnancy complicated by dengue and other diseases have occurred. In two instances in which blood counts were made, very marked leukopenia was observed.

IS DENGUE AN ABORTED OR ATYPICAL FORM OF  
YELLOW FEVER?

This is the question on which it was hoped the questionnaire would throw light. In fact, it was rumors of "black vomit" as well as the atypical course so frequently spoken of as not conforming to the textbook description of dengue that instigated the questionnaire. The basis for the tradition of yellow fever succeeding the outbreak of an epidemic of dengue has already been explained.

The overwhelming mass of opinion was negative, there being 285, or 85.59 per cent. of the 333 physicians, answering with a decided no. Nevertheless, twenty-one, or 6.3 per cent., believed that it was, and some of these answers were from those with experience in yellow fever and dengue epidemics in the past. Twenty-three, or 6.91 per cent., were doubtful, and four, or 1.2 per cent., failed to respond.

That the majority opinion must be accepted in this case does not nullify the weighty arguments of others who maintain that the striking similarity of the two diseases in many cases and the mode of transmission by *Aedes aegypti* in both instances indicate not a specific organism for each one, but two organisms belonging either to the same genus or to the same family. The courses of benign and malignant tertian malaria is taken as an analogy in point.

PRESENCE OF STEGOMYIA (AEDES) MOSQUITO  
WITHIN THE HOUSES

*Aedes aegypti*, formerly known as *Stegomyia calopus* and *Aedes calopus*, and familiar to large numbers of people by the colloquial terms "little house," "tiger," "day," "calico" and "yellow fever" mosquito, is suffi-

ciently well known to the medical profession of the state to make their replies carry weight. At any rate, if any mosquitoes were detected within the homes by the attendant physicians during their day visits, it is reasonably certain that these were *Aedes*. At any rate, 212, or 63.67 per cent., answer that mosquitoes were found in the homes of the patients, 25.22 per cent. say that none were noted, and 11.11 per cent. were either doubtful whether the species was *Aedes*, or declined to express any opinion.

## CAUSES FOR THE DECREASE

Though there may have been some doubt in the mind as to the presence of mosquitoes in the houses of the patients, there is none regarding the causes leading to the decrease in the number of cases in which alterations in weather conditions prevailed or prophylactic measures were adopted. Thus, 44.45 per cent. attribute the decrease to the weather or temperature change; 11.41 per cent. to a combination of weather and screens; 10.21 per cent., to screening, and 0.6 per cent., to mosquito eradication measures. Thirty-one physicians, or 9.31 per cent., attribute the decrease to the fact that all the susceptibles had contracted the disease; 21.62 per cent. know of no definite reason for the decline, and 2.4 per cent. report no decrease.

The answers to this question show that two thirds of the observers believe that weather and screening, including, of course, the isolation of the patients under mosquito bars, as is frequently pointed out in the replies, either considered separately or as acting together, reacted to prevent the spread of the disease and to stamp out the epidemic. It is a tacit admission of the vectorship, regardless of whether they are able to make a positive identification, for the hypothesis of an air-borne dengue epidemic would certainly not be regarded as tenable by the modern physician.

## DEATHS ATTRIBUTABLE TO DENGUE

No deaths attributable to dengue as the immediate cause have occurred, though there were thirty-eight in which dengue was a concomitant of some other disease. This is based on the answers of twenty-eight, or 8.41 per cent., of those who replied to this question.

The original diseases, the lethal termination of which dengue appears to have hastened are: kidney trouble, two cases; diseases of the heart and arteries, five cases; cholecystitis, one case; pneumonia, five cases; ileocolitis and gastro-intestinal disturbances in infants, two cases; diabetes, one case; tuberculosis, three cases; meningitis, one case; malaria and pneumonia combined, one case; influenza, one case; pregnancy with gastro-intestinal complications, four cases, and, finally, twelve deaths due to indefinite or undetermined causes, including those patients suffering from exposure, improper care or malnutrition. The ages varied from new-born infants to the aged. It appears that, in general, the latter have borne the infection less readily than younger persons.

## SUMMARY

The data obtained from the questionnaires I believe justify the following general clinical picture of dengue fever as it occurred during the epidemic in Louisiana:

The period of incubation or invasion may vary between three and seven days, with an average of five days elapsing from the time of possible exposure until the appearance of the prodromal symptoms.



The prodromes may last from a few hours to about two days as an average, occasionally longer. They may consist of a feeling of indisposition without precise symptoms, or there may be a sensation of chilliness, indefinite aches and pains, a slight headache or a rise in temperature. There frequently is loss of appetite. In approximately 20 per cent. of the reports, the onset without noticeable prodromes is mentioned.

The acute attack is ushered in by a fever, pains, headache or chill, either two or three or perhaps all four of these symptoms being present at the same time. Chill, accompanying fever and pains or fever, pains and headache occurred forty times (12.01 per cent.) among the questionnaires. The headache may be mild or very severe, with a tendency to localization. The pain may or may not be localized in the eyeball, or it may be the muscular and joint pain which is so characteristic.

The temperature during an attack has an average approximate variation between 101 and 104 F., with a general average of 102.5. The higher average variation may be exceeded in isolated cases, reaching, in some instances, 106.

The pulse has usually been found to increase fairly proportionately to the temperature (44.74 per cent.), but many instances of a slow pulse have also been noted (25.53 per cent.). The rate varied between 70 and 150.

The muscular pain was more pronounced than the joint and bone pains, there being 14.42 per cent. accorded to the latter, and 46.55 per cent. of the replies to the former variety. Frequently (37.54 per cent.) bone and muscular pains occurred together and apparently were indistinguishable in degree of intensity. The muscular pains are most frequent in the muscles of the back, and seem to be most pronounced in the lumbar region.

The bone and joint pains are referred to the long bones and to joints more frequently used. There is no sign of acute inflammation of the joints noted.

Conjunctival injection may or may not be present. It is recorded in 71.17 per cent. of the replies.

Oral, nasal and gastro-intestinal symptoms are very frequent. They may consist of coryza, epistaxis, pharyngitis with hemorrhage, and stomatitis; bleeding and ulcerated gums and aberration in the taste sense have been noted. Nausea with intense vomiting of bile and blood are of common occurrence. Further symptoms of gastro-intestinal disturbance are the diarrheal and bloody stools. Gastro-intestinal symptoms predominate to the extent of 38.44 per cent.

A flush or cyanotic condition of the face or chest was noted in 49.25 per cent. of the replies.

Remissions were comparatively frequent, 49.25 per cent. of the answers being in the affirmative. They occurred, as a rule, between the third and fourth day of the disease.

Rash was noted by 206 observers (61.85 per cent.). It is variously described, but the morbilliform and scarlatiniform eruptions were distinguished, respectively, in 18.32 and 5.11 per cent. of the instances. It seems probable that, if the many other forms of rash had been properly described, they would have fallen for the most part within these two categories.

The rash appeared, on an average, on the fourth day.

Icterus occurred with relative frequency; ninety-four, or 28.23 per cent., of the replies note this symptom. The time of its appearance may vary from the

second to the seventh day, averaging about the fourth, but these figures are unreliable. It has been known to appear after convalescence had begun.

"Black vomit," which apparently could not be accounted for as having originated from local oral, nasal or pharyngeal conditions, was remarked by fifty-one, or 15.32 per cent., of the observers. The presence of tarry and bloody stools accompanied the hematemesis frequently.

The attack may last from four to eight days, with a general average course of six days. Occasionally the duration was only two or three days, sometimes from eight to ten days, and even longer.

Convalescence was prolonged as a rule (85.59 per cent.), sometimes for two or three weeks. Depression was very frequent. In 11.41 per cent. of the instances, convalescence without marked depression is recorded. One hundred and one physicians (30.33 per cent.) report relapses.

Only twenty-one, or 6.30 per cent., of the observers suspected that the dengue fever epidemic in Louisiana was an atypical or aborted form of yellow fever; the overwhelming majority (85.69 per cent.) do not.

The presence of *Aedes aegypti* within the houses of patients was noted by 63.67 per cent. of the physicians; and, while there is no proof that it is the sole vector, it is doubtless a very active one.

Cold weather and screens were responsible for the decline of the epidemic (66.07 per cent.), while thirty-one replies (9.31 per cent.) indicate that it disappeared because all those in a community who were susceptible had had the infection.

There were no deaths directly due to dengue fever, so far as is known. Of the thirty-eight that were recorded, it was always superimposed on some other disease, though the correct diagnosis of the latter could not always be secured.

#### CONCLUSIONS

Comparing the general course of dengue fever in Louisiana with the standard textbook descriptions of that disease, the following conclusions seem justified:

1. With one exception, the syndrome as observed by the physicians in general throughout the state conforms very closely to the clinical entity called dengue fever. More or less deviation from the type in many instances does not in any way modify the conclusion.

2. An exception occurred in the remarkably frequent occurrence of gastro-intestinal symptoms, notably hematemesis, regardless of the source of the blood and of melena.

3. While the fact that a few of the practitioners regarded the cases as an atypical form of yellow fever is worthy of consideration, it does not warrant the acceptance of this view; the verification of such an hypothesis would demand experimental evidence.

4. The insect known as *Aedes aegypti* and commonly called the "tiger," "yellow fever," "house," "little day" or "calico" and *Stegomyia* mosquito was the principal if not the sole vector of the disease, and its widespread distribution constitutes an ever present menace, which would be acutely appreciated should one or more unrecognized cases of yellow fever be introduced into the state.

5. The principal causes of the decline and cessation of the epidemic were the sudden change to colder weather which halted mosquito breeding, and screening, including protection of patients by mosquito netting,



or both. It is possible that sanitation and destruction of mosquito breeding places around homes played a rôle.

6. Finally, the death rate from dengue itself has been nil, though as a complication of other diseases dengue may have materially hastened the outcome.

## DIAGNOSIS AND RELIEF OF STERILITY

A NEW PROCEDURE \*

ARTHUR H. CURTIS, M.D.

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Sterility in the absence of a clinically demonstrable pathologic condition of the pelvis is of common occurrence. It is probable that infection, in contrast with noninfective conditions, may be held responsible for most of these cases, if carefully employed therapeutic measures fail to relieve the sterility.<sup>1</sup>

In further attempts to find evidence of pathologic changes in the pelvis in women who fail to become pregnant, we have carefully searched for minor tubal lesions. A study of fallopian tubes removed from a series of 300 patients revealed that tubes without evident gross alteration, or at the most presenting only slight adhesions, quite often are crippled by healed inflammatory changes of the mucous membrane. Such lesions within the tubes easily escape detection in the operating room; palpable thickening may be wanting, and probing of the tube is a gross procedure at best.

During the last two years, when it has been necessary to open the abdomen of sterile patients, we have employed Luer syringe air inflation of apparently patent fallopian tubes. Under favorable circumstances this simple procedure is helpful in several ways; it reveals the presence of otherwise undemonstrable obstructions within the tube; minor strictures, when discovered, may be overcome by forcible syringe pressure; the anatomic limitations of grossly palpable obstruction, possibly amenable to plastic operation, may be more definitely determined, and, at the completion of plastic operations on the tube, it is possible to test the patency of the reconstructed lumen.

The records of a few selected patients are worthy of brief mention:

In one case of great interest, a woman, aged 34, married four and one-half years, suffered from persistent pelvic pain and complained of sterility. The husband gave a history of

chronic gonorrhea, which disappeared shortly after marriage. At operation, the right tube, which was found greatly thickened, distorted and adherent, was removed. The left tube presented a few cobweb adhesions, but otherwise was grossly normal. Syringe inflation of this tube revealed obstruction 3 cm. from the uterus. Employment of considerable additional pressure resulted in free passage of air through the place of constriction, with reestablishment of the lumen. This patient is now eight months pregnant.

On three other occasions, it has been possible to demonstrate moderate obstruction of the tube associated with open fimbriae and freedom from palpable induration.

An illustration of the helpfulness of air inflation in determining the choice of surgical measures is afforded by the case of a patient, sterile since performance of an instrumental abortion, who presented a tube which appeared constricted in only one limited region. Syringe inflation demonstrated much more extensive obstruction than was anticipated, thus contraindicating plastic operation.

A patient of 40, with a uterine fibroid, and giving a history of sterility, presented a somewhat similar condition. The fimbriae were free, but inflation demonstrated obstruction throughout the mesial half of each tube, although direct palpation of the tubes revealed no more than a suggestion of thickening. Plastic operation would have been attempted if inflation had not demonstrated its futility.

### COMMENT

If one fallopian tube requires removal, a second slightly diseased tube, suspected of being sterile, need not be sacrificed at the time of operation provided its lumen can be opened to the free passage of air. This conservative measure must, of necessity, be dependent on assurance that the patient will be free from exposure to subsequent venereal infection.

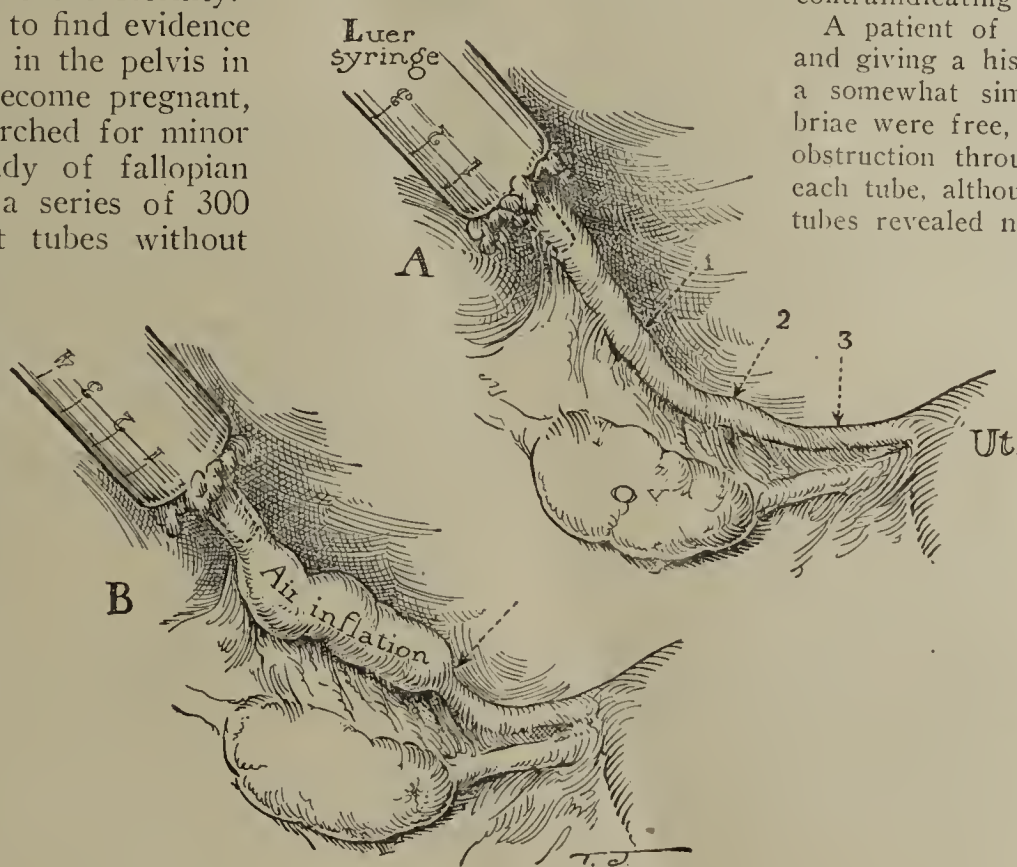
Such tubes should be distended with air only after complete disappearance of infection.

### CONCLUSION

Air inflation of the fallopian tubes, by means of a Luer syringe placed at the fimbriated extremity of the tube, is of diagnostic and therapeutic value in selected sterile patients who are being subjected to abdominal operation.

104 South Michigan Avenue.

**Household Remedies for Jaundice.**—F. Fernández Martínez calls attention to an ancient Greek work which advocates the juice of *Cucumis silvestris*, the wild bitter cucumber, in treatment of jaundice and for pain in the ears and for local application to bruises. The description of its application and action in the days of Cleopatra are almost exactly the same as in our modern pharmacopeia for elaterium. His article is published in *Archivos Españoles de Enfermedades del Aparato Digestivo* 3:593, 1920.



A, a grossly normal fallopian tube, such as is often found when surgery, performed for relief of other lesions, permits intra-abdominal examination of sterile patients: 1, 2 and 3, points of tubal obstruction which may escape diagnosis by direct palpation; B, air inflation of the tube, revealing an obstruction. Additional pressure may overcome moderate degrees of occlusion, with complete reestablishment of the lumen.

\* Read before the Chicago Gynecological Society, Jan. 19, 1923.  
\* From the pathologic laboratory and the gynecologic service of St. Luke's Hospital.

1. Symposium on Sterility, Tr. Am. Gynec. Soc. 45:129, 1920.  
Reynolds, E., and Macomber, D.: Certain Dietary Factors in the Causation of Sterility in Rats, Tr. Am. Gynec. Soc. 46:99, 1921.



PROTEIN SENSITIZATION \*

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During the college year 1921-1922, a diagnostic and prophylactic study was made of the majority of male students having histories of hay-fever, asthma, eczema or recurring urticaria, at Cornell University. An attempt was made to diagnose these cases by means of allergic reactions to pollen, epidermal, food or bacterial proteins, and to desensitize the students by subcutaneous injections of the offending protein or by having them avoid the offending protein or proteins. The results of both studies are of interest, because of some new additions to the field, and because of their general agreement with the results of other investigators.

HAY-FEVER DIAGNOSTIC STUDY

Of the four kinds of disease studied, hay-fever offered the easiest approach to diagnosis. It was rare indeed to find an uncomplicated spring hay-fever case which did not respond to one or more of the group of pollen proteins which are listed in Table 1. Very

TABLE 1.—REACTIONS IN FOURTEEN CASES OF UNCOMPLICATED SPRING HAY-FEVER

Pollen	Positive	Negative
June grass.....	11	3
Red-top.....	12	2
Orchard grass.....	9	5
Timothy.....	10	4
Rose.....	2	12
Clover.....	5	9
Daisy.....	1	13

satisfactory work was done with the fall cases by the five pollen proteins listed in Table 2.

The tests were made by the cutaneous method, the scratches being kept constantly moist with the pollen protein solutions. Readings of the reactions were taken at the expiration of twenty minutes. The first applications of the pollen protein solutions were well rubbed into the scratches. Since the scratches were kept constantly moist for the twenty minute period, I believe the size of the reactions was larger than if the first applications had been allowed to dry on the scratches before the end of the twenty minute period. Since positive and negative reactions are distinguished by their relative sizes, and since of two pollens belonging to the same botanic family the one giving the larger skin reaction is selected for prophylaxis, it

TABLE 2.—REACTIONS IN TWENTY-FIVE CASES OF UNCOMPLICATED FALL HAY-FEVER

Pollen	Positive	Negative
Ragweed, short.....	24	1
Ragweed, giant.....	17	8
Goldenrod.....	9	16
Daisy.....	15	10
Corn.....	2	23

seemed essential to obtain as large diagnostic reactions as possible in order to make the diagnosis and pollen selection for prophylaxis as easy as possible.

SIZE OF DIAGNOSTIC REACTIONS

Reactions less than 3/16 inch in diameter were considered due to trauma, and hence negative. Those

from 3/16 to 3/8 inch in diameter were called one plus; from 3/8 to 9/16 inch, two plus; from 9/16 to 3/4 inch (size of dime), three plus; from 3/4 to 7/8 inch (size of five cent piece), four plus, and from 7/8 to 1 inch (size of quarter) or larger, five plus.

From Tables 1, 2 and 3 it will be seen that the chief pollen offenders in the spring were the grasses, whereas the ragweeds and the daisy were the chief offenders in

TABLE 3.—REACTIONS IN EIGHT CASES OF COMBINED SPRING AND FALL HAY-FEVER

Pollen	Positive	Negative
June grass.....	6	2
Red-top.....	6	2
Orchard grass.....	5	3
Timothy.....	6	2
Rose.....	0	8
Clover.....	2	6
Daisy.....	4	4
Dandelion.....	1	7
Ragweed, short.....	8	0
Ragweed, giant.....	6	2
Goldenrod.....	2	6
Corn.....	5	3

the fall. Corn reactions were frequently found in the fall hay-fever cases. These were important in cases of individuals who lived in rural districts or spent the months of August and September in the country. The large size of the corn pollen limits the distance it can be carried by the wind, as noted by Scheppegrell.<sup>1</sup> It is not likely that corn pollen even in the highest winds is blown more than several hundred yards. The limited amount of corn grown in the cities made the corn pollen reaction negligible in persons who spent the months of August and September in the city. Persons who lived in the country districts and showed corn pollen reactions received the benefit of this reaction as a diagnostic factor.

TABLE 4.—SIZE OF REACTIONS IN FORTY-SEVEN CASES OF HAY-FEVER

Pollen	5 Plus	4 Plus	3 Plus	2 Plus	1 Plus
June grass.....	2	4	8	3	1
Red-top.....	1	2	4	7	4
Orchard grass.....	0	4	4	5	2
Timothy.....	0	3	8	3	2
Clover.....	0	0	0	3	6
Rose.....	0	0	0	0	2
Daisy.....	0	1	5	8	8
Ragweed, short.....	8	13	4	3	4
Ragweed, tall.....	0	1	10	11	4
Goldenrod.....	0	0	2	5	5
Corn.....	1	1	2	2	3
Dandelion.....	0	1	0	0	0

June grass, red-top, orchard grass, and timothy all belong to the family of *Gramineae*. In persons reacting to more than one of these grasses, no attempt was made to desensitize with pollen extracts of all the positive grasses; but only with the one which showed the largest diagnostic reaction. A similar botanic grouping occurs in the plants of the fall hay-fever cases. In persons reacting to members of more than one botanic family, an attempt was made to desensitize with the representative member of each family, as determined by cutaneous tests. It is interesting to note, in Table 4, how the size of the reactions varied in the forty-seven cases studied.

Rose pollen, it is seen, was negligible as a hay-fever factor. Many believed that roses caused their hay-fever, and they often spoke of their spring hay-fever as "rose fever." A negative or small reaction sufficed

\* From the Department of Hygiene and Preventive Medicine, Cornell University.  
1. Scheppegrell, William: Hay-Fever and Asthma, Philadelphia, Lea and Febiger, 1922, pp. 128 and 159.



to convince them of their error. Goldenrod tests also were superfluous, as the pollen of the goldenrod is sticky, and is not carried by the wind, the plant being insect pollinated. The individual may have had hay-fever if he smelled the goldenrod, but it is more likely that he inhaled some ragweed pollen that had fallen on the goldenrod.

In several cases, I found reactions to the daisy pollen extract alone, and attempts to desensitize with the daisy pollen extract have been effective. Scheppegrell<sup>2</sup> states that daisies "do not cause hay-fever, although a reaction may result in sensitized nostrils by direct contact with the flowers." My patients have not been in direct contact with daisies and have had hay-fever each year until the last, when they received prophylaxis with the daisy pollen extract, with marked benefit. The number of my cases is small, and perhaps their relief was a coincidence, but I am inclined to believe that there is a true daisy pollen hay-fever, occurring without direct contact with the flowers.

HEREDITY IN HAY-FEVER

In my forty-seven cases of hay-fever, 31 per cent. of the patients had immediate relatives who were hay-fever victims.

TABLE 5.—RESULTS OF PROPHYLACTIC STUDY OF FOURTEEN CASES OF UNCOMPLICATED SPRING HAY-FEVER

Pollen Protein Used	Series Completed or Not	Size of Diagnostic Reaction	Percentage of Prophylaxis
1. Red-top.....	yes	3 plus	75
2. June grass.....	yes	4 plus	75
3. Clover.....	yes	2 plus	90
4. June grass and daisy.....	no	3 plus each	90
5. June grass.....	no	4 plus	75
6. June grass.....	no	5 plus	75
7. Timothy.....	yes	3 plus	75
8. Orchard grass.....	no	4 plus	50
9. June grass.....	no	4 plus	75
10. Orchard grass.....	yes	4 plus	100
11. Orchard grass.....	no	4 plus	70
12. June grass.....	no	5 plus	50
13. Red-top.....	no	4 plus	90
14. Orchard grass.....	no	2 plus	100

Of Scheppegrell's<sup>3</sup> 1,000 patients, 37 per cent. had immediate relatives who had hay-fever. The two series agree very well.

PROPORTION OF SPRING AND FALL HAY-FEVER CASES

Scheppegrell's<sup>4</sup> series showed this ratio: 7 per cent. spring; 38 per cent. fall, and 55 per cent. spring and fall combined. These cases covered a wide range of ages. My series, much smaller in number, and more selected as the patients were, with three exceptions, between the ages of 17 and 25, showed the following ratio: 30 per cent. spring; 53 per cent. fall, and 17 per cent. spring and fall combined.

These figures compare very favorably with Williams'<sup>5</sup> series, which showed a ratio of 25 per cent. spring; 58 per cent. fall, and 16 per cent. spring and fall combined.

HAY-FEVER

*Prophylactic Study.*—Hypodermic injections were made at intervals of five days with the specific pollen protein extracts, in dilutions of 1:10,000, 1:5,000, 1:1,000, 1:500 and 1:100. Skin tests of the dilution to be injected were watched for twenty minutes. If any reaction was noted at the site of the test, the previous

injection was repeated, in order to prevent any constitutional reaction. The injections were begun approximately seventy-five days before the expected onset of the hay-fever season. The amounts injected were: 1:10,000: 0.1, 0.2, 0.3 c.c.; 1:5,000: 0.2, 0.3, 0.4 c.c.; 1:1,000: 0.2, 0.3, 0.4 c.c.; 1:500: 0.2, 0.3, 0.4 c.c.; 1:100: 1 minim, increased by 1 minim every five days until 5 minims had been given at one time.

TABLE 6.—RESULTS OF PROPHYLACTIC STUDIES OF TWENTY-FIVE CASES OF UNCOMPLICATED FALL HAY-FEVER

Pollen Protein Used	Series Completed or Not	Size of Diagnostic Reaction	Percentage of Prophylaxis
1. Ragweed, short.....	yes	2 plus	100
2. Ragweed, short.....	yes	3 plus	85
3. Ragweed, short.....	yes	5 plus	50
4. Ragweed, short.....	yes	5 plus	50
5. Ragweed, giant, and clover.....	yes	2 plus each	50
6. Ragweed, short.....	yes	4 plus	60
7. Ragweed, short.....	yes	5 plus	35
8. Ragweed, short.....	yes	5 plus	10
9. Ragweed, short, and eorn.....	yes	4 plus and 2 plus	50
10. Ragweed, short.....	no	4 plus	50
11. Ragweed, short.....	no	4 plus	50
12. Ragweed, short.....	no	5 plus	25
13. Ragweed, short.....	yes	5 plus	70
14. Ragweed, short.....	yes	4 plus	80
15. Ragweed, short.....	yes	4 plus	100
16. Ragweed, short.....	yes	4 plus	40
17. Ragweed, short.....	no	5 plus	95
18. Ragweed, short.....	yes	4 plus	20
19. Ragweed, short.....	yes	3 plus	50
20. Ragweed, short.....	yes	4 plus	70
21. Ragweed, short.....	yes	3 plus	zero
22. Ragweed, short.....	yes	4 plus	25
23. Ragweed, short.....	yes	4 plus	80
24. Radweed, short.....	yes	5 plus	75
25. Ragweed, giant.....	yes	3 plus	100

This is the first year that I have used the 1:100 dilution. I believe that it has been of distinct benefit. Some individuals were unable to tolerate this strength, as shown by their skin test of it, and had to be content to stop prophylactic measures when they had received the 1:500 dilution.

I have expressed the results obtained in the prophylactic study, by the percentage of hay-fever relief obtained. This percentage is entirely subjective and is the student's estimate of the amount of benefit he derived from the attempted desensitization. This is

TABLE 7.—RESULTS OF PROPHYLACTIC STUDIES IN EIGHT COMBINED SPRING AND FALL HAY-FEVER CASES

Pollen Protein Used	Series Completed or Not	Size of Diagnostic Reaction	Percentage of Prophylaxis
1. Red-top.....	yes	5 plus	90
2. Corn.....	yes	5 plus	90
3. Clover.....	yes	1 plus	85
4. Daisy.....	yes	3 plus	85
5. Timothy.....	yes	1 plus	90
6. Ragweed, short.....	yes	2 plus	50
7. Dandelion and timothy.....	yes	4 plus and 3 plus	100
8. Ragweed, short, and eorn.....	no	4 plus and 3 plus	75
9. June grass.....	yes	2 plus	zero
10. Ragweed, short.....	no	3 plus	50
11. June grass.....	yes	3 plus	70
12. Ragweed, short, and eorn.....	no	4 plus and 3 plus	zero
13. June grass.....	yes	3 plus	70
14. Ragweed, giant.....	no	2 plus	100
15. Timothy.....	yes	4 plus	90
16. Ragweed, short, and eorn.....	yes	2 plus	40

not an accurate way of determining results of a scientific procedure, yet in hay-fever studies I know of no better way.

It can be seen that all but three received 75 per cent. or more of benefit, and that these three did not receive the entire prophylactic series of injections.

The results in the fall series were on the whole not as good as in the spring series; which corresponds with the findings of other investigators.

2. Scheppegrell: Hay-Fever and Asthma, p. 90.  
3. Scheppegrell: Hay-Fever and Asthma, p. 117.  
4. Scheppegrell (Footnote 1, p. 127).  
5. Williams, W. C.: Hay-Fever and Its Treatment with Pollen Extracts, Mil. Surgeon, October, 1921.



*Summary of Results.*—Of my patients, 12.5 per cent. received 100 per cent. relief; 38 per cent., between 75 and 95 per cent. relief; 31 per cent., between 50 and 74 per cent.; 12.5 per cent., between 20 and 49 per cent., and 6 per cent., little or no relief.

Vander Veer's<sup>6</sup> series showed 25 per cent. entirely relieved, 50 per cent. quite comfortable, 15 per cent. slightly relieved and 10 per cent. not helped.

Williams's<sup>5</sup> series of fall hay-fever cases showed 18 per cent. to have 100 per cent. relief; 27 per cent., 80 per cent. relief; 36 per cent., 50 per cent. relief, and 18 per cent., no benefit.

In general, the three series agree very well.

#### DIAGNOSTIC AND PROPHYLACTIC STUDY OF ASTHMA CASES

True bronchial asthma is caused by sensitization to some of the proteins of pollens, foods, animal epidermis (including hair, feathers, wool and dander) or bacteria, or to any combination of these proteins.

Hence, the study of the asthma cases was more complex than the study of the hay-fever cases. The number of pollen protein tests made was the same in the two diseases; but the number of food protein tests that could have been made were almost limitless. Some of the patients reacted to the protein of a food so common as wheat or milk, others to one so infrequently eaten as mustard or buckwheat.

The tests were made in the same manner as those in the hay-fever cases. Reactions with food proteins usually appeared within an hour, but rarely so soon as with pollen proteins.

In this series of seven asthmatics, it seemed easier to remove the offending food from the diet than to try desensitization with the protein of the food.

#### REPORT OF CASES

CASE 1.—C. gave positive reactions to horse dander, wheat, tomato, pea, cabbage, bean, mustard, pecan, oyster, rice, short ragweed, giant ragweed, goldenrod and daisy. He received the entire prophylactic series of horse dander protein extract. Shortly after completing this series, we visited the artillery stable to see the effect of the prophylaxis. Within ten minutes, he was as asthmatic as ever. In spite of this attempt at desensitization and of his leaving the offending foods out of his diet, no benefit could be noticed. Self-administration of epinephrin keeps him comfortable after an attack appears. Repeated chest examinations by several physicians failed to show any abnormalities other than a slight amount of emphysema. Recently, his sputum has contained tubercle bacilli and a roentgen-ray examination of his chest revealed a tuberculous process.

CASE 2.—W. reacted markedly to mustard, buckwheat, oats, grapefruit and ragweed, short. An amount of mustard undetectable by taste would produce intense asthma when eaten. He wished to be able to eat mustard, but willingly gave up buckwheat pancakes. I fed him ground mustard mixed with sugar of milk in the form of capsules, dividing the daily amount into three equal parts and placing them each in a capsule. The first daily amount was 2 mg., which was increased by 2 or 3 mg. per day. At 170 mg., he developed asthma immediately after taking the noon capsule (containing one third of the 170 mg.). The amount was reduced to 150 mg. per day and kept there for one week. Then the daily amount was increased to 185 mg., without producing any asthma. At this point, he tolerated mayonnaise dressing without ill effect and soon was able to eat sardines put up in mustard. He now eats mustard in ordinary amounts without having asthma.

CASE 3.—M. reacted only to egg yolk. Omission of all forms of foods involving eggs in their cooking or manufac-

ture failed to relieve him. Tonsillectomy gave him some relief from the asthma, as the attacks were less frequent. A correction, surgically, of several nasal abnormalities completely eradicated the asthma attacks. I believe that the surgery cleared up a focus of infection, the bacterial proteins of which were responsible for his asthma, although he failed to give a positive reaction to the skin tests with the common organisms found in the nose or throat of the majority of persons.

CASE 4.—D. had asthma at all times of the year. He reacted only to corn pollen and to dog hair. He had no dog, nor was there one near his home. There were no articles made of dog hair in his home. He refused corn pollen prophylaxis. He was advised to have some much needed nose and throat correction, but this he has failed to do, and his asthma continues. Bacterial proteins failed to react.

CASE 5.—R., a faculty member, has had asthma almost nightly for at least ten years. He reacted to lamb, chicken, and egg white. Removal of these foods from his diet were of no avail. Physical examination revealed no abnormalities bearing on his condition. His habits of living were gone into thoroughly and somewhat revised, without relief of his asthma. An autogenous vaccine was prepared from his sputum raised after an attack. This vaccine consisted of *Streptococcus hemolysans* and *Staphylococcus pyogenes-aureus*, which in Walker's<sup>7</sup> experience gives good results. It failed to give any relief, after being used over a period of three months. A second autogenous vaccine prepared by Walker promises to give some relief. The attacks now occur only twice a week and are shorter in duration. The patient does not raise any sputum after an attack. The series of vaccine injections are only half completed.

CASE 6.—F. had had asthma for years. It was worse in August and September. He reacted to corn (food), coffee, tomato, lettuce and onion, and to both ragweeds. He did not report until August, but received ragweed prophylaxis during August, September and part of October. He had several asthmatic days in August, but has had none since, a new record for him.

CASE 7.—Mc. had asthma throughout the year, and hay-fever in August and September. He reacted to pork, banana and beans. These were omitted from his diet. He also reacted to chicken feathers and horse dander. Removal of his pillows, which contained chicken feathers, relieved him somewhat. He further reacted to both ragweeds and goldenrod and very slightly to daisy and corn pollen proteins. He received prophylaxis with ragweed pollen protein, which gave him 100 per cent. relief from his hay-fever and marked relief from his asthma. He has graduated from the university, but in answer to a letter states that he has had no asthma since September. He attributes the relief to treatment by one of the drugless practitioners whom he has consulted.

#### SUMMARY OF ASTHMA CASES

One patient was fed mustard and was entirely relieved of mustard asthma. Two patients were entirely relieved of asthma by pollen protein prophylaxis and by the removal of offending foods from their diets. One patient was entirely relieved by surgical correction of the upper respiratory tract. One patient failed to cooperate, and hence could not be helped. In two cases, the treatment was an utter failure, one patient receiving horse dander prophylaxis plus a corrected diet, the other, a corrected diet plus autogenous vaccine. One of these has since shown evidence of tuberculosis, and the other is responding to a second autogenous vaccine.

This series is too small to form a basis for conclusions; yet it is interesting to note that four out of seven patients, or 55 per cent., received entire relief of their asthma by prophylaxis and improved personal hygiene.

6. Vander Veer, Jr. A.: The Present Status of the Treatment of Hay-Fever and Asthma, *Am. J. M. Sc.* 164: 97 (July) 1922.

7. Walker, I. C.: Bronchial Asthma, *Oxford Medicine* 2: 239.



## ECZEMA AND RECURRING URTICARIA

**Protein Sensitization.**—Fifteen cases of eczema and recurring urticaria were studied through their reactions to food protein extracts. All of these showed cutaneous reactions to the extracts. The majority of the cases showed multiple sensitizations.

**A New Cutaneous Reaction to Food Protein Extracts Seen in Eczema Cases.**—This reaction occurs at the site of the cutaneous test and shows itself usually within one-half hour. The appearance is as if the upper layer of epidermis had been removed, leaving a reddish abraded appearing surface, which exudes minute droplets of serum. In some ways, it looks like a minute area of weeping eczema. The lesion does not heal for several days and then becomes covered with the characteristic scab of all abraded surfaces.

I have considered this type of reaction positive, because the omission from the diet of foods giving this type of reaction has been followed by improvement in the eczematous condition.

I have not seen mention of this type in the literature of protein desensitization. I. Chandler Walker<sup>8</sup> states that he has also noticed this type of reaction. He considers it as a positive reaction.

## Clinical Notes, Suggestions, and New Instruments

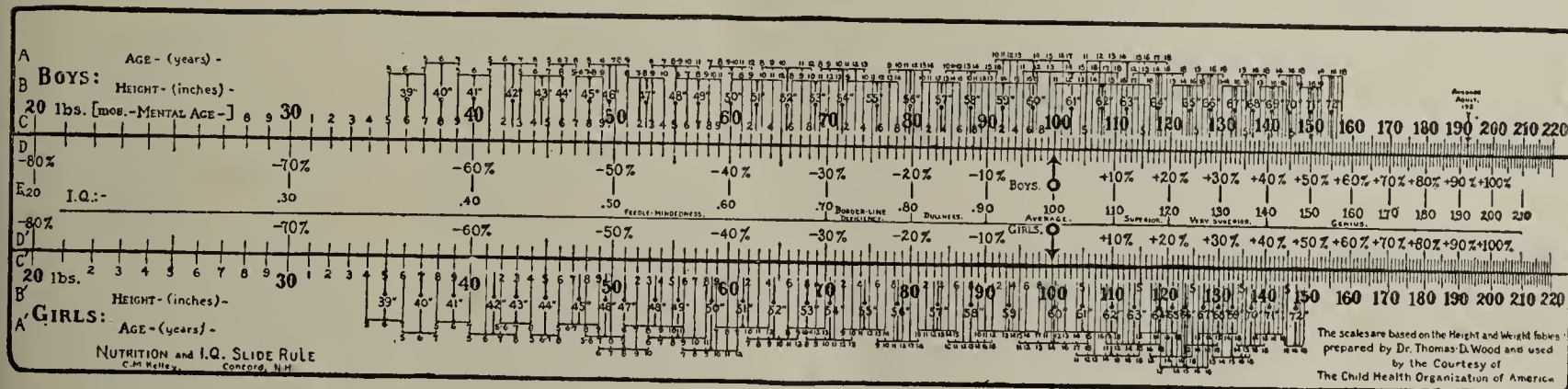
### A "NUTRITION" AND INTELLIGENCE QUOTIENT SLIDE RULE

C. M. KELLEY, M.D., CONCORD, N. H.

Medical Inspector, Department of Hygiene, Union School District

This device was designed to simplify the "nutrition" calculations in which deviations from average weights of children are expressed in terms of percentages of such averages. Although the slide rule may seem formidable at first glance, practice with a few examples will disclose the ease and expedition with which such arithmetical problems can be solved, in spite of a multiplicity of factors. It has served as a time saver and as a chart for quick reference during the last two years, and its use has been quickly mastered by clerks and others not accustomed to slide rules.

The data of the design are those of the height and weight tables prepared by Dr. Thomas D. Wood, and the Child Health Organization of America has courteously sanctioned publication in this form. Weights in pounds are represented by a fixed logarithmic scale, with the average weights for respective heights and ages indicated by auxiliary scales. A corresponding logarithmic scale on the slide is graduated to represent



Slide rule for simplification of calculating nutrition and intelligence quotient.

**Results of Protein Desensitization.**—All foods reacting positively were omitted from the diets of the respective patients. Those patients reacting to foods that were very easily abstained from quickly responded and were soon relieved of their eczema. Those who reacted to foods such as wheat, milk and egg, would improve for a short time and then relapse, probably because of some dietary indiscretion. The average college man does not have a very clear conception of dietetics or of the composition of foods. One student who had been told to eliminate eggs in all forms from his diet did not improve and was quite surprised to find that ice cream and cake contained eggs. Some students would rather have the eczema than live on a restricted diet.

I believe that as good results can be obtained in eczema in adults as have been obtained in treatment of this condition in infants and young children, provided the adult will cooperate rigidly and has sufficient knowledge of the composition of foodstuffs so that he can completely eliminate from his diet the offending proteins.

8. Personal communication to the author.

**Diet as a Cause of Constipation.**—Unbalanced dietary is a cause of constipation. The effect of this condition is seen most often in infants, but its results are often very noticeable in adults as well. It always results in portal congestions, and eventually in colitis.—R. M. Clarke, *California State J. M.* 21:23 (Jan.) 1923.

percentages below and above zero. Thus, by setting zero at a given height and age on the fixed scale, i. e., at the average weight, the deviation is read in percentage opposite the actual weight. The standards for boys are represented on the upper part of the slide rule, and the standards for girls on the lower.

The range of the scales lends itself readily to the determination of intelligence quotients by letting the fixed scale represent months, and the scale on the slide, decimals with 1.00 at zero. By setting 1.00 at the chronological age on the fixed scale, the intelligence quotient is found opposite the mental age.

The design is submitted for publication on the recommendation of certain authorities on health conservation, not only for use with the present standards but also as a suggestion which may be employed with other data.

#### METHOD OF FINDING PERCENTAGE OF VARIATIONS IN NUTRITION CALCULATIONS

1. Set the arrow on the slide (Scale D or D') at the given height (Scale B or B').
2. Reset the arrow to the given age for that height (Scale A or A').
3. Opposite the given weight (Scale C or C'), read on the slide (Scale D or D') the deviation in per cent. from the average weight for height and age.

Use Scales A, B, C, and D for boys and Scales A', B', C', and D' for girls.

**EXAMPLE.**—Find in per cent. the variation from average weight in the case of a boy 59 inches in height and 14 years of age, who weighs 79 pounds.

1. Set the arrow (Scale D) at 59 inches (Scale B).
2. As the age mark, 14, Scale A, for this height is at the same point, no correction for age is necessary.
3. Opposite 79 pounds (Scale C), read on Scale D — 14 per cent., indicating that the boy is 14 per cent. underweight.

**NOTE.**—Variations within a "zone" between 10 per cent. below and 20 per cent. above average weight may be considered satisfactory.



EXAMPLE.—What is the variation in per cent. from average weight of a girl 51 inches tall and 11 years old, who weighs 82 pounds?

1. Set the arrow (Scale D) at 46 inches (Scale B).
2. Reset the arrow to the 11-year mark for 51 inches (Scale A'); i. e., at 63 pounds (Scale C').
3. Opposite 82 pounds (Scale C') read + 30 per cent. on Scale D', indicating that the girl is 30 per cent. overweight.

Half pounds may readily be represented in the calculations by taking the reading half way toward the next higher weight mark (Scale C or C'). Half inches in height may be represented by setting the arrow half way between the age mark (Scale A or A') for the whole number of inches in height and the corresponding age mark for the next height.

EXAMPLE.—A boy, 9 years of age and 46½ inches tall, weighs 45 pounds. Find in per cent. his variation from average weight.

1. Set the arrow (Scale D) at 46 inches (Scale B).
2. Reset the arrow to 9 years for 46 inches (Scale A), i. e., at 51 pounds (Scale C); and again advance the arrow half way toward the 9-year mark for 47 inches, i. e., at 52 pounds (Scale C).
3. Opposite 45 pounds, the actual weight (Scale C), read on Scale D —13 per cent.

#### INTELLIGENCE QUOTIENTS

Let Scale C represent months of age; and Scale E (on the slide), intelligence quotients. Set the arrow (Scale D) at the chronological age in months (Scale C); and opposite the mental age in months (Scale C), read the intelligence quotient on Scale E.

EXAMPLE.—The mental age of a child 8 years, 7 months (103 months) old is found to be 82 months. Find the intelligence quotient.

- Set the arrow (Scale D) at 103 months (Scale C), the chronological age.
- Opposite 82 months (Scale C), the mental age, read 0.79 on Scale E.

#### THE RUBIN TUBAL INSUFFLATION TEST IN PRIMARY STERILITY\*

MURRAY L. BRANDT, M.D., NEW YORK

The tubal insufflation test was performed in a series of fifty-five patients, average age 27 years and average duration of marriage four years, who had never been pregnant. In most cases, the test was repeated several times. Twenty-eight were positive, i. e., the tubes were patent, and twenty-two negative. In five cases that were negative at the first test, patency was demonstrated in subsequent tests. In other words, 40 per cent. of the primary sterility cases showed closed tubes that were an absolute bar to conception.

In twenty-four of the thirty-three cases in which the tubes were patent or became patent, the semen was examined. In sixteen, there were numerous actively motile, well-formed spermatozoa; while in eight, there were either no spermatozoa or a very few nonmotile bodies.

The insufflation test is made according to the original Rubin technic. Carbon dioxid gas is employed because it is quickly absorbed; and with this gas we do not have any cases of prolonged shoulder pain resulting from the presence of gas intraperitoneally. Fluoroscopy must be done soon after the test; otherwise, the gas will be absorbed and will not be seen even if a roentgenogram is taken.

In the cases in which the tubes were patent, the average pressure before the gas passed through the tubes was 110 millimeters of mercury. In some, the gas passed through at a pressure as low as 50, while in others it passed through at 140 and even 160. In these cases, we allow three excursions in the siphon-meter, equal to 100 c.c., to pass into the peritoneal cavity. The patients invariably complain of typical shoulder pain either immediately on rising from the examining table or within a short time, after walking around. It is a positive diagnostic sign to see the patient put a hand to the right shoulder as she sits up on the table after the test is completed.

In those cases in which the pressure rises to 140 or 160, and then drops, there is almost always lower abdominal pain on one or both sides, lasting for a minute or two, while the patient is still in the dorsal position. It seems that in these cases the pressure has been sufficient either to blow out viscid secretions or to straighten out kinks of the tube, or possibly

also to overcome some fine velamentous adhesions at the fimbriated end of the tube. In subsequent tests in these cases, the pressure does not rise as high as on the first test.

In twenty-eight cases in which the tubes were patent at the first test, the gynecologic examination revealed: in three, negative findings; in nine, acute anteversion of the uterus; in seven, retroversion; in six, enlarged ovaries; in one, infantile uterus; in one, parametritis, and in one, endocervicitis.

In five cases in which the tubes were not patent at the first test, they later became patent. One of these patients had considerable lower abdominal pain accompanying two tests resulting in nonpatency. At the third test, the pressure rose to 120 and dropped to 80. The passing of the gas through the tubes was unattended by lower abdominal pain, but was followed by typical shoulder pain, an indication that patency was established.

These five cases indicate that insufflation of the tube may be used as a therapeutic agent in some cases. Apparently, there was a definite occlusion of the fallopian tubes. The high pressure, 200 mm., must have caused considerable distention of the tubes, possibly stretching adhesions and straightening out tortuous tubes. It will be interesting to follow up these cases to see whether any of the patients become pregnant.

Of the twenty-two cases in which the test was negative, there were ten in which the gynecologic examination did not show any gross pathologic lesion to account for the closure of the tubes.

In six cases in which operation was performed, the tubes proved to be nonpatent. The operations were: (1) removal of the left diseased adnexa; (2) trachelorrhaphy and ventrosuspension of the uterus; (3) removal of one tube; (4) Dudley operation and ventrosuspension of the uterus; (5) appendectomy and ventrosuspension, and (6) appendectomy.

Of ten patients on whom dilatation and curettage were performed for the relief of sterility, two had closed tubes, and in two in whom the tubes were closed at first, they later became patent.

It is interesting to note that, in one case, severe abdominal pain followed the insufflation test, which was made on the last day of menstruation, requiring a three days' stay in bed.

Another interesting case was that of a woman in whom, on insufflation, the pressure rose to 140, dropping to 60 mm. She had very severe abdominal pain and was in bed for two days. She returned three months later, not having menstruated since the test. It was found that she was three months pregnant.

In one case of thickened tubes, in which the pressure rose to 160, dropping to 140, the patient had severe pain in the left iliac region, as well as typical shoulder pain. One week later, the patient had a tender mass, the size of a lime, in the right adnexal region, which gradually subsided. There were no other untoward results in this series, although in many instances we allowed the pressure to rise to 220.

#### CONCLUSIONS

In 40 per cent. of fifty-five cases of primary sterility in which examination was made by the tubal patency test, the fallopian tubes were closed.

In 60 per cent. of these cases, the tubes were patent. In twenty-four of these thirty-three cases, the semen was examined. Sixteen of the specimens were satisfactory, indicating male potency; in the remaining eight, there was either oligonecrospermia or azospermia, i. e., the husband contributed 20 per cent. of the cause of sterility.

Carbon dioxid is the gas of choice in tubal insufflation.

Negative gynecologic examination does not rule out possible closure of the tubes.

Tubal insufflation resulting in demonstrating nonpatency must be repeated three times before it is stated that the patient cannot conceive.

Operations on the genital organs for the relief of sterility are not justifiable without a preliminary tubal patency test.

Tubal insufflation may be a therapeutic agent in some cases of sterility, by making closed tubes patent.

Tubal insufflation should not be done just before, during or soon after the menstrual period.

161 West Eighty-Sixth Street.

\* From the Gynecologic Clinic of Mount Sinai Hospital.

\* Read before the Bronx County Medical Society, Nov. 15, 1922.



## INTRAVENOUS NEEDLE WITH VACUUM CUP

HENRY W. ABELMANN, M.D., CHICAGO

This instrument is useful for the administration of intravenous medication, such as arsphenamin, for taking blood for various tests, and for blood transfusion or bloodletting, for which the needle was originally devised. The chief and unique feature of the needle is the vacuum cup, which possesses the distinct advantage of absolutely fixing the needle and holding it firmly in place after its introduction into the vein. Every physician who does intravenous work will at once appreciate this feature, as it eliminates the trouble of the needle's slipping out of the vein or becoming dislodged during the operation.

Other important advantages aside from fixation are that:

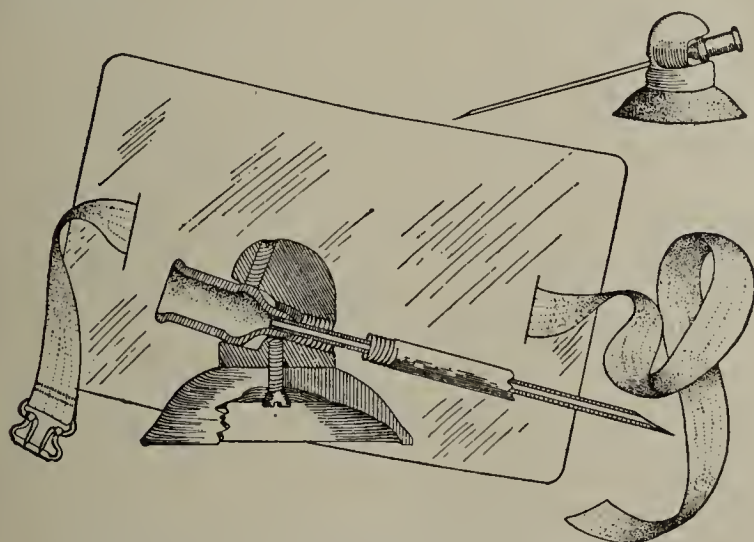
The needle is economical to use, being so constructed that the holder will accommodate any size gage Luer needle. The operator can, therefore, interchange needles easily or replace the old, worn-out needle with a new one.

The needle can be used with any apparatus, thus adding to convenience and economy.

The needle is extremely simple in design, and is easily kept clean and sterilized.

The holder of the needle insures firmness of grasp and precision in manipulation.

Connections can be made with tube or syringe without contamination.



Intravenous needle, vacuum cup and celluloid plate.

The posterior wall of the vein is held down by the combined action of the vacuum cup and the angle at which the needle is placed in the holder. This is of importance because the opening at the needle's end is not so likely to become occluded by the anterior vein wall which is drawn in by aspiration of blood, as is frequently the case with the employment of other needles.

The needle is protected with a sheath so that it can be handled rather carelessly when not in service without fear of dulling the point or contaminating the needle or rubbing off the anticoagulant ointment (citrate ointment) with which I coat the needle. The celluloid plate shown in the illustration makes it possible to apply the vacuum cup needle to any arm.

6152 Kenmore Avenue.

## ETHER INTRAMUSCULARLY FOR THE RELIEF OF HICCUP

CHARLES L. GIBSON, M.D., NEW YORK

For the last two years, all cases of hiccup coming under my observation, more particularly after operation, have been treated by the intramuscular injection of 25 or 30 minims of ether. Dr. Allen M. Thomas of New York called my attention to its use in children for stopping the paroxysms of whooping cough, and it occurred to him that it might likewise be useful in the paroxysm of hiccup. If the original dose is not immediately successful, it is repeated one or more times at several hours' interval. Its administration is not

painful, and has never been attended with unpleasant circumstances.

The first patient on whom I tried it was an elderly and feeble man who, shortly after a gastro-enterostomy for pyloric stenosis, developed hiccup of moderate severity but of great persistency. The other time-honored remedies had no effect. After the first administration of ether, the hiccups diminished in severity and frequency; the second caused them almost to disappear, and the third was followed by complete cessation.

The method was reported at a meeting of the Practitioners' Society, and from time to time members have reported to me their use of it, with a certain amount of success. It has been successful in probably a third of all the cases in which it has been tried. In some instances, relief after the first administration is almost dramatic, the hiccup stopping at once, without recurrence. The remedy is bound to fail in conditions presenting a definite organic condition, such as intestinal obstruction, uremia and exudate under the diaphragm.

I am aware that the number of remedies for hiccup is numbered by the hundreds, and while it is acknowledged that this is not a cure-all, it certainly is more often successful than anything that I have ever tried.

72 East Fifty-Fourth Street.

## ATYPICAL SURGICAL MASTOIDITIS: REPORT OF A CASE

J. L. JOHNSON, M.D., PRESQUE ISLE, MAINE

That surgical mastoiditis may be a grave menace, without any syndrome that would be apparent to a casual examiner, was recently shown by Phillips and Friesner.<sup>1</sup> My impression is that this is more apt to be found typically in adults than in children. The case here reported is, I feel, fairly representative of this condition. Also it is especially interesting from the standpoint of the duration of the process, which by history was three, and to my own observation two months.

## REPORT OF CASE

R. J., aged 68, a farmer, seen first, Sept. 9, 1922, complained of deafness in the right ear. One month before he had experienced a sharp, sudden pain in the ear. The canal was washed with warm water, whereupon the pain ceased; but the patient had been deaf in the ear since that time. There had never since been any pain. There had never been any discharge. The patient had no ill feeling of any kind. He had never had any previous trouble with the ear.

Examination revealed a normal canal. There was no drooping of the posterior wall. The drum was very red, and all the landmarks were obliterated. There was no tenderness over the mastoid region or any other part of the head. The temperature and pulse were normal. A myringotomy was advised, but I did not see the patient again until November 10. He still complained only of deafness; his condition had remained unchanged so far as he could tell, except that, the day before, he had developed a slight headache over the right parietal area, and during the preceding few hours he had had a slight feeling of malaise.

The appearance of the canal and of the drum was unchanged. There was a slight amount of tenderness to hard pressure over the antrum. The temperature was 100 and the pulse 104. The patient could hear a conversational voice at 3 feet; bone conduction was increased; on the Weber test the sound was referred to the right.

I sent the patient immediately to the hospital, where roentgen-ray examination revealed a medium sized, clear, pneumatic left mastoid. The right was smaller, very dense and typical of sclerotic bone, except for one large cell continuous with the antrum and extending to the knee of the sinus. This cell was not clear.

Operation revealed a dense, sclerotic mastoid except for the large cell that showed on roentgenoscopy. This cell was filled with granulations and about two drops of free

1. Phillips, W. C., and Friesner, Isidore: Report of Five Cases of Mastoiditis with Atypical Symptoms, *J. A. M. A.* 78: 1796 (June 10) 1922.



pus. The bottom of this cell, however, held what appeared like a partly broken down blood clot. This clot rested on the sinus wall, which, at the knee, was entirely bare over a space about 5 mm. square. The sinus itself appeared normal and filled readily from either end, so I contented myself with a simple mastoid operation. The recovery was rapid and uneventful. The patient now hears a low whisper at 15 feet.

#### A NEW DUODENAL TUBE AND TIP

N. PHILIP NORMAN, M.D., NEW YORK

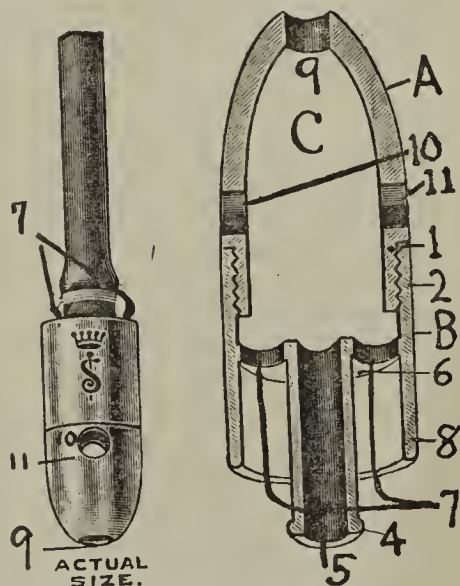
Einhorn, Jutte, Rehfuß, Lyon, Palefski, Kohn and Buckstein are names that are associated with apparatus designed for duodenal intubation and drainage. The Einhorn tip is a small, olive-shaped, fenestrated piece of metal. The Jutte tube has a blind tip with the fenestrations in the body of the tube. The Rehfuß tip is a large, olive-shaped tip, with slits leading to the center of the tip and then to the tube. The Lyon tip is pear-shaped, with slits, much the same as the Rehfuß tip. The Palefski tip is globular, with fenestrations through the body of the tip. The Kohn tube has small rubber bags attached, one at the tip and another in an intermediary position on the tube so as to sequester a certain portion of the small intestine when the bags are inflated. The Buckstein tube and bucket is simply a Jutte tube to which a bucket is attached by a piece of catgut or silk thread.

There seems to be a widespread interest in duodenal intubation because of its diagnostic and therapeutic possibilities. The efficacy of the procedure is dependent in large measure on the apparatus used. The number of devices on the market suggests that none of them are mechanically perfect. Study of the technic of duodenal intubation has led to the conclusions that there is need of (1) a tube of larger caliber; (2) a tip mechanically constructed so as to prevent closure of the fenestrations by intestinal peristalsis, and (3) a tip that is easily swallowed.

The construction of the duodenal catheter nozzle here illustrated is such that the fenestrations toward the rear remain open regardless of intestinal peristalsis. The cartridge shape of the tip facilitates the swallowing of a large tip without straining the muscles of deglutition. In practice, this duodenal aspirating apparatus has shortened the time of the duodenal drainages.

The tip, or discharge nozzle, in outward appearance resembles a cartridge. It is a hollow shell comprising two separate portions, *A* and *B*, the portion *A* having a reduced flange, *1*, threaded to take into the complementary threaded sleeve *2*, so that, when the parts are assembled, an interior fluid distributing chamber, *C*, is formed. The nipple, *4*, provides a ready attachment for the catheter, and is of materially smaller diameter than the entire nozzle, the conduit, *5*, of the nipple centrally entering the chamber from the rear, while the nipple is mechanically united with the entire nozzle by a spider, *6*, secured interiorly of the ring-shaped portion, *B*, to provide rearwardly discharging and aspirating fenestrations, *7*, which are protected from accidental closure by secretions or folds of the duodenum by means of the overhanging skirt or flange, *8*. Forward and laterad are discharge and intake means for fluids as provided by the usual forward and lateral fenestrations *9*, *10* and *11* formed in the forward portion, *A*.

265 West Seventy-Second Street.



Duodenal tip in outward appearance and in section.

### Special Article

## THE CARE AND FEEDING OF INFANTS

(Continued from page 323)

[NOTE.—This is the sixth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

#### SPECIAL FEEDING RULES

1. Food requirements which have been recommended must of necessity be considered as relative, variations being to a great extent influenced by the physiologic and anatomic developments and to a not inconsiderable extent by the temperature and humidity of the air surrounding the infant and the type of clothes in which it is dressed.

2. Each day the total amount of food as indicated for the individual infant is to be estimated, in order that the required food and water may be properly administered. The number and amount of feedings will of necessity vary, but each must also be estimated for each day.

3. When a number of infants are to be fed by one wetnurse, careful calculation of the day's needs of each infant must be made by the floor nurse for the information of the nurse in charge of the milk supply.

4. Expression of breast milk should be performed at regular intervals, preferably six times a day at four-hour periods day and night. The sixth expression during the night may, however, be omitted if the supply is in excess. It is only by regular and complete emptying of the breasts by expression that a milk supply can be maintained for an indefinite period, unless there is a second baby which can be placed at the breast.

5. Human, as well as cow's milk, must be obtained under aseptic conditions and kept clean and cool until feeding time. To preserve milk properly, the icebox must register less than 50 F. The food should be slowly warmed before feeding.

6. The amount of water to be fed must be carefully calculated, and it must represent the difference between the total fluids indicated, which will usually average from one eighth to one fifth of the body weight of the infant for twenty-four hours and the amount of fluid given as milk. *The water for each day should be measured and set aside in an individual stoppered bottle each morning.*

It should be administered between the milk meals; or, occasionally, there may be an indication for diluting the milk with part of it. In order to administer the full day's water supply in some of the small infants and those who vomit, it may be necessary to give water in small quantities one, two and even three times between milk feedings. If the infant is unable to swallow properly, water must be given by catheter. In larger infants only a few water feedings a day may be needed, and usually by the second or third week, one seventh or one fifth of the body weight in milk can be fed daily. At this time the water may be discontinued unless it is necessary to supply external heat of considerable degree, or the infant has a fever, both of which necessitate increased amount of fluids.

#### FEEDINGS AFTER THE TWENTY-FIRST DAY

Usually by the twenty-first day, the food requirements of the infant are quite well established, and a



careful observation of the infant's weight, stools, disposition and, equally important, its body temperature will decide the future requirements.

The water requirement will to a great extent be dependent on the supply of artificial heat and the presence of fever. Ordinarily by the beginning of the fourth week, from one seventh to one fifth (140 to 200 c.c., or from 100 to 140 calories per kilogram) of the infant's body weight in the form of breast milk is needed to maintain proper growth. Rarely is it necessary to exceed these amounts, even in the poorly nourished premature infant. If the physiologic functions are seemingly normal, *the scale* is the deciding factor in indicating food increases or decreases.

As the infant takes on weight and becomes fat with a rounding of the features and the body, as is the case in premature infants successfully fed with breast milk, the total milk administration can be held at one sixth and not infrequently one seventh of the body weight, and normal weight increases may still be maintained.

#### MIXED FEEDING

When human milk, even though in small quantities, is available, it should form the basis of the diet, and cow's milk mixtures should be supplemental.

#### ARTIFICIAL FEEDING OF PREMATURE INFANTS

A much higher mortality is to be expected when cow's milk replaces human milk in the feeding of premature infants.

When it becomes necessary to resort to artificial feeding, the quality of the cow's milk and other ingredients, the preparation of the mixture, and the quantity to be administered must all be given careful consideration.

Many different diets, such as simple milk dilutions, cream and skim milk mixtures, skim and buttermilk mixtures, malt soup preparations, condensed milk and evaporated milk, have been suggested. With each food, results are in large part dependent on the physician's knowledge of the results that should follow its use.

Ordinary milk, water and sugar mixtures are not well taken unless, by boiling or alkalizing the mixture, it is so modified that the curd becomes finely subdivided. Our best results have been obtained by the use of low fat and moderately high protein and carbohydrate mixtures.

A boiled buttermilk or skim milk mixture<sup>13</sup> to which dextrinized flour and cane sugar are added may be used to advantage. For use during the first weeks it may be prepared according to the formula given in Table 2.

TABLE 2.—MIXTURE FOR USE DURING THE FIRST WEEKS

Buttermilk or skim milk.....	1,000
Flour (dextrinized).....	10
Sugar (cane).....	40

The foregoing formula provides for 16 calories for each ounce, or 540 per liter.

13. The buttermilk and skim milk mixture is thus prepared: To a few tablespoonfuls of buttermilk or skim milk, 2½ level tablespoonfuls of dextrinized flour is added to make a paste. This is made up to 1 liter with buttermilk. (1) The whole is brought to a boil, and withdrawn from the fire. (2) It is brought to a boil again, and withdrawn from the fire a second time. (3) Four level tablespoonfuls of cane sugar is added and the mixture is brought to a boil for the third time. This process should take about twenty minutes. The mixture should be stirred constantly with an egg beater while over the flame. It is made up to 1 liter with boiled water, if the quantity has boiled away to a less amount. It is then put on ice. It is well to start with one-half the amount of sugar and increase as indicated, in the presence of loose stools. Maltose dextrin preparations may be used to replace the cane sugar.

For later use it may be prepared as in Table 3.

TABLE 3.—MIXTURE FOR LATER USE

Buttermilk or skim milk.....	1,000
Flour (dextrinized).....	15
Sugar (cane).....	60

This formula provides for twenty calories per ounce or 700 per liter.

All of the rules suggested for feeding with human milk must be rigidly observed both as to quantity and to frequency of feeding. In many instances it will be necessary to increase the diet even more slowly than suggested, and the infants must be carefully observed for evidence of overfeeding. It should also be evident that there is always great danger of underfeeding these infants when on an artificial diet. As soon as the infant's condition warrants the fat-free diet, buttermilk or milk is to be replaced in part by whole milk, or small quantities of cream should be added.

Cream can be added to the foregoing mixtures as indicated in Table 4.

TABLE 4.—FORMULA WITH CREAM

Buttermilk or skim milk.....	950
Cream, 16 per cent.....	50
Flour (dextrinized).....	15
Sugar (cane).....	60

Whenever it is possible to obtain even small quantities of human milk, the artificial food should be used only to supplement the breast milk.

*Other Dietetic Requirements.*—To counteract the effects of boiling, orange juice feeding should be instituted by the third week, beginning with 0.5 c.c. (8 drops) and increasing from 2 to 4 c.c. (from ½ to 1 dram) daily by the eighth week, in order to avoid scurvy. Cod liver oil as an antirachitic should be fed by the fourth week, beginning with 0.5 c.c. (8 drops) daily, divided into two feedings and increased to 2 c.c. (30 drops) daily by the eighth week. It may be mixed with the orange juice. To counteract the low iron content of these diets, ferrous carbonate, 0.03 gm. (½ grain), or iron and ammonium citrate, 0.03 gm. (½ grain), once daily should be started by the fourth week. The latter may be prescribed in solution.

(To be continued)

## New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

**THEOPHYLLIN SODIO-ACETATE** (See New and Nonofficial Remedies, 1922, p. 357).

**Theocin Sodium Acetate.**—A brand of theophyllin sodioacetate-N. N. R.

Manufactured by the Bayer Co., Inc., Rensselaer, N. Y. (Winthrop Chemical Co., New York, distributor). U. S. patent 716,994 (issued Dec. 30, 1902; expired). U. S. trademark 39,135.

**A Fairer World Possible.**—We have available knowledge and ingenuity and material resources to make a far fairer world than that in which we find ourselves.—Robinson: The Mind in the Making.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, FEBRUARY 10, 1923

## HYGEIA: ARE YOU FOR IT?

Next month there will appear on the news stands the first number of the medical magazine for the people—*Hygeia: A Journal of Individual and Community Health*. This journal will be a departure in scope, in character and in make-up from any periodical on health heretofore published. It will not be a "public health" journal—that is, one to appeal to workers in public health; it will be a popular medical magazine. It will not make a special appeal to the intelligentsia or to the scientist, nor will it be a journal to attract the uneducated. It will be a periodical, however, that will make an appeal to the average intelligent layman—the man and woman on the street. And while it is not to be published for the physician, it will, we believe, contain much that will interest him and, occasionally, something that he will find instructive. In any event, whether or not he himself needs it, it will be a periodical that should be on the doctor's reception room table. A special introductory offer to physicians has been appearing in the advertising pages of *THE JOURNAL* for the last six weeks. The responses are encouraging, but this periodical should have the support of the entire medical profession if, in its introduction to the public, it is to be an immediate success. While it might be introduced through the ordinary channels—and these channels will be utilized—it is surely the duty of the medical profession to support this enterprise. In asking physicians' support, we do not ask for a sacrifice: the actual cost of production of this journal to the Association will be far greater than the introductory price at which it is being offered to them. The periodical will be profusely illustrated and will be printed on coated paper throughout. As it will be issued and offered to the public about the end of the first week or ten days in March, this special offer will terminate on March 1. After that date the regular price will prevail. See advertising page 17, this issue.

## THE HISTOLOGIC BACKGROUND OF BRONCHIAL ASTHMA

The foremost symptom of bronchial asthma and the one that most clearly characterizes it is the paroxysmal dyspnea associated with a disturbance of the bronchioles. The offending stenosis of these respiratory channels may come about in several ways: There may be obstruction caused by secretion from the bronchial glands, swelling and exudation of the bronchial mucosa, or spasm of the bronchial smooth muscular tissue. Since the suggestion has been made that asthma is a manifestation of anaphylaxis, which is characterized in certain species by bronchospasm, the latter possibility has received a prominence in most considerations of the subject which it never had before. However important hypersusceptibility to protein may be in the causation of asthma, the thesis that anaphylaxis will explain every case can scarcely be defended at the present time.

Recently, Huber and Koessler<sup>1</sup> of the University of Chicago have focused attention on other phenomena than the respiratory crisis of asthma by attempting to determine what morphologic background may be associated with the disease. To the few microscopic studies heretofore actually recorded for cases of true bronchial asthma, they have added further histologic observations destined to elucidate the problem of causation to a considerable extent. It appears from their examination of the finer structure of the bronchi that there is a certain parallelism between the clinical picture and the structural changes seen at necropsy. When there was abundant secretion or bronchorrhea, the anatomic picture presented a striking hypertrophy of the mucous gland system of the bronchi. When there was an "unproductive" cough leading to the attacks of bronchospasm, the chief pathologic change was hypertrophy of the smooth muscular system and atrophy of the mucous gland.

The outstanding feature of these studies is the evidence that the actual thickness of the walls of bronchi and of bronchioli of more than 0.2 mm. outside diameter is increased, as compared with similar structures in nonasthmatic persons. This difference, according to Huber and Koessler, is due to increased thickness of all layers from the epithelium to the outer fibrocartilaginous layer. Hyperemia and cellular infiltration of the wall, and increased activity of the glands, lead to swelling and thickening; and this can produce, mechanically as well as chemically, irritation of the peripheral nerve endings in the tube, which may indirectly cause bronchospasm. The abundant secretion of the epithelium and the hyperactive glands obstruct, in some instances completely, the already narrowed lumen of the middle-sized and small bronchi and the bronchioli. In this way the Chicago pathologists conclude that both systems, the exudative and the bronchomus-

1. Huber, H. L., and Koessler, K. K.: The Pathology of Bronchial Asthma, *Arch. Int. Med.* 30: 689 (Dec.) 1922.



cular, act simultaneously in the production of the stenosis, in some cases one more than the other, but always both to some extent. The anatomic substratum of the bronchospasm, however, is furnished mainly by the hypertrophy of the smooth muscle fiber system.

#### ANNOUNCEMENTS ON THE CAUSE OF EPIDEMIC INFLUENZA

Newspapers throughout the United States have carried announcements of the discovery at the Rockefeller Institute of an organism, called *Bacterium pneumosintes*, which it was stated had been shown to be the causative agent of epidemic influenza. The announcement received first page attention in newspapers and the omniscient Arthur Brisbane burst forth in the Hearst papers with a full column Sunday editorial lauding the achievement and calling attention to the significance of the fact that this most recent and possibly greatest of medical discoveries had been broadcast by radio, the most marvelous of recent inventions. THE JOURNAL telegraphed to Dr. Simon Flexner, director of the Rockefeller Institute asking for the facts. Dr. Flexner replied: "The article prepared for the New York State Department of Health consisted of a routine summary of papers by Olitsky and Gates on influenza, published in the *Journal of Experimental Medicine* over the past three years and it was headlined by the state publicity department without my knowledge." After the telegram was sent, THE JOURNAL received the regular "Health News Service" issued by the New York State Department of Health. It was dated February 1 and released for newspapers for Saturday, February 3. The headline read: "Cause of Influenza Discovered at Rockefeller Institute, says Dr. Flexner." It then continued:

In a radio health talk broadcast from Schenectady last night under the auspices of the New York State Department of Health, Dr. Simon N. Flexner, Director of the Rockefeller Institute for Medical Research, announced the discovery of the cause of influenza as the result of researches conducted by members of the staff of the Institute. Dr. Flexner's statement, as prepared at the request of Dr. Hermann M. Biggs, State Commissioner of Health, follows.

The statement referred to is simply a recapitulation of the articles of Drs. Olitsky and Gates which, as he says, were published in the *Journal of Experimental Medicine* and abstracted in THE JOURNAL. The organism concerned has been isolated from the noses and throats of patients with influenza, during the last three years; it has been successfully cultivated on artificial mediums; and when injected into rabbits it has been found to produce influenza-like symptoms. When injected into the trachea it also produces changes in the lung tissues which the observers believe make the lung more susceptible to attack by the bacteria, chiefly streptococci and pneumococci, which regularly inhabit the throats and respiratory tracts of human beings. The work has not, apparently, been confirmed by other observers, and the organism cannot be said to have been

conclusively shown to be the cause of the condition known as epidemic influenza; this is particularly the case, since other organisms have, in the belief of their discoverers, produced similar pathologic conditions.

In the present instance, the newspapers are not primarily to blame for having sensationalized the announcement which they received from the radio. All too frequent, however, are statements concerning discoveries in the treatment of such conditions as cancer, tuberculosis, epilepsy and other menacing diseases, which lead thousands of sufferers to false hope, to the unwarranted spending of money and to the ultimate discredit of real advances in medical science. The need of authoritative sources of information for the public on new medical discoveries was never so great as at the present time.

#### PLEURAL AND PERITONEAL PAINS

Among the symptoms with which a physician is accustomed to deal, few, if any, approach pain in importance. The sensation of pain directly interests the patient. He requires no special training or complicated apparatus to discover it. Imagination may be its cause, Emerson<sup>1</sup> remarks, but the pain thus produced hurts just as truly as pain produced by a real disease. Pain is only a phenomenon of consciousness; but it is always real, Emerson adds, even that felt in a dream.

Clinicians are familiar with so-called "referred" pains which are localized at some distance from the seat of injury, disease, or stimulation of the nervous tissue responsible for the transmission of the sensation. In certain types of heart disease, pain may be referred to the arm; in gallstone colic the sensation may be projected into the shoulder or elsewhere away from the organ directly involved. Such "projection" of pain may easily lead to errors of diagnosis, so that obviously it becomes of the utmost importance to have adequate information about the subject. It is complicated by the fact that in certain of the interior organs the sense of pain seems to be entirely lacking. Pain and pressure or tactile sensations do not always occur simultaneously; they must therefore not be identified or confused.

According to Capps,<sup>2</sup> in man mechanical irritation of that portion of the pleura which covers the lungs does not cause pain. The parietal pleura, on the other hand, is very sensitive to mechanical irritation, and pain is experienced directly over the spot that is irritated. When the diaphragmatic pleura is touched, the localization of the pain varies according to the portion of the diaphragm irritated. If the outer peripheral portion is irritated, the patient experiences pain over the lower thorax, the lumbar region or the abdomen, localities which correspond to the distribution of the lower six intercostal nerves. When the central portion of the diaphragm is irritated, on the other

1. Emerson, C. P.: *Essentials of Medicine*, Philadelphia, J. B. Lippincott Company, 1920.

2. Capps, J. A.: An Experimental Study of the Pain Sense in the Pleural Membranes, *Arch. Int. Med.* 8:717 (Dec.) 1911.



hand, pain is experienced in the neck above the clavicles, a region that corresponds to the distribution of the nerves coming from the third and fourth cervical segments of the cord. Irritation of the pleura which lines the outer pericardium may also cause pain in this region. While irritation of the pleura lining the thoracic wall causes pain in the immediate neighborhood, irritation of the diaphragmatic pleura causes pain at some distance, either below the thorax or in the neck.

The problem of pain in the peritoneal region is, if anything, even more important in the domain of diagnosis. Reference is frequently made to the classic studies of Lennander,<sup>3</sup> who has maintained that the hollow viscera and the omentum give no sensation response to heat, cold or injury; on the other hand, he found that the parietal peritoneum was sensitive to irritation, especially when inflammation was present. This pain sense he explained by the rich supply of cerebrospinal nerves to the parietal peritoneum and its subserosa, in contrast to the sympathetic nerve supply of the insensitive viscera. Capps and Coleman<sup>4</sup> of Chicago have lately investigated further the localization of pain from stimulation of the parietal and diaphragmatic peritoneum, by direct tests with freely movable probes passed through trocars inserted into the peritoneal cavity for drainage in cases of ascites. The parietal peritoneum, as well as that covering the diaphragm, was found to be devoid of pressure sense when objects are gently applied. However, the parietal peritoneum, and its underlying serosa, so far as explored, namely, all the anterior median areas and the lateral areas as far as the anterior superior spines, are sensitive to pain from strong pressure of a smooth point or light pressure or lateral movement of a rough point of wire. The pain elicited by stimulation of the parietal peritoneum is localized with considerable accuracy by the patient, the error being less than an inch. On the other hand, the localization of pain from stimulation of the diaphragmatic peritoneum is never in the diaphragm itself. It is always referred to some distant part. Stimulation of the outer margin causes diffuse pain over the lower costal region and subcostal abdominal wall. Stimulation of the central portion produces pain over a sharply limited point somewhere along the trapezius ridge. These impulses, Capps and Coleman suggest further, are doubtless carried by afferent fibers of the phrenic nerve to the cervical cord, and thence referred to the neck by the sensitized cutaneous nerves of the fourth cervical segment. This pain has not been observed along the course of the phrenic nerve itself. Studies of this sort are not easily conducted, and they require careful control. It seems to be well established now that pain from the parietal peritoneum is always direct and not referred, in contrast to that of the diaphragm.

## VITAL STATISTICS IN PROGNOSIS

It has been well said that prognosis is the map by means of which the physician leads his patient through the barren land of disease. To the patient, a favorable prognosis affords immeasurable courage and fortitude. Still, such figures as 50 per cent. mortality in cerebrospinal meningitis, leave us, in the face of any one case, in a position suspiciously like that of the gamester who knows only that the next turn of the wheel must be red or black; and we must welcome any basis in addition to the clinical picture on which we may prognosticate. Pearl's<sup>1</sup> recent monograph on the biology of death commends itself for this and other reasons.

The death of an individual results essentially from failure of some one organ system, and Pearl has classified the causes of death on the basis of failure of organ systems rather than pathologic agents. Pneumonia, for example, is considered in terms of (and in company of other causes of) failure of the respiratory system rather than in terms of bacterial invasion. Such classification, to possess prognostic value, must be backed by two premises: first, that the inherent strength or weakness of an organ is more important than the specific pathologic agencies in determining whether and when this organ will break down, and, second, that this strength or weakness is directly inherited. Pearl presents much evidence of the truth of each of these premises.

A comprehensive analysis of death rates reveals that "the probability of any particular organ system breaking down and causing death is mathematically definite at each age, and changes in a strikingly orderly manner as age changes."<sup>2</sup> Thus, for the first year the digestive system, from 1 to 60 years the respiratory, and from 60 to 90 years the circulatory system is most likely to give out and cause death. And, further, the death rates in widely separated environments (as the United States, England and Brazil) are essentially the same. Such constancy in time and percentage of organ failure in essentially inconstant environments strongly suggests some determining factor intrinsic to the organs themselves. This factor is the inherited constitution.

Definite correlation data for each organ system between parent and offspring are not yet available, but the closely related correlation of longevity of parent with that of offspring has been amply demonstrated by Pearson<sup>3</sup> and others, and from their figures it has been concluded that the average duration of life of the persons studied was from 25 to 50 per cent. dependent on environmental factors, and from 75 to 50 per cent. dependent on inherited constitution. This germane comparison will emphasize the importance of the foregoing conclusion.

"If all that medicine and hygiene know today were put into reasonably effective operation, and nobody

3. Lennander, K. G.: *Mitt. a. d. Grenzgeb. d. Med. u. Chir.* **21**: 125, 1910.

4. Capps, J. A., and Coleman, G. H.: *Experimental Observations on the Localization of the Pain Sense in the Parietal and Diaphragmatic Peritoneum*, *Arch. Int. Med.* **30**: 778 (Dec.) 1922.

1. Pearl, Raymond: *The Biology of Death*, Philadelphia, J. B. Lippincott Company, 1922.

2. Pearl: *The Biology of Death*, p. 135.

3. Beeton, M., and Pearson, K.: *On the Inheritance of the Duration of Life, and on the Intensity of Natural Selection in Man*, *Biometrika* **1**: 50-89, 1901.



died except when and from such causes as could in no way be influenced by what medical science, good environment, etc., have to offer: by how much *then* would the expectation of life be greater than it now is?" Bell has shown, as regards the factor of heredity, that the expectation of life for a person whose parents died at 80 or over is twenty years longer than that for a person whose parents had died at 60 or under. The answer to the question of environmental importance comes from data gathered by Fisher<sup>4</sup> from "a group of the most prominent medical authorities in this country . . . and . . . tabulated in an extremely conservative manner." "The total increase in expectation of life, if Fisher's ratios of preventability were fully realized, is just under thirteen years! . . . No more striking demonstration could be found of the overwhelming importance of heredity in determining duration of life. For if all the deaths which reason will justify one in supposing preventable on the basis of what is now known were prevented in fact, the resulting increase in expectation of life falls seven years short of what might reasonably be expected to follow the selection of only one generation of ancestry for longevity."<sup>5</sup>

Nor is the evidence limited to vital statistics. Experimental studies on the fruit fly have shown that longevity is inherited in accordance with the classical mendelian laws, long and short lived strains segregating out in a perfectly regular manner. And, be it noted in passing, fly populations kept entirely free from bacteria had a slightly shorter average life than those exposed freely to the vicissitudes of a normal environment.

It is manifest from the foregoing that knowledge of a person's heredity—the age of his forebears at death and the causes of their deaths—would be of signal value. This has not been unrecognized in the past, but it has surely been underrecognized. As a slight example of what might be done, the 1918 influenza epidemic might be cited.

It has been shown<sup>6</sup> that the death rate from influenza in thirty-four of our largest cities was significantly related to the preexisting death rate from heart diseases and, except for a possible correlation with latitude, with no other of fourteen variables considered. The inference is that those persons with weak hearts died when attacked by influenza; others recovered. Clinical experience of the desirable action of heart stimulants in influenza is in accord with this conclusion. The prognosis in any case would have been simplified if the family records showed the presence of a sturdy or a weak heart.

A final word is necessary concerning such records. For prognosis and treatment as well as for the broader eugenic and sociological uses, carefully gathered and adequate genealogies will be invaluable. It is to ourselves as the ones from whom the raw data are obtained that we and others must look for the accurate information and leadership necessary to exploit this rich material.

## Current Comment

### THE PATENT OFFICE—A FEDERAL RIP VAN WINKLE

At various times, in season and out of season, *THE JOURNAL* has protested against the lack of intelligence shown in the administration of the patent law relative to agents, chemical or mechanical, for the alleged cure or relief of human ailments. In an editorial published June 23, 1917, *THE JOURNAL* said:

The splendid conception of the framers of our constitution in providing a plan for promoting progress in science and useful arts by granting to inventors for a limited time the exclusive use of their inventions, in exchange for the publication of full knowledge thereof, is being debased. No branch of our government is of greater importance to the progress of the country than the patent office, provided that office is intelligently administered. When the patent office is used, however, for an extension of the nostrum business, founded on the abuse of patent and trade-mark laws, it becomes a menace to the public health. The objects of the patent law are being defeated by the practices of the patent office.

In January, 1918, there was published a report of the Committee on Patent Law Revision of the Council on Pharmacy and Chemistry. This report, in addition to recapitulating the efforts that had been made for years by the American Medical Association to bring about either an amendment of the law governing the issuance of patents on medicinal preparations or a revision of the procedure under which such patents are issued, also detailed briefly some of the cruder examples of patent office inefficiency in the granting of patents for medicaments without thorough and scientific investigation of the claims advanced by the patentee. *THE JOURNAL* has at various times called attention to the fact that the United States Patent Office has issued patents on medicinal products that could have been patented in practically no other country in the world. The case of acetylsalicylic acid comes to mind as one of the most flagrant instances. No other country, not even the original home of the preparation, would grant a patent either on the product, acetylsalicylic acid, or on the process for making that product; the United States Patent Office granted patents on both. As a result it was impossible for seventeen years for any one else to manufacture or sell acetylsalicylic acid in the United States and we had to pay more than ten times as much for aspirin as did the medical profession or the public in practically any other civilized country. The propaganda department of this issue details another flagrant case of unintelligent action on the part of the patent office. It concerns the issuance of a patent for a preposterous mixture of squill root, bitter almonds, nettle and red poppy flowers in olive oil,

4. Fisher, Irving, cited by Forsyth, C. H.: Vital and Monetary Losses to the United States Due to Preventable Deaths, *Quart. Pub. Am. Stat. A.* **14**: 758-789, 1915.

5. Pearl: *The Biology of Death*, p. 165.

6. Pearl, Raymond: *Influenza Studies, II, Further Data on the Correlation of Explosiveness of Outbreak of the 1918 Epidemic*, *Pub. Health Rep.* **36**: 273-289 (Feb. 18) 1921. The familial tendency of cancer is well known (Slye, Maud: *The Inheritability of Spontaneous Tumors of the Liver in Mice*, *J. Cancer Res.* **1**: 503 [Oct.] 1916), and is another case in which adequate ancestral data would be invaluable in prognosis.



providing "a remedy which will prove effective in the treatment of tuberculosis." Isn't it about time that the United States Patent Office realized that this is 1923, that we are living in an age of steam trains, telephones and aeroplanes, and that we no longer travel by stage-coach nor practice the voodooism of the witch doctor or the Indian medicine man? The patent office carries a great power for good or evil—good, when it issues patents for devices or substances which will increase national efficiency, and evil, when it grants patents on things the sale of which must operate against the public health. Both common sense and considerations of the health of the public suggest that the patent office, before it issues patents on medicinal preparations, should consult with and get the cooperation of scientific departments of the United States government conversant with medicines and therapeutics.

#### BAYER 205

Considerable interest has been aroused by reports of the preparation known as "Bayer 205" which is said to be a specific trypanosomicide. Trypanosome infections are not frequent in man but are common in domestic and other animals. Probably one of the best known examples in man is the so-called African sleeping sickness—trypanosomiasis. This disease does not occur in this country and, as may be unnecessary to say here, must not be confounded with lethargic encephalitis, popularly spoken of as sleeping sickness, with which of course it has nothing in common. African sleeping sickness is transmitted through bites of the tsetse fly and is so fatal to horses and cattle that it has been impossible to raise these animals in districts where the fly is prevalent. The remedy is said to have no effect on organisms other than the trypanosomes, even those which are somewhat nearly related such as the spirochetes and those of kala-azar. It is, however, hinted that there are possibilities for other chemical combinations which may extend the sphere of usefulness. Most of the work so far reported with this remedy has been carried out with small laboratory animals, but some has been done with larger animals, and the successful treatment of two cases of human trypanosomiasis is recorded. It is said that experimentation with man and domestic animals is being actively prosecuted in Africa and that the results with mice and guinea-pigs are striking and full of promise. The chemotherapeutic index for mice is said to be 1:60 while that of atoxyl, which has been extensively used in the treatment of these conditions, is 1:2. Warnings are also given that severe toxic results in the form of hemorrhagic, hemolytic, and toxic nephritis may follow its administration to man. The composition of the preparation is secret. It is reported<sup>1</sup> as a "complex organic combination which contains neither mercury, arsenic, antimony, nor other inorganic agent. It belongs to a new group which presents endless possibilities for variation, and hence hope for further results." "Its composition cannot be given more exactly." A hint as to the chemical composition has been discovered by Barger<sup>2</sup> who

found that the Bayer Company had secured patents on the "preparation of carbamides of the naphthalene series which are stated to be trypanosomicidal." It is hoped that, in the near future, the nature and composition of this substance will be declared so that scientists will feel justified in undertaking control, study and investigation. For the present the preparation must be regarded as in the experimental stage and it will be necessary to await further scientific data before judgment can be pronounced as to its efficacy and applicability.

#### STRYCHNIN AND DISTURBANCES OF THE VISION

The use of strychnin in the treatment of such conditions as amaurosis, toxic amblyopias, optic neuritis of varying origin, headaches from a variety of disturbances of vision, and retinal anesthesia appears to be extensive. Its use in ophthalmology was introduced by Thomas Shortt<sup>1</sup> of Edinburgh in 1830, who applied it directly to blistered surfaces. Textbooks of therapeutics and ophthalmology have perpetuated and even extended the original ideas of Shortt, the claims running from mere assertions regarding the usefulness of the drug in certain eye conditions to statements that it actually increases the acuity and widening of the field of vision within an hour after injection of therapeutic doses. Occasionally there is a statement to the effect that the good results from strychnin are due to psychic influences; and now, ninety-two years after Shortt, it appears that this opinion is probably correct. This is indicated by the completely negative results of Schlagintweit<sup>2</sup> of the University Eye Clinic at Munich under Hess, who took the trouble to ascertain by means of a variety of ophthalmologic tests and proper controls on man and animals whether the claims of Shortt and the extensive practice of French, English and German ophthalmologists are justified. Schlagintweit found that the hypodermic injection of from 2 to 3 mg. in adults did not increase the field of vision for blue and colorless light, or its sharpness. There were no differences in sensitivity to white and colors. The application of 1 and 3 per cent. concentrations of strychnin nitrate up to a total quantity of 12 mg. to the eyes of persons and young rabbits had no influence on the sensitivity to light and the size of the pupil. The anatomic elements, such as the pigment, of frogs' eyes were unaffected. There seems to be no question that the alleged beneficial effects of strychnin in therapeutic doses on disturbances of vision have no foundation in fact, and that any beneficial results that may be obtained are to be attributed to purely subjective or psychic factors which cannot be readily controlled. Thus, the usefulness of objective data instead of wasteful speculation and carelessness, it is hoped, may be learned once again. But, in view of the simplicity of the tests that can be applied, and the practical nature and easy availability of subjects for testing, in this case, it is difficult to understand why it was necessary to wait ninety-two years before a just and reasonable appreciation of the

1. Mayer, Martin: The New Trypanosome Remedy "Bayer 205" and Its Significance for Chemotherapeutic Investigation, *Deutsch. med. Wchnschr.* 48: 1335 (Oct. 6) 1922.

2. Quoted in *Prescriber* 16: 252 (July) 1922.

1. Shortt, Thomas: Remarks on the Treatment of Amaurosis by Strychnine, with Several Successful Cases, *Edinburgh M. & S. J.* 2: 415, 1830.

2. Schlagintweit, E.: Ueber Strychninwirkung auf die Sinne, insbesondere auf das Auge, *Arch. f. exper. Path. u. Pharmacol.* 95: 104, 1922.



therapeutic usefulness of strychnin in the treatment of disorders of vision was attained. Other agents in other conditions have had a similar history, and if the truth about newer and less promising agents than strychnin is to be known eventually, why not now? For economic, scientific and humanitarian reasons, the answer is obvious.

## Association News

### THE ACADEMY OF MEDICINE OF ATLANTA, GA.

For many years the Fulton County Medical Society has cherished the ambition to own a home suitably located and of a dignity befitting its purpose. In spite of the financial difficulties involved, the problem was attacked with enthusiasm and the cooperation of virtually every member of the society was secured. The outcome has been the purchase of a spacious building at 32 Howard Street, which has been remodeled to provide an adequate assembly hall, an attractive library, several committee rooms and

a number of smaller rooms suitable for offices or living apartments. The name selected is the Academy of Medicine of Atlanta, Georgia.

The first meeting in this new home was held Dec. 7, 1922, when Dr. J. Shelton Horsley of Richmond, Va., delivered an address on "The Relation of Biology to Medicine." The dedicatory services took place, December 15, when the hall was filled to capacity. Rev. C. W. Daniel, in an eloquent address, dedicated the Academy of Medicine to the advancement of science, and to the development of a fraternal spirit and the upbuilding of morale in the medical profession. The assembly hall has been named in memory of the late Dr. Abner W. Calhoun, and was fittingly dedicated by Lucien L.

Knight. The library has been named the John C. Westmoreland library, and was dedicated by Bishop Warren A. Chandler. Dr. Westmoreland was one of the pioneers of medicine in Atlanta, founded the Atlanta Medical College in 1853, and assisted in the organization of the Fulton County Medical Society, which has now grown to be the largest medical organization in the South.

The Fulton County Medical Society is proud of its Academy of Medicine, and realizes fully that its establishment marks but the beginning of effort. The aims of the Academy are "to foster a real bond of union among its members, to stimulate scientific study and to be a real home for the medical profession of Atlanta, of Georgia and of the South." Visitors will be heartily welcome, and every effort will be made to create an atmosphere of real hospitality in addition to that of scientific endeavor.

### THE SAN FRANCISCO SESSION

#### Omission from List of Published Routes

In THE JOURNAL, February 3, appeared a list of routes by which physicians may go to San Francisco to attend the annual session of the Association. The Chicago, Milwaukee and St. Paul Railroad was omitted from this list. This route operates trains from Chicago to Spokane, Seattle and Tacoma,

and also the Pacific Limited from Chicago by way of Omaha and Ogden to San Francisco.

#### Automobile Routes to San Francisco

Many motorists in single cars, small parties and motor caravans from various parts of the United States are already in correspondence with the Local Committee on Arrangements. California is the motorists' paradise. Any part of the state is now easily accessible from anywhere. Nothing could be more delightful than to combine vacation and pleasure by coming from anywhere to the annual session by motor. There are four main transcontinental motor road arteries from Eastern and Midwestern states to California.

The Lincoln Highway alone will be traveled by more than 60,000 cars this year. This is the most direct route from New York and Chicago to San Francisco. It passes through Omaha, Cheyenne, Salt Lake City and Reno.

The National Old Trails route is through Kansas City, Trinidad, Colorado, Albuquerque, N. M., Flagstaff, Ariz., Needles, Los Angeles and San Francisco.

The Yellowstone Trail is from Chicago through Milwaukee, Minneapolis, Aberdeen, across Montana, Idaho, and into Seattle or Portland by way of Spokane or Pendleton, and thence down the west coast into California.

Victory Highway makes good California connections from Denver through Salt Lake City. Salt Lake City is the key position between coast cities and most of the main motor arteries from the Eastern and Midwestern states. From Salt Lake City motorists can turn north through Pocatello, Idaho, Boise and Walla Walla to Portland, and thence south over excellent boulevard roads into California, or one can turn south at Salt Lake and follow the Arrowhead Trail through Provo, Beaver, St. George and Las Vegas to the National Old Trail through Goffs, and into Los Angeles and thence to San Francisco.

There are other good routes leading to the coast and into California. Once in the state of California, the motorist encounters a veritable

network of splendid roads leading to all cities and points of interest. Those interested in this method of transportation to the session should write for information or help of any character.

Address communications to Dr. W. E. Musgrave, California Headquarters 1923 American Medical Association Convention, 806-809 Balboa Building, San Francisco.

#### APPROPRIATION FOR SCIENTIFIC RESEARCH

The Board of Trustees of the American Medical Association has made the usual appropriation to further meritorious research in subjects relating to scientific medicine and of practical interest to the medical profession, which otherwise could not be carried on to completion. Applications for small grants should be sent to the Committee on Scientific Research, American Medical Association, 535 North Dearborn Street, Chicago, before March 15, when action will be taken on the applications at hand.

**The Dangerous Constitutional Psychopathic Inferior.**—Constitutional psychopathic inferiors should be prevented from engaging in occupations that endanger the lives of themselves and of others, especially in work about trains and in a host of other occupations.—William House, *California State J. M.* 21:29 (Jan.) 1923.



Home of the Academy of Medicine of Atlanta, Ga.



## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALASKA

**Alaska Territorial Medical Association.**—A letter from Secretary DeVighne states that, owing to the distances and difficulties of transportation, a meeting of the association will not be held until some time next summer. The officers for 1923 are: president, Dr. Joseph H. Romig, Nenana; vice president, Dr. Remaldo V. Ellis, Ketchikan, and secretary-treasurer, Dr. Harry C. DeVighne, Juneau.

### ARIZONA

**Personal.**—Dr. Harry R. Carson, Phoenix, has resumed his practice after a year's illness, following a nephrectomy.—Dr. Harry Felch, Phoenix, has succeeded Dr. Grant S. Monical as health officer of Maricopa County.—Dr. Douglas S. Duncan, formerly in the Indian Service, Fort Defiance, has been appointed to the Indian School Hospital, Phoenix, to succeed the late Dr. Augustus E. Marden.—Dr. Frederick S. Spearman, Rifle, Colo., has been appointed to take charge of the U. S. Indian Service Hospital, Rice.

### CALIFORNIA

**Personal.**—Dr. J. M. McDonald, San Francisco, sailed from New York, January 22, for a round-the-world cruise.—Dr. Edwin J. Riche has been appointed health officer of Watts.—Col. Robert Stanley, medical officer in charge of the U. S. Veterans' Bureau Hospital at San Jose, has been appointed in charge of the new hospital at Tuskegee, Ala. Col. Frank E. Leslie of Fort Mackensie, Sheridan, Wyo., will succeed Dr. Stanley.—Dr. Samuel S. Bogle, Santa Rosa, has been appointed county health officer of Sonoma County to succeed Dr. Fred O. Pryor, who resigned recently.

### DISTRICT OF COLUMBIA

**Bill for Public Health Work.**—A bill passed the House, January 8, containing the following appropriations for the District of Columbia:

Instruction of the deaf and dumb at Columbia Institution, \$20,250.  
Hygiene and sanitation, \$32,700.  
Health department, \$96,390.  
Prevention of contagious disease, \$69,000.  
Medical charities: Freedmen's Hospital, \$42,500; Columbia Hospital for Women, \$17,000; Children's Hospital, \$15,000; Providence Hospital, \$15,000; Garfield Memorial Hospital, \$15,000; Central Dispensary and Emergency Hospital, \$22,000.  
Columbia Hospital and Lying-in Asylum, \$15,000.  
Tuberculosis Hospital, \$75,000.  
Erection of nurses home at Tuberculosis Hospital, \$35,000.  
Gallinger Municipal Hospital, \$200,000.  
Equipment of Psychopathic Buildings, \$10,000.

**Memorial to Women.**—A bill was introduced by Representative Fess, December 29, by which an appropriation of \$150,000 is made as part contribution toward a memorial building in the District of Columbia to commemorate the services and sacrifices of the patriotic women of the United States during the World War. The bill stipulates that this memorial shall cost \$300,000 and that it shall be used as a permanent model chapter house of the American Red Cross under the charge of the District of Columbia chapter. Another section specifies that the \$150,000 given by the government shall not be available until another \$150,000 has been raised by private subscription. The bill was referred to the Committee of the Library.

### GEORGIA

**Personal.**—Dr. John B. Fitts, Atlanta, was recently elected secretary of the Southern Gastro-Enterological Association.—Dr. Stewart R. Roberts, Atlanta, has been elected president of the Southern Hospital Association.—Dr. Alice Moses, Atlanta, has been appointed director of child hygiene of Georgia under the state department of health, to succeed Dr. Dorothy Bocker, who resigned recently to return to her home in New York.—Dr. Roger C. Swint has been appointed superintendent of the Georgia State Sanatorium, Milledgeville, to succeed the late Dr. Lodrick M. Jones.—Dr. Conrad E. Keorper, retired lieutenant-colonel, M. C.,

U. S. Army, has resigned as acting health officer of Savannah.—Dr. Thomas W. Reid, Jr., Thomasville, was recently appointed physician to Thomas County.

### ILLINOIS

**Physician Convicted of Fraud.**—A verdict of guilty was returned by the jury, January 18, in the case of Dr. John G. Massie of Belleville, accused of operating a confidence game in connection with the sale of stock in the defunct Ilgahoma Petroleum & Gasoline Company.

**Habits of Typhoid Carriers Regulated.**—In an effort to prevent the recurrence of typhoid fever epidemics traced to carriers and, at the same time, avoid the necessity and hardship of quarantining those demonstrated to be carriers, the state department of public health has drawn up a contract which all known carriers of typhoid fever will be required to sign and comply with in order to escape continuous quarantine. The contract simply constitutes a signed agreement to the effect that the carrier will practice the most rigid personal hygiene rules and will not engage in occupations that make the handling or preparation of food necessary. It further requires a semi-annual report from the carrier to the department and a notice to the local health officer of any contemplated change in address. There are about thirty known typhoid fever carriers in the state at present, and eight of these have signed the contract. The others will be given an opportunity to sign as soon as is practical.

### Chicago

**Institute of Medicine.**—At a meeting of the institute, February 9, Dr. F. G. Banting, Toronto, read a paper on "The Value of Insulin in the Treatment of Diabetes"; Prof. J. J. R. McLeod, Toronto, spoke on "The Physiological Functions of Insulin."

**Chicago Medical Society.**—At a recent meeting of the Chicago Medical Society, Dr. Martin M. Ritter was elected chairman of a propaganda committee organized for the purpose of arranging for the care and treatment of drug addicts at little or no cost to the sufferers. Need for their care in other than penal institutions was brought to the attention of the council of the society. Other members of the propaganda committee are: Drs. George C. Amerson, William S. Bougher, John William Davis, Robert Emmet Keating, Paul E. Kelly and Clarence L. Wheaton.

### INDIANA

**"Healer" Convicted.**—Hubert E. Habig, who claimed that he had the power to heal all diseases, was found guilty of practicing medicine without a license by Judge Mungovan, at Fort Wayne, January 23, and was fined \$200 and costs.

**Memorial to Physician.**—A campaign for funds will be conducted in Lima for the erection of a \$500,000 city hospital, which will be dedicated as a monument to the memory of the late Dr. S. B. Hiner, founder and former president of the present Lima City Hospital, it was recently announced by Mr. Rickoff, president of the board of trustees.

### KENTUCKY

**Reciprocity with South Dakota and Texas.**—The state board of health reports that it has completed negotiations for reciprocity with South Dakota, and has concluded an additional agreement with Texas whereby reciprocal relations exist on the basis of either an examination or a diploma.

### MAINE

**Public Health Association Issues Booklet.**—The Maine Public Health Association has issued a booklet, entitled "The Ten Book or How to Keep Well," and the Metropolitan Life Insurance Company has made possible the distribution of 30,000 copies in Maine. The booklet contains ten subjects pertaining to health promotion, and each subject has ten points. The subjects are: the family physician, the public health nurse, social hygiene, mental hygiene, child hygiene, builders of Maine, your body, your eyes, your teeth, cancer and tuberculosis.

### MARYLAND

**All Physicians as Health Officers.**—Letters have been sent to all physicians in Maryland by the state board of health, containing a copy of a law passed at the last session of the legislature conferring on individual physicians the powers of



a county health officer in cases of emergency. This action was taken in view of the present emergency existing in the large number of influenza cases throughout the state.

# MASSACHUSETTS

**Cutter Lecture.**—Dr. Béla Schick, professor of pediatrics, University of Vienna, delivered the Cutter lecture on preventive medicine at the Harvard Medical School, February 8, on "Prevention and Control of Diphtheria."

# MICHIGAN

**Illegal Practitioner Arrested.**—Miss Erma Parks, chiropractor of Hillsdale, was found guilty in the circuit court, January 16, on a charge of practicing medicine without a license.—Peter Kansa, an itinerant practitioner, was arrested recently in Detroit for practicing medicine without being registered. He pleaded guilty and was fined \$100.

**Physician's Appeal Refused.**—Dr. Joseph C. R. Charest, Detroit, formerly of Plummer, Minn., convicted last June in Detroit for practicing medicine without a license, applied to the supreme court for mandamus proceedings to compel the medical board to indorse his Minnesota medical license. His application to the Michigan board had been refused for the reason that the college from which he graduated is not an accredited medical college in Michigan, and also for the reason that he had violated the medical practice act by practicing in the state prior to registration. His application for mandamus was recently vacated and he has returned to Minnesota.

# MINNESOTA

**Personal.**—Dr. Isaac F. Seeley, Northfield, has been appointed city physician to fill the vacancy left by the death of Dr. John G. Philips.—Dr. Albert H. Parks, Minneapolis, chief surgeon at the Minneapolis General Hospital, has been appointed to the board of public welfare, to succeed Dr. Archa E. Wilcox, who resigned recently.—Dr. James Frank Corbett, Minneapolis, and Stanley R. Maxeiner, Minneapolis, were elected president and secretary-treasurer, respectively, of the Northwestern Medical Officers' Association.

**Medical Society's Charter Revoked.**—A decision in favor of the Minnesota State Medical Association was filed recently in the Ramsey County Court in answer to the suit brought against the state association in regard to the legality of its action in revoking the charter of the Brown-Redwood Medical Society in 1918. The charter was revoked because of the refusal of the society to expel Dr. Louis A. Fritzsche of New Ulm, after he had been pronounced guilty of disloyalty by the state public safety commission. The petitioners asked for a writ of mandamus to compel the state association to reinstate the charter, and Judge Catlin's ruling was made in denying the writ.

# MISSOURI

**Prof. Lefevre Dies.**—Prof. George Lefevre, Ph.D., professor of biology at the University of Missouri School of Medicine, Columbia, since 1899, died, January 24, from pneumonia.

# NEBRASKA

**Personal.**—Dr. Charles W. M. Poynter, professor of anatomy, University of Nebraska College of Medicine, Omaha, spoke on "Pre-Indian Anthropology," before the Douglas County Medical Society, January 23.—Dr. A. C. Colman, Chappell, has been elected to the state legislature.—Dr. Lynch is having his private hospital building at Fairbury remodeled at a cost of \$25,000.—Dr. Hamilton B. Lowry, Lincoln, has been elected president of the Nebraska State Historical Society.—Dr. Joseph Bixby, Geneva, was injured recently when his automobile collided with a locomotive tender.

**Society News.**—At a meeting of the Omaha section of the American Chemical Society, December 19, Dr. Charles F. Crowley, Omaha, was elected chairman.—The Interstate Society of Radiology and Physiotherapeutics was organized at Omaha, December 16. Dr. Charles L. Mullins, Broken Bow, was elected president, and Dr. Roland G. Brueer, Lincoln, secretary-treasurer.—The Lancaster County Medical Society gave a farewell dinner in honor of Drs. Ira H. Lockwood and Harold F. Morrison, at Lincoln, January 18. Dr. Lockwood, for several years roentgenologist at Green Gables, has gone to Kansas City, Mo., and Dr. Morrison will locate in Cedar Park, N. Y.

# NEW JERSEY

**Chiropodist Fined.**—The state board of medical examiners reports that Jennie L. R. Hardy was fined \$200 for practicing chiropody without a license, recently.

**Hospital Additions.**—The new addition at St. Barnabas Hospital, Newark, has recently been opened.—Plans are being made for the erection of new additions to St. Michael's Hospital, the Homeopathic Hospital and the Newark Maternity Hospital, all of Newark.

**Personal.**—Dr. Michael Vinciguerra has been appointed president of the board of health of Elizabeth.—Drs. Albert Cuskaden and Joseph Poland, both of Atlantic City, sailed recently on the White Star liner *Homer* for Mediterranean ports.—Dr. Alfred Gordon, Philadelphia, addressed the Cumberland County Medical Society at Vineland, January 23.—Dr. H. Frances B. Tyson has been appointed health officer of Englewood.

# NEW YORK

**Hospital News.**—A \$100,000 psychiatric building at Rochester State Hospital is planned for teaching purposes in connection with the new medical school of the University of Rochester.—The U. S. Hospital Fund campaign, January 14-23, to raise funds for the Rochester General, the Highland and the Rochester Homeopathic hospitals, ended three days ahead of time with \$1,300,000, exceeding the quota by \$37,000.—Henry A. Bowman of Webster has been appointed superintendent of the Monroe County Tuberculosis Sanatorium, Rochester, at a salary of \$3,000 a year. Dr. John J. Lloyd will devote his full time to the medical work of the sanatorium as physician-in-chief.

**Society Elections.**—The Italian Medical Society of Brooklyn elected Dr. Joseph A. Manzella president for 1923, and Dr. John B. D'Albora, secretary.—At the annual meeting of the Metropolitan Medical Society, Dr. S. Philip Goodhart was elected president; Dr. Herman Schwarz, vice president and Dr. Morris Grossman, treasurer.—Dr. Siegfried Block was elected president of the Brooklyn Medical Society; Dr. Benjamin F. Maggio, vice president, and Dr. Adolf Von P. Fardelmann, secretary.—At the annual meeting of the Erie County Medical Society at Buffalo, December 18, Dr. Charles E. Abbott was elected president; Drs. Marshall Clinton and Charles Borzilleri, vice presidents, and Dr. Levi Franklin Anderson, treasurer.—At the thirty-fifth annual meeting of the Associated Physicians of Long Island, January 27, in Brooklyn, the following officers were elected for the ensuing year: president, Dr. Hough Halsey, Southampton; vice presidents, Drs. Herbert Dana Schenck, Brooklyn, Arthur David Jaques, Lynbrook, L. Howard Moss, Richmond Hill, and W. C. Garvin, superintendent of King's Park State Hospital; secretary, Dr. James Cole Hancock, Brooklyn, and treasurer, Dr. Henry C. Courton, Richmond Hill.

**Increase in Alcoholism.**—Dr. S. Dana Hubbard, director of public health education of the department of health, has recently made public figures showing that, since the last year before the prohibition law went into effect, there has been a constant increase in this city in the number of arrests for drunkenness, the number of deaths due to wood alcohol poisoning and the number of persons admitted to Bellevue and Kings County hospitals suffering from acute alcoholism. The figures show that during the last year 5,624 persons suffering from acute alcoholism were admitted to those two hospitals, as against 3,345 for the preceding year. Likewise the number of deaths from alcoholism nearly doubled last year. For 1922, the deaths numbered 295 as against 141 for 1921. The number of deaths, however, is smaller than it was in the years preceding prohibition. In 1916, for example, 690 persons died in this city from alcoholism. The low mark was reached in 1920 with 127 deaths but since that time there has been a rapid increase. Dr. Hubbard's figures have been verified by those of the police department, which show that 7,866 persons were arrested in this city for drunkenness in 1922, as against 6,233 in 1921. In 1920, the number of arrests was 5,936. Dr. Hubbard's interpretation of the figures is that prohibition has increased the number of immoderate drinkers, and that those who drink have switched from beer to spirits.

# New York City

**Physician's License Revoked.**—The state board of medical examiners reports that the license of Dr. Leopold Harris was revoked following conviction in the federal courts for violation of the Harrison Narcotic Law.



**Evening Clinics at the Post-Graduate Hospital.**—Evening clinics in gynecology and in diseases of the nose and throat have been established at the Post-Graduate Hospital. These clinics are held on every Wednesday and Friday evening.

**Influenza Warning.**—The New York City Health Department has issued a warning urging the public to guard against the spread of influenza. The records of the department show that 131 cases of influenza were reported on February 1, making a total of 1,114 cases since January 1. Most of the cases have been mild.

**Farewell Dinner to Dr. Copeland.**—Friends of Health Commissioner Dr. Royal S. Copeland, United States Senator-Elect, are preparing to give him a farewell dinner at the Hotel Astor, February 12, prior to his leaving for Washington. George Gordon Battle is chairman of the dinner committee and Bainbridge Colby will act as toastmaster.

**New Ambulance for Fire Department.**—A new ambulance, especially equipped with pulmotors and other appliances required to meet conditions likely to be met with in those engaged in fighting fire, has been presented to the New York Fire Department by honorary Deputy Chief William F. Kenny. The ambulance, which was designed by Dr. William H. White and Dr. H. M. Archer, cost \$15,000 and the donor has provided a fund of \$25,000 for its maintenance.

**Expansion of Academy of Medicine.**—In connection with the announcement that the trustees of the New York Academy of Medicine have acquired an option on a site for a new building at Sixtieth Street and Park Avenue, it is announced that on condition that the members of the academy acquire an appropriate site the Rockefeller Foundation will contribute \$1,000,000 for the erection of a new building and that the Carnegie Foundation will contribute an endowment fund sufficient to care for the increased needs of its library and the enlarged educational activities that the institution is planning to carry on.

**Cornell University Clinic to Establish Health Clinic.**—Dr. G. H. Biglow, director of the clinic of the Cornell University Medical College, announces that it is proposed in the near future to establish a health clinic. Patients will fill out a brief questionnaire in advance and receive a thorough physical examination, especial attention being given to defects of posture, diet and exercise. In the questionnaire the name of the family physician is asked and if need of medical attention is found, the patient is referred to his physician and report of the findings is sent to him. The charge for the examination is announced as \$5 and the attending physician is expected to give about forty-five minutes to each examination. Physicians in the clinic doing this work are compensated and, when necessary, follow-up visits are made at the regular clinic rates. As was stated in the notice published concerning the report of this clinic for the first year, the average cost per visit was \$2.08 while the average cost to the patient was \$1.57. It is stated economies within the clinic are being instituted and the question of increasing the fees is under consideration.

#### NORTH CAROLINA

**Marriage License Bill.**—A bill has been introduced into the house by Representative Mabry which provides that no officer charged by law with the issuing of marriage licenses shall issue a license to any male applicant, unless the applicant shall first file a certificate of a reputable physician stating that he is free from all venereal disease (the certificate not to date more than ten days prior to the date of application). The certificate of health shall be filed together with the marriage license as part of the record of the marriage. Any false statement made in any such certificate, or any other violation of the act, shall be deemed a misdemeanor and will subject the offender, on conviction, to a fine of not more than \$100 or imprisonment of not more than thirty days, the bill further stipulates.

**Public Health News.**—For the last four years, the state of North Carolina has had a very effective system of medical inspection of schoolchildren, because provision is made through a small appropriation from state funds for treatment of those children found needing attention on account of remediable physical defects, such as diseased tonsils and decayed teeth. Acceptance of the treatment offered by the state is altogether optional on the part of the parent. In his annual report for the year 1922, Dr. G. M. Cooper, director of the division of medical inspection of schools, states that dental clinics were held in thirty-nine counties and 32,382 children received free dental treatment. More than 40,000 teeth were permanently filled. The work has the unqualified

support of the North Carolina Dental Society. Tonsil clinics were held in twenty-eight counties, most of them in sections having no hospitals or throat specialists. In these clinics, 2,488 children were successfully operated on by twenty of the leading specialists of the state. The operations were performed in a temporary hospital equipped with the most modern appliances, including twenty-five beds for the overnight care of the little patients. This equipment is, of course, portable.

#### OHIO

**Obstetricians Elect.**—At the annual meeting of the Obstetrical Society in Cincinnati, January 11, Dr. Louis Schwab was reelected president and Dr. Franz Miketta, secretary-treasurer.

**Gift to Establish Medical Scholarship.**—It was announced at the last board meeting of the University of Cincinnati College of Medicine that a gift of \$3,000 to establish a medical scholarship in memory of his wife had been donated by Judge Harry M. Hoffheimer. The annual net income is to be awarded yearly to the graduating student who, on a majority vote of the faculty, is selected as first in rank in scholarship.

#### OKLAHOMA

**Personal.**—Lieut.-Col. Arthur M. Whaley, M. C., U. S. Army, stationed at Fort Sill, has been awarded the distinguished service medal in recognition of his work in the care and evacuation of the wounded in France.—Drs. Charles L. Reeder, Robert S. Wagner and Francis C. Myers were unanimously elected members of the board of health of Tulsa, January 19.—Dr. Harvey E. Rappolee, Madill, has been appointed health officer of Marshall County to succeed Dr. Thomas A. Blaylock.—Dr. A. E. Davenport, Oklahoma City, has been appointed state health commissioner of Oklahoma to succeed Dr. Arthur R. Lewis.—Dr. Isaac N. Cottle, Oklahoma City, was recently elected health officer of Oklahoma County.—Dr. George E. Hartshorne, Tulsa, has been appointed county health officer to succeed Dr. C. L. Reeder.

#### PENNSYLVANIA

**Society News.**—The Mahoning County Medical Society celebrated its fiftieth anniversary, February 1, by holding a joint meeting with the Lawrence County Medical Society at the Youngstown Country Club. Dr. Charles D. Humes, Indiana University, addressed the meeting.

**State Health Commissioner Appointed.**—Dr. Charles H. Miner, Wilkes-Barre, has been appointed state health commissioner of Pennsylvania to succeed Dr. Edward Martin. He will have the cooperation of Dr. Victor G. Heiser, New York, who recently declined the position because he wished to retain his connection with the Rockefeller Foundation.

**Diphtheria Week.**—The public relations committee of the state medical society, at a recent meeting in Harrisburg, planned a "Diphtheria Week" in April, when it proposes to enroll local authorities, school, state, church, business, civic and welfare organizations, industry and labor, in an effort to carry the message of diphtheria prevention and cure to every citizen of the state.

**State Society Purchases Home.**—The Medical Society of the State of Pennsylvania purchased the property at 230 State Street, Harrisburg, January 23, from Dr. Jesse L. Lanker, for \$17,000, it is announced. The society will make a number of improvements on the property; and, after April 1, the offices of the *Pennsylvania Medical Journal* and those of Dr. Frederick Van Sickle, executive secretary of the state medical society, will be moved into the building. The name of the journal will be changed to the *Atlantic Medical Journal* (THE JOURNAL, January 27, p. 262), and the Delaware State Medical Society will unite with the Medical Society of the State of Pennsylvania, in its publication.

#### Philadelphia

**New Quarters for Medical Society.**—The offices of the Philadelphia County Medical Society have been moved to the Real Estate Trust Building, Philadelphia.

**New Building of Methodist Hospital Opened.**—The new building of the Methodist Episcopal Hospital, Philadelphia, was formally dedicated, January 1, by Bishop Berry. Dr. Charles M. Boswell, secretary, also gave an address. It is a five-story building, located at the south end of the administration building. It will increase the capacity of the hospital by providing fifty-two cribs in the children's wards; eighty-four beds in private rooms and thirty-two beds in semiprivate rooms. Mr. and Mrs. Keene provided funds for one of the



children's wards by a gift of \$20,000 and Mr. and Mrs. Haddon for the other by a gift of like amount. A donation of \$5,000 was received as a New Year's gift, and Mrs. Freeman made a gift of \$1,000; an anonymous Philadelphian stated that he will donate \$70,000, in addition to the \$5,000 he has already given, on condition that the entire cost of the building, \$400,000, be secured. The amount to the credit of the new building up to the present is \$275,000.

#### RHODE ISLAND

**Society News.**—Dr. LeRoi G. Crandon, Boston, chief surgeon of the Boston City Hospital, the Chelsea Memorial Hospital and the Home Memorial Hospital of New London, was the principal speaker at the annual meeting of the Washington County Medical Society at Westerly, January 11. Officers elected for 1923 were as follows: president, Dr. John E. Ruise; vice presidents, Drs. Francis E. Burke and Michael H. Scanlon, and secretary-treasurer, Dr. William A. Hillard.—Dr. Lee W. Dean, dean of the State University of Iowa College of Medicine, Iowa City, gave an address before the eastern section of the American Laryngological, Rhinological and Otological Society at Providence, January 27.

#### TEXAS

**Hospital News.**—Three new units have recently been constructed at the Parkland Hospital, Dallas, at a cost of \$525,000. These are the pay ward, the contagious ward and a ward for general cases.—A hospital to be known as the Richmond Freeman Hospital will be erected in Dallas by the First Presbyterian Church, at a cost of \$45,000. The contract has already been let.—Bids have been called for the first three units of the Herman Hospital, which is to be erected at Dallas at a cost of approximately \$700,000.

#### VERMONT

**Personal.**—Dr. Donly C. Hawley of the University of Vermont, Burlington, addressed the physicians of the Rutland County Medical and Surgical Society in Burlington, January 9. Dr. Ralph B. Seeley presided.—Dr. William T. Slayton, Morrisville, has resigned as a member of the state board of health.

#### WEST VIRGINIA

**Personal.**—Dr. Melville L. Casselberry, Morgantown, celebrated his ninety-second birthday recently. He has been in practice more than seventy years and still continues his office practice.—Drs. R. H. Edmonson and William B. Scherr, Morgantown, were elected president and secretary, respectively, of the Monongalia County Medical Society at the annual meeting. Dr. Luther S. Brock, aged 78, was made a life member of the society.—Dr. Irvin Hardy, Morgantown, has recently returned from attending clinics in Edinburgh, London, Paris and Vienna.—Dr. Alexander C. Abbott, professor of bacteriology and hygiene at the University of Pennsylvania, Philadelphia, addressed the Ohio County Medical Society at Wheeling, January 12. His subject was "Carriers as a Public Health Problem."

#### WISCONSIN

**Wisconsin Surgical Association.**—The next annual session of the association will be held in La Crosse, May 9-10. All members of the state medical society are invited to attend.

**Hospital News.**—The Portage Hospital, Portage, will reopen in April with Dr. W. J. Thomson in charge. He has been in Chicago taking graduate work and acting as locum tenens for Dr. William S. Fisher, who has gone to India.—A \$45,000 hospital will be erected at Edgerton in memory of the men who fought in the World War.

#### CANAL ZONE

**Medical Association of the Isthmian Canal Zone.**—The annual meeting of the association was held in Ancon, December 15, under the presidency of Dr. Cornelius D. Briseoe, Ancon. The following officers were elected for the ensuing year: president, Major Edgar A. Bock, superintendent of the Santo Tomas Hospital, Ancon; vice president, Dr. Raymond W. Runyan of the Panama Hospital, Ancon, and secretary-treasurer, Dr. Dillon G. O'Neil of the Corozal Hospital, Corozal. The secretary reports that Dr. Leland S. Chapman has left the Ancon Hospital and will reside in Los Angeles, and that Dr. Louis Wender of the Corozal Hospital has gone to Brooklyn.

#### CANADA

**Campaign Against Latin Prescriptions.**—John Charles Buckley, a member of the Alberta Provincial Legislature, has inaugurated a war against Latin names used by physicians and druggists. Mr. Buckley intends to introduce an amendment to the medical act, requiring the medical profession to eliminate "doctors' English" from their prescriptions.

**Society News.**—The annual meeting of the Canadian Medical Association will be held in Montreal, June 12-14, under the presidency of Dr. David H. Arnott, London, Ont.—The New Brunswick Medical Society will establish a new precedent this year by holding its annual meeting outside the boundaries of the province. In conjunction with the annual meeting of the Maine Medical Association, the New Brunswick organization will hold a combined meeting at Houlton, Maine, June 12-13.—The next annual meeting of the British Columbia Hospital Association will be held at Penticton, August, 1923.

**Hospital News.**—The Toronto General Hospital operated in 1922 with a deficit of \$68,762, exceeding the deficit of the previous year by \$4,000. After some discussion, the board of trustees decided to make representations to the special university committee in connection with the controversy now in progress as to the relations between the university medical faculty and the General Hospital.—On condition that the citizens of Montreal raise \$150,000, the city of Montreal and the provincial government of Quebec will establish a \$1,000,000 tuberculosis hospital in Montreal, with an endowment representing a cash expenditure of nearly \$2,000,000. The Mont LaSalle site and building in Maisonneuve, and cash grants, have already been donated by the city.

**Personal.**—Dr. Edwin J. Rothwell, New Westminster, president of the Fraser Valley Medical Society has resumed office work following a prolonged illness.—Dr. Gordon S. Mundie, Montreal, sailed, January 15, on the *Megantic* for a cruise to South America.—Dr. Linsly R. Williams, director of the National Tuberculosis Association, has accepted an invitation to lecture at McGill University, Montreal, on "Industrial Work from the Standpoint of Tuberculosis." His will be one of a course given during the spring of 1923 on the general subject of industrial medicine.—Dr. T. O. Martin, Montreal, Que., has been appointed inspector of hygiene for that city.—Dr. H. M. Robinson of Victoria, B. C., has been elected president of the Victoria Medical Society.

#### GENERAL

**American Society for Experimental Pathology.**—Dr. Eugene L. Opie, St. Louis, was elected president, and Dr. Wade H. Brown, New York, was elected secretary-treasurer, of the American Society for Experimental Pathology, at the annual meeting in Toronto, recently.

**Radiology Journal Changes Title.**—Commencing with the January issue, the *American Journal of Roentgenology* will be known as the *American Journal of Roentgenology and Radium Therapy*; when founded in 1906 it was called the *American Quarterly of Roentgenology*.

**Relief for German Children.**—The American Red Cross, in response to urgent representations by the German Red Cross, has sent \$5,000 to relieve distress among German children. Reports from various sources indicate that children in Germany are suffering privation this winter owing to the lack of milk and foods essential to their health.

**American Society for Pharmacology and Experimental Therapeutics.**—At the annual meeting of the society in Toronto, Canada, recently, the following officers were elected for the ensuing year: president, Dr. Charles W. Edmunds, Ann Arbor, Mich.; secretary, Dr. Edgar D. Brown, Minneapolis, and treasurer, Dr. Hugh McGuigan, Chicago.

**Public Health Among the Indians.**—A bill passed the Senate, January 5, containing an appropriation of \$370,000 for hospitals, for medical treatment and for the care and preservation of public health among the Indians. An item of \$25,000 for the suppression of liquor and drugs, including peyote, was struck out.

**Commission for Greek Relief Named.**—The chairman of the American Red Cross has announced the appointment of Lieut.-Col. William N. Haskell as American Red Cross commissioner to Greece and Major Edmund L. Daley as deputy commissioner. The appointment of a commission to Greece was made on request of Dr. A. Ross Hill, vice chairman in charge of foreign operations, who has been in Greece since October, 1922, in charge of the American Red Cross refugee work.



**Bill Proposes Parental Court.**—A bill was introduced into the House by Senator Brookhart, January 6, which provides that all children under 18 years of age who commit acts in violation of any of the laws of the United States shall be legally designated as infants. They are taken out of the jurisdiction of the regular criminal courts and placed under a U. S. parental court, established by this bill. The court is given power to act as guardian for such offenders and a United States parental guardian is authorized, to be appointed by the President.

**National Health Council.**—Plans have been completed for the issuance of bi-weekly bulletins on state health legislation during 1923 by the National Health Council. They will be published by the U. S. Public Health Service with the cooperation of the health council, and will be under the direct supervision of Surg. Mark J. White, U. S. Public Health Service, and Drs. D. B. Armstrong and James A. Tobey, Washington, D. C. The bulletins will be distributed without charge to a mailing list limited to 200, including the state health officers, members of the National Health Council and a few others. The first issue appeared January 20.

**American Library Association.**—It is announced by the association that a book on "The Hospital Library" will be published if a real demand for such a publication is evidenced by advance orders. The book has been edited and in large part written by Edith K. Jones, general secretary, division of public libraries of the department of education, Boston. The material brought together for the book includes chapters on the scope of hospital library service; hospital library organization and administration; book selection; the medical library; serving the children's wards; stories to read aloud, and a list of more than 2,000 books to meet the needs of hospital patients and nurses. The book will be illustrated with photographs of hospital library rooms, equipment and activities.

**A Warning.**—THE JOURNAL has published several announcements warning physicians against impostors who have been victimizing physicians in various cities by representing themselves as visiting physicians who have been unfortunately robbed and who desire to obtain money for transportation home. This particular method of securing money has been worked in Philadelphia, St. Paul, St. Louis, Chicago, Milwaukee and other cities. A letter has just been received from Dr. Jacques Holinger, Chicago, stating that among recent victims have been Dr. Vilray P. Blair, St. Louis; Dr. Harry Ritchie, St. Paul; Dr. Robert Ivy, Philadelphia, and Dr. G. V. I. Brown, Milwaukee. Physicians should be on the lookout for any one personally unknown to them who desires to borrow money under the name of a physician; it would be desirable to apprehend and cause the arrest of the impostors.

**National Industrial Conference Board.**—The thirty-sixth annual meeting of the Conference Board of Physicians in Industry was held in New York, January 20, under the presidency of Dr. John J. Moorhead. Among the subjects discussed was that of industrial medical records and roentgen-ray examinations. In a report submitted on the roentgen-ray examination of the chests of more than 3,000 employees in one factory, it was stated that, by refinements of technic, it had been possible to make these exposures at the rate of about one per minute. A specially devised caliper was shown for measuring the depth of the chest, thus enabling a more accurate exposure. This study showed that 3.7 per cent. of those examined had positive or suspicious symptoms of pulmonary tuberculosis; 3.2 per cent. presented abnormalities of the heart or aortic arch, and 0.8 per cent. had miscellaneous chest abnormalities; a total of 7.7 per cent. of those examined having some abnormality of the chest.

**National Hospital Day Committee.**—E. S. Gilmore, superintendent of the Wesley Memorial Hospital, Chicago, has been appointed chairman of the national hospital day committee to succeed Dr. Lewis A. Sexton, superintendent of the Hartford (Conn.) Hospital. Dr. Malcolm T. MacEachern, superintendent of the General Hospital, Vancouver, B. C., Canada, who is on a year's leave of absence to conduct a survey of Canada for the Victorian Order, succeeds Mr. Gilmore as vice chairman and is Canadian director for the movement. C. J. Cummings, superintendent of the Tacoma General Hospital, and Dr. Albert S. Hyman, superintendent of the Mount Sinai Hospital, Philadelphia, are the two new members appointed to the committee, of which Dr. Hugh S. Cumming, surgeon-general, U. S. Public Health Service, is also a member. The committee has issued the first call for names of hospitals planning to observe the third annual hos-

pital day, May 12, 1923. Suggestions for programs and other information will be sent, on request, by the secretary, Matthew O. Foley, 537 South Dearborn Street, Chicago.

**Carnegie Corporation.**—A remarkable group of varied activities, together with gifts during the last eleven years of nearly \$58,000,000, is disclosed in the annual report of the Carnegie Corporation, made public, February 5. The major interests at present receiving support wholly or largely from this corporation are: the Institute of Economics, Washington, D. C.; the food research institute at Stanford University, San Francisco; the National Research Council, Washington; the Potter Metabolic Laboratory, Santa Barbara, Calif.; the American School of Classical Studies, Athens, Greece. A total of \$5,254,000 had been paid to beneficiaries during the year ended, September, 1922, of which \$2,578,000 went to universities. Of nearly \$58,000,000 expended during the eleven years of the corporation's existence, \$23,415,000 has been given to Carnegie institutions: the Institute at Pittsburgh, the Foundation in New York, and the Institution, and the Peace Endowment in Washington, D. C. Schools and colleges have received \$9,276,000; medical and health education, \$3,266,000, and scientific research, \$1,511,000. It is announced that the board of trustees will be enlarged from ten to fifteen members. The assets of the corporation amount to \$130,000,000, which will be increased by about \$10,000,000 on the final settlement of Mr. Carnegie's estate.

**Importation of Narcotics Temporarily Suspended by Control Board.**—Temporary but complete suspension of all applications to import narcotic drugs into the United States was put into effect this week through an order issued by the federal Narcotics Control Board. The official notice was sent out to all persons permitted under the law to import narcotics, including manufacturers actually engaged in manufacturing from crude opium or coca leaves products for the wholesale trade, for medical or other legitimate purposes. This step was taken to prevent the legal importation of narcotics until the board can determine the amount needed by the United States during the year for "medical or other legitimate purposes." Notice that the embargo has been laid down has been sent to all persons permitted to import, in the form of invitations to attend hearings in Washington looking toward determination of the amount of drugs needed for this country during the present year. The board consists of the Secretary of State, Secretary of Treasury and Secretary of Commerce. Decision to exclude all imported drugs under the act was declared by Mr. Hayward, secretary to the Narcotic Control Board, to be an important and far-reaching step in the war on narcotic drugs. As the importation of all narcotics except crude opium or coca leaves was prohibited by the Jones-Miller Act of May 26, last, leaving only two raw materials importable under the law, the action of the board effectively shuts down completely on all importations whatever of narcotic and habit-forming drugs into the United States. Under the Jones-Miller act such drugs as heroin, codein and cocain were prohibited from import under any conditions, only the crude materials being admitted by permission of the Federal Control Board.

## LATIN AMERICA

**Yellow Fever Eradicated from Peru.**—It is announced by Dr. Henry Hanson, director of public health for the Republic of Peru and of the Peruvian yellow fever campaign carried out by the Rockefeller Foundation and the government, that Peru is free from yellow fever for the first time in history. There have been no cases reported since August, 1921, so practically the whole western coast of the Western Hemisphere may be said to be cleared of the disease.

## FOREIGN

**Clinical Research Association.**—The *Journal of the Clinical Research Association* (Great Britain) has resumed publication for the first time since 1915. An improved design has been adopted, and, in addition to the scientific literature, space is now available for correspondence. Comments will be welcomed.

**Alory-Gillois Prize.**—The School of Medicine, Nantes, has offered a prize of 800 francs, with a medal, for the best essay on "Pulmonary Phthisis." The essay must be written in French, and the author's name enclosed in an envelop together with his qualifications. Competitors should forward their work to the Secretariat de l'Ecole de Médecine, Nantes, before June 30, 1923.



**Personal.**—Prof. C. Firket, of the chair of pathologic anatomy at Liège, has been elected president of the Royal Academy of Medicine at Brussels.—Dr. L. Asher, professor of physiology at the University of Berne, Switzerland, is planning to visit this country in the spring to deliver some addresses in medical centers.—Dr. B. A. Nocht, director of the Institute for Marine and Tropical Diseases, at Hamburg, has been asked to join the public health council of the League of Nations, and has gone to Geneva to take part in the discussions.—Dr. Gräff, privat-doziert for pathologic anatomy at the University of Heidelberg, has been invited to deliver a course of lectures in Japan.—Dr. Fedor Krause, professor of surgery at the University of Berlin, has returned from a long visit to South and Central America, his second visit within three years.—Dr. H. García Lagos, chief surgeon of the British Hospital at Montevideo, who has been visiting in this country, sailed from New York for Europe on the *America*, January 20.

**Lisbon's Institute for Scientific Research.**—A Portuguese merchant, who had amassed a fortune in Brazil and returned to Lisbon to live, recently bequeathed his fortune to found an institute for scientific research, naming Prof. Ferreira de Mira as the one to have charge of the institution. No specifications as to site, scope or other details were made, and no scientists knew of the provisions of the will in advance. As Prof. Ferreira de Mira had no personal acquaintance with the testator, and as he is the incumbent of the chair of biology, the council that was organized by the state for the creation of the institute decided that Lisbon should be the location, and the biologic sciences the field of the Bento da Rocha Cabral Institute for Scientific Research. The *Medicina Contemporanea* gives the details of the undertaking, and congratulates the country on this son, who was not only philanthropic but supremely intelligent. "He realized that the basis for all progressive civilization is in the development of the sciences, creating better conditions of living for all classes." The money will soon be available, and work will be begun at once.

**Medical News from South Africa.**—At a meeting of the Eastern Province Branch of the British Medical Association, held under the presidency of Dr. W. Duncan Miller, it was resolved to ask the South African Medical Association to meet in Grahamstown in 1924 instead of in October, 1923, as previously arranged.—Dr. T. W. Lowden of Johannesburg, was found dead from hyoscin poisoning (suicidal intent being indicated), December 19.—Dr. J. A. Kesier has been appointed medical inspector of schools for the Transvaal, to succeed Dr. Leipold.—The foundation stone of a new tuberculosis clinic was laid in Johannesburg in December by the mayor of the city.—Dr. Mackenzie has been appointed lecturer on skin diseases at the new University of Witwatersrand.—A limited liability company is reported to have been formed at Cape Town for the purpose of taking over a large, established undertaking business, with the object of combining with the business a funeral club and a medical aid branch, through which people will, for a fixed subscription, receive medical attention in case of illness, and burial in case of death. Of the three provisional directors, one is a physician and one a dentist.

#### Deaths in Other Countries

Dr. David L. Davies, justice of the peace and mayor of Neath, Wales.—Dr. J. B. Haycraft, emeritus professor of physiology at the University of Wales, aged 65.—Lieut.-Col. A. A. Lyle, R.A.M.C., at Douglas, Isle of Man, Jan. 9, aged 67.—The death is reported of Dr. Johannes Orth, Virchow's successor as director of the Pathology Institute at Berlin, professor emeritus of pathologic anatomy at the University of Berlin, and president for many terms of the Berlin Medical Society, aged 76. He read a paper on "Pathology and Its Relation to Other Sciences," at the St. Louis International Congress in 1904.—Dr. José Madina-veitia, the leading internist and psychiatrist of Bilbao.—Dr. A. Carruccio, professor of zoology and parasitology at the University of Rome.—Dr. E. Cavazzani, professor of physiology at the University of Ferrara.—Dr. W. Hauser, prominent in the public health service of Baden, aged 73.—Dr. A. Kirstein, noted for his autotomy of the larynx. He retired from the practice of medicine some time ago to devote himself to painting.—Dr. O. Dornblüth, author of textbooks on internal medicine, psychiatry, dietetics and neurology, proprietor of a sanatorium at Wiesbaden, aged 62.—Dr. A. Paetz, director of the state institution for the insane at Alt-Scherbitz, aged 71.

## Government Services

### Shortage of Navy Medical Officers

Difficulty is being experienced in filling vacancies in the Medical Corps of the navy. A campaign is being inaugurated by the navy department for the purpose of inducing civilian physicians to enter the navy service. Letters are being sent out calling attention to the opportunities afforded. The shortage of medical officers has prevented the Surgeon-General of the navy from carrying out plans for advanced educational courses. Notwithstanding this shortage, several medical officers are undergoing special study and instruction in advanced professional work at the Massachusetts General Hospital, Boston, and at the Mayo Foundation at Rochester, Minn. Regular classes of navy medical officers are being assembled for a graduate course at the Naval Medical School in Washington, D. C., and in the army school for flight surgeons at Mineola, L. I. In connection with the class to be sent to the latter school, Surgeon-General Stitt is desirous of receiving applications for assignment to the next class, to replace the present class of eleven officers now taking the course. Flight surgery has become an important activity of the Naval Medical Corps. Sixty-five medical officers will be assigned for duty in the aviation branch of the naval establishment.

### Chemists Awarded Medals

Distinguished service medals for meritorious work by officers in the Chemical Warfare Service serving with the Expeditionary Force during the World War were awarded to chemists who were connected with or assigned to the dangerous work of coping with the deadly effects of gas in both defensive and offensive warfare. The officers selected are cited for marked scientific attainments. The list includes: Col. R. F. Bacon and E. W. Johnston, Corps of Engineers; Col. J. W. Schulz, Chemical Warfare Service; Lieut.-Cols. J. H. Hilderbrand, B. C. Goss and H. L. Gilchrist, Medical Corps; Lieut.-Cols. G. W. Lewis, R. M. Smith and J. E. Zanett, Chemical Warfare Service; Major S. Karl Connell, Medical Corps, and A. M. Prentiss, Chemical Warfare Service.

### New Bill Follows President's Veto

The new Senate bill providing for increased pensions for veterans, their widows and nurses, of the Mexican and Civil wars was favorably reported to the Senate this week by the Committee on Pensions. It eliminated many objectionable features that caused President Harding to veto a similar piece of legislation that had passed both the Senate and the House.

### Veterans' Bureau Medical Corps

In retiring as medical director of the Veterans' Bureau, Lieut.-Col. R. U. Patterson advocated the establishment of a medical and dental corps for the bureau. He paid high tribute to the cooperation in the medical division of the bureau by medical officers in other branches of the government and by civilian physicians, but said the "salvation" of the medical department of the Veterans' Bureau lay in establishing and maintaining its own corps of medical and dental officers. He pointed out the necessity of keeping high the standards of the medical personnel of the bureau, and expressed the belief that this could best be achieved if appointment to the corps were made by strict examination only.

### Medical Supply Depots

Pursuant to instruction of the Secretary of War, the organization of an army medical supply depot, organized reserves, to be known as Army Medical Supply Depot No. 16 (Fourth Corps Area Unit) has been authorized; also Base Medical Supply Depot No. 3 (Illinois State Unit); Army Medical Supply Depot No. 18 (Eighth Corps Area Unit) and Army Medical Supply Depot No. 17 (Eighth Corps Area Unit).

### Bill for Retirement of Emergency Officers Tabled

The Bursum bill, authorizing the retirement of disabled volunteer and emergency officers who served during the World War on the same basis as Regular Army officers



with reference to pay, allowances and other privileges, was defeated in the House of Representatives Committee on Military Affairs by a vote of 8 to 7. The measure passed the Senate several months ago. It is one of the pieces of legislation being urged by organizations of World War veterans, including the American Legion. A party caucus was recently called in the House to consider the advisability of passing the bill, but no action was taken, because of lack of a quorum.

#### Status for Sanitary Engineers

A bill was introduced into the Senate, December 27, by Senator Watson of Indiana which provides that sanitary engineers of the U. S. Public Health Service shall be appointed and commissioned in the regular corps of the service with the same pay, allowances and rank as medical officers.

#### Evacuation Hospitals Authorized

Pursuant to instructions of the Secretary of War, the organization of the following hospitals has been authorized: Evacuation Hospital No. 22 (Milwaukee Surgical Society Unit, Milwaukee); Evacuation Hospital No. 4 (Washington University School of Medicine, St. Louis), and Evacuation Hospital No. 1 (Johns Hopkins Hospital Unit, Baltimore).

### Foreign Letters

#### LONDON

(From Our Regular Correspondent)

Jan. 15, 1923.

#### Differentiation of the School Curriculum for Boys and Girls

The Consultative Committee on the Differentiation of the Curriculum for Boys and Girls in Secondary Schools, whose operations were suspended during the war, has now presented a report. The committee was appointed by the board of education. It consists mainly of educationists, but includes Dr. J. G. Adami, chancellor of the University of Liverpool, formerly professor of pathology at McGill University. Though the problems are educational, they have an important medical aspect. In consequence of the eminence of the members and the thorough nature of the inquiry, the report will long remain the most authoritative pronouncement on the subject. It begins with an exhaustive history of the curriculums for boys' and for girls' schools, with a consideration of the objections and criticisms that have been directed against them, especially on the tendency in the second half of the last century to make the curriculum for the girls conform to that for the boys. It is pointed out that the education of the girls has passed through two stages and perhaps is now entering on a third. To 1850, and even later, it was assumed that the education of girls must be different from that of boys, because they belonged to the "weaker" sex. This was the stage of feminine accomplishments and of educational inefficiency. In the next stage, perhaps now drawing to a close, efficiency was held to depend on identity of education of the sexes, which was based on their equality. It was marked by a great advance in efficiency. But if new strength was gained, old and delicate graces were perhaps lost. The committee holds that we are now entering on a third stage in which we can afford to recognize that equality does not demand identity, but is compatible with, and even depends on, a system of differentiation under which each sex seeks to multiply its own peculiar talents.

The committee is not convinced that there are clear and ascertained differences between the sexes on which an educational policy can readily be based, but considers that it would be fatal, at the present juncture, to prescribe one curriculum for boys and another for girls. It would prescribe as little as possible for either, because it is convinced that both should be free to find and follow their tastes, and

because they desire that teachers be free to aid and guide the development of their pupils. In view of medical and other evidence, the committee urges that the pace of education in girls' schools be adjusted to the strength and opportunities for study of the average pupil. Not that it pleads for any special consideration or the establishment of a lower standard for the "weaker" sex, for it is convinced that, given the same conditions, girls can match the achievement of boys. But the conditions of health are not the same and there is much less freedom from other demands for girls. The growing tendency to organize and emphasize school activities are modern developments which stand in need of criticism and control, particularly in girls' schools. They may check what is meant to be fostered—the full and free development of individual initiative and vigor.

Games for girls occupy much of the report. As the general conscientiousness of girls extends to their sports, there is a danger that some pupils who are overconscientious and docile may exhaust themselves physically and mentally for the supposed good of the school. Due regard should be paid to the strain undergone by the girls in the ordinary normal daily routine at home and in the journey to and from school. While thinking that games should form part of the ordinary curriculum for girls, the committee is not convinced that they should be made compulsory. They favor hockey, lacrosse, tennis and ricket, but not football.

The physiologic evidence and a large part of the evidence from teachers disclosed that girls are more liable to physical and mental fatigue than boys. Most boys, especially at adolescence, have a habit of "healthy idleness," and thus can protect themselves against overpressure; whereas girls are more amenable to authority and more industrious. Therefore, the traditional arrangement by which girls' school hours are shorter than boys' is sound. On the differences of achievements, the report states that girls as a rule show equal or superior originality and capacity in English literature, history, modern languages and possibly biologic sciences, but are inferior to boys in ancient languages, especially Latin, and in mathematics and the dependent sciences.

The more important recommendations of the committee were: The school time tables should be modified to allow boys and girls more free time in which to develop their individual interests. The first school examination for girls should be about a year later than for boys. More attention should be devoted by school physicians and others to protecting girls against physical fatigue and nervous overstrain. In girls' day schools, the amount of home preparation should be reduced, as it is in some instances excessive, in view of heavy domestic duties.

#### The Dangers of the Use of Water Gas for Illumination

In a letter to the *Times*, Prof. W. A. Bone calls attention to the dangers of the prevalent use of water gas. Recently, three persons in a house were poisoned during sleep by gas which, escaping from a broken mainpipe in the roadway, percolated into a house not piped for gas. A straight coal gas contains only 7 or 8 per cent. of carbon monoxid, which in ordinary circumstances is not dangerous; but water gas, which is now frequently mixed with coal gas, contains from 42 to 45 per cent.—a highly dangerous proportion. Professor Bone calls for an inquiry into the subject of gas poisoning, which has increased of late.

#### The Medical Research Council

The Medical Research Council was appointed under the National Insurance Act. The report for the year ending September, 1922, has just been issued. The sum provided by Parliament for the year was \$650,000. A large number of highly important researches have been carried out or are



proceeding. The difficulty in experimentally investigating the diseases attributed to filtrable viruses has led to arrangements being made for an experimental study of distemper in dogs. Other researches, of which only a few can be mentioned, are on the effect of overdoses of light on the resistance of tissues to bacteria, the effects of balneotherapy on metabolism, improvement of microscopic methods, the standardization of pathologic methods, with a view to uniformity of results, the standardizing of arsphenamin compounds, the dietetic factors causing abnormal development of the thyroid, and research work in clinical medicine at various centers.

#### Great Reduction in the Mortality from Diarrhea and Enteritis

The accompanying table shows a remarkable diminution in the mortality from diarrhea and enteritis in recent years:

LONDON: MORTALITY FROM DIARRHEA AND ENTERITIS

	All Ages per Thousand Living	Under 1 Year per Thousand Births
1911.....	4.28	127
1912.....	0.66	20
1913.....	1.50	43
1914.....	1.93	59
1915.....	1.34	45
1916.....	0.78	24
1917.....	0.86	29
1918.....	0.61	23
1919.....	0.64	22
1920.....	0.42	13
1921.....	1.26	43
1922.....	0.15	5

The mortality of the last year is not only the lowest, but it has never been approached. The diminution is to be explained by improved sanitation and, above all, by the widespread instruction in disease prevention given by various health agencies. There is more sterilization of milk, more careful cleansing of bottles and feeding cups, and better personal hygiene. The breeding places of flies are being destroyed with care and enthusiasm. The change from horse-drawn vehicles to motors has led to the disappearance of stables and manure heaps.

#### The Prevention of Venereal Disease in New Zealand

Some striking recommendations are contained in the report of the committee of the board of health, appointed in New Zealand to advise as to the best means of combating and preventing venereal disease. Their legislation is far in advance of that of the mother country, but resembles that of Australia, which was described in *THE JOURNAL* some time ago. The outstanding recommendation is the adoption of what is known as the system of conditional notification embodied in the West Australia act. The cases are notified by the physician to the health department by number or symbol; the name of the patient is not sent in unless he discontinues treatment before he is free from infection, and refuses to go either to a clinic or to another physician. The names of those who conform to the regulations thus never pass beyond the physician attending them. Even when the names of those who do not are sent to the health department, in order that steps may be taken in the interest of public health, they are given only to officers, who are pledged to keep them confidential. It is also recommended that all proceedings taken under any act having reference to venereal disease should be held in private unless the defendant applies for a hearing in open court. The committee suggests that in any legislation which may be passed there shall be a provision that every physician, on finding that a patient is suffering from venereal disease in a communicable form, shall give notice to the director general of health on a prescribed blank, stating age, sex and occupation, and the nature of the disease, but omitting the patient's name and address.

The committee lays stress on the duty of self-control and also on the duty of parents in instructing and training their children. The classification and, when necessary, the segregation of mentally deficient adolescents is also recommended. Clinics should be made more available by being open continuously. Every effort should be made to insure privacy. A specially trained nurse should be in attendance at women's clinics for prompt preventive treatment of those who have exposed themselves to infection. Woman patrols should be appointed to perform in other centers the kind of work that is being carried on at Christchurch. The work, especially of an educational nature, which is being done by the social hygiene society of Christchurch, is recommended as a model. The committee is entirely opposed to the continental system of licensed brothels or a revival of the contagious disease act in any shape or form. When a recalcitrant patient refuses to be examined by the physician appointed by the director general of health, the latter should be empowered to apply for his arrest and detention in a public hospital or other place of treatment until his condition becomes noninfectious. The committee recommends further provisions for persons suffering from venereal disease who are not under medical treatment and are likely to infect others.

If the director general of health has reason to believe that any person is suffering, he may call on him to produce a medical certificate, which may be obtained free from any hospital or venereal disease clinic. If the person refuses, he may be taken before a magistrate, who may order a medical examination. Penalties, including detention in a prison hospital, should be provided for recalcitrant cases. The proceedings in all these cases are to be held in private, unless the defendant desires a public hearing. The committee recommends that before license to marry is issued, the parties sign a blank, answering certain questions as to freedom from communicable disease and from mental disease, making a sworn statement that the answers are true. They recommend the adoption of a provision of the Queensland act making venereal disease a ground for annulling a marriage contracted while one of the parties was suffering from venereal disease in an infectious stage, provided the other party was not informed of the fact; also, that it should be the duty of a physician attending a case of venereal disease, if he believes that the patient intends to marry, to warn him or her against doing so; and if he or she persists, it should be the duty of the physician to notify the case to the director general of health, whose duty it would be to inform the other party or the parents or guardian. Strengthening of the law prohibiting treatment of venereal disease by unqualified persons is recommended. While regarding these legislative measures as of great importance, the committee earnestly emphasizes the moral and social aspects of the question. With the changing social conditions, especially in large towns, it states that the home influence and training, which is the best safeguard for the young, is being lost.

#### PARIS

(From Our Regular Correspondent)

Jan. 12, 1923.

#### The League of Nations' Health Conference

The fifth session of the League of Nations Health Conference has just opened at Geneva. For the first time, Professor Nocht, of the Institute for Tropical Diseases, Hamburg, the delegate from Germany, and Dr. Semachko, public health commissioner of soviet Russia, will be present and take part in the deliberations. At this session, a representative of the United States Public Health Service will be appointed a member of the conference, and it is also planned to establish a collaboration with the international bureau at Wash-



ington. Dr. Rajchmann reported an increase of epidemics in Russia, due, to a great extent, to the recrudescence of the famine; but the appearance of a tropical type of malaria is also playing a part. Also the epidemics that were already present have spread farther.

#### High Mortality Among Wards of the State

The *Journal officiel* has published a circular letter addressed to the prefects of the departments by M. Strauss, minister of public health, in regard to the measures to be taken to check the mortality among children in ward of the state, which has of late reached an extremely high figure, the average being above 38 per cent. The main cause of this situation is the gradual disappearance of wetnurses. Ten years ago, the department of the Seine had 1,400 wetnurses, whereas now there are only 150. As additional causes, congenital debility due to syphilis, tuberculosis and constitutional inferiority may be mentioned. The minister recommends that in every department of France there be established retreats and welfare centers for prospective mothers, mothers during convalescence from childbirth, and nursing mothers who are homeless. The value of such welfare work for mothers is seen in its tendency to prevent, or at least to diminish, abandonment, and sixteen departments have already learned to appreciate the remarkable results that are secured by the establishment of *maisons maternelles*. He advises further that the number and the scope of the foundling homes be increased, that the means of transporting children in ward be improved, and that, as far as possible, wards of the state be reared in rural centers established on a similar plan to the foundations of the Oeuvre Grancher. The hospitalization of mothers should be prolonged, and societies, under private control, that endeavor to prevent the abandonment of the new-born should be encouraged. Special protection should be given to weak children from the time of their birth, and emphasis should be placed on the prophylaxis of venereal diseases.

#### The Traffic in Narcotics in 1922

The executive department of the service of judiciary research, as established by the *Sûreté générale*, which is the agency that collects information pertaining to the suppression of the illegal traffic in narcotics throughout the territory of France, has just issued an annual report of its work, for the information of the League of Nations. It appears from this report that, during the year 1922, the police services subject to the control of the *Sûreté générale* arrested or incriminated 314 persons, who were brought before the competent courts on the charge of having been engaged in the illegal sale, possession or consumption of narcotic substances. During this period, 446 different cases were examined into by the same services, and the court proceedings that followed resulted in the seizure of quantities of drugs: 51.848 kg. of opium, 1.290 kg. of hashish, 24.781 kg. of cocaine, 3.433 kg. of morphine, and 112 gm. of heroin. These toxic substances represent a mercantile value of approximately 300,000 francs.

#### Intellectual Relations with the United States

A Frenchman who is traveling at present in the United States, where he comes in contact with university and art centers, recently sent a communication to the *Temps*, to which he is an occasional contributor, in which he gives some interesting observations, especially as regards the circulation of French books in the United States. He holds that French books are not as widely used in the United States as they would be if our publishers would take the trouble to send to the American universities catalogues of books in certain special fields, such as medicine, law, sociology and history. Another group of books that would awaken

great interest in America would be books published in France on the United States or on American subjects. The American Library Association publishes every month a bulletin containing lists of new books, which is relied on by American public libraries, at least 800 in number, for basic information with respect to their purchases. The library association has expressed a willingness to list in this bulletin fifteen French books each month, on condition that a carefully selected list be prepared and copies of the fifteen books recommended be sent them. The books thus far recommended have not been selected with the necessary care, and the copies for examination have not been received regularly.

#### The Centenary of the Death of Jenner

At the meeting to be held, Jan. 23, 1923, the Academy of Medicine will commemorate the centenary of the death of Jenner. Papers and addresses on the subject of vaccination will be on the program. An exhibit of relics and various documents pertaining to the history of vaccination will be held at the academy headquarters.

#### The Influence of Environment on Height

For a number of years, Prof. E. Pittard of Geneva, together with several collaborators, has been making comparative studies on the height of the inhabitants of Switzerland. He has studied by cantons the height of men called to the colors, and has considered the possible effects of environment on variations with respect to this hereditary character. Pittard recently presented to the Société de physique et d'histoire naturelle of Geneva the results of a study made by Mlle. M. Ginsberg on the height of 30,301 recruits in the canton of Bern. The height was considered in relation to the geographic division according to districts; classification according to language, the general physical characteristics of the canton (Jura, plateau, Alps), the geologic nature of the soil inhabited, altitude, the grouping (whether urban or rural), and according to the social conditions of the persons concerned. The investigator found the average height of the men from the canton of Bern to be 1.652 meters, which is considerably above the average height of men in Switzerland as a whole (1.629 meters). From the standpoint of linguistic groups, the height ranged from 1.654 meters in the German districts to 1.661 meters in the French districts (1.657 meters in the mixed districts). The average height varies distinctly with the geologic nature of the soil. Height diminishes as altitude increases, at least up to 1,000 meters. For altitudes between 400 and 600 meters, the average height was 1.659 meters; between 600 and 800 meters, 1.649 meters; between 800 and 1,000 meters, 1.646 meters. Height increases with the density of the population: from 1 to 1,000 inhabitants, 1.636 meters; from 1,000 to 5,000 inhabitants, 1.648 meters; from 5,000 to 10,000 inhabitants, 1.654 meters; more than 10,000 inhabitants, 1.677 meters. Height varies also according to occupation or social environment. The height of agriculturists was 1.642 meters; laborers, 1.653 meters; merchants, 1.664 meters; liberal professions, 1.695 meters.

#### The Celebration at Strasbourg of the Centenary of Pasteur

The centenary of Pasteur will not be celebrated at Strasbourg until several months hence. It will be marked by: 1. The unveiling of a monument erected to the memory of Pasteur in front of the University of Strasbourg by an international subscription. 2. The establishment of a Pasteur museum intended to show the various stages in Pasteur's progress by means of a retrospective view of the works, apparatus and instruments that were created or utilized by the scientist. In this museum will be shown also the evolution of microbiology: technique, documents, anatomic preparations, apparatus and results. The scientists of the world are



invited to take part in this celebration, and are requested to send to the committee on arrangements (Comité d'organisation) any works, documents or technical apparatus that they are desirous of exhibiting to the public. 3. The inauguration of a general exposition to be called the "Exposition internationale du centenaire de Pasteur," which is intended to illustrate the effects that a knowledge of things infinitesimally small has exerted on all branches of human activity, such as theoretical and applied hygiene, science, industry, habitation, alimentation and agriculture. The address of the commissioner in charge of the exposition is: Commissariat général de l'exposition pastoriennne, Institut d'hygiène, 3, rue Kœberlé, à Strasbourg, France.

#### The Abuse of Pharmaceutic Specialties

I have mentioned in several letters the regrettable fact that pharmaceutic specialties or proprietaries are coming to be used in France to an inordinate extent. In the *Concours médical*, Dr. Damey raises an energetic protest against those specialties that are manufactured according to secret formulas. It is a curious circumstance that secret remedies are prohibited in France, but nevertheless, for fiscal reasons, a tax has been imposed on pharmaceutic specialties the formulas of which have not been published. The law tolerates, therefore, what it seems to prohibit.

Damey points out the serious objections to this tolerance. A mother calls hastily a physician to treat an infant that she fears she has poisoned. She states that, for several days, the child has not seemed well. She had suspected (often owing to the suggestions of some kind friend) that such and such a disease was the cause of the condition of the infant, and had administered such and such a remedy that her kind friend had recommended, or possibly that she had seen advertised in glowing terms in her fashion journal. As the child does not get better but appears weak and out of sorts, the mother begins to worry, becomes excited, and finally hastens to the physician and asks, as she hands the physician the bottle of medicine, "Tell me, doctor; do you think that this medicine can have made the baby sick?" The physician inspects the bottle, which is covered with a beautiful label, and reads the high sounding, semiscientific and semifantastic name of the remedy, usually a conglomeration of French, Greek and Latin, but not throwing any light on the composition of the contents.

Damey states that every day—through pamphlets, the daily papers, postal cards, blotters, and even through our professional journals—we receive announcements that certain proprietary articles have been put on the market; but, in spite of the fact that much of this "literature" is directed to physicians, it never deigns to mention the composition or the nature of the product concerned. Are we to believe, by reason of the frequency and the persistence with which these methods are employed, that there are physicians who use these products without further guarantee than the mere affirmation by the manufacturers that they constitute "the best treatment known?" Damey concludes, and with reason, it would seem, that, although the law authorizes tacitly the existence of such proprietaries in that it imposes a tax on them, it is the duty of physicians to protest and to form the resolution to prescribe nothing with which we are not sufficiently familiar to assume the responsibility. He urges that we demand that, in addressing us, manufacturers of pharmaceuticals shall treat us as scientific men and use language such as is becoming to us, instead of the vapid commercial style that now prevails.

In further support of this idea, in a letter addressed to the *Presse médicale*, several physicians of Biarritz complain that the inordinate use of proprietaries secured without a prescription has become a menace to public health and is analogous

to alcoholism. As a result, chronic diseases may pass the stage at which they are still curable, and contagious affections are allowed to develop without a physician being called in.

#### BERLIN

(From Our Regular Correspondent)

Jan. 12, 1923.

#### Undernutrition and Scurvy

The state of undernutrition existing in many countries of Europe is made apparent by the appearance of cases of scurvy. During recent months, 386 cases of scurvy, which was formerly unknown in Germany, have been reported from Prussia alone. The lack of coal has caused an increase in the diseases associated with "colds." For the first quarter of 1922 the number of deaths from pneumonia (17,785) shows a marked increase over the mortality for the first quarter of 1921 (14,549). The lack of shirts and underwear, poorer bathing facilities, and the high cost of soap, make the proper care of the body more difficult, whereby many skin diseases, especially furunculosis, are induced.

#### Coloration of Cocain and Other Toxic Alkaloids to Prevent Error and Misuse

According to the statements of Dr. W. Köhler in the *Zentralblatt für Chirurgie*, the prophylactic coloration of cocain is carried out by means of a trisulphonated and phenylated fuchsin of "water blue 2 R." A request for the general introduction of this form of protective coloration has been sent to the central public health office. Further experiments in the coloration of other alkaloids with other dyes are to be made. If all producers were compelled by an international agreement to color cocain in this manner, it would reduce considerably the extensive misuse of cocain. The cocain addict snuffs cocain up the nose in heavy doses. Cocain that has been colored blue causes a marked coloration of the nostrils. This stigmatizing mark will cause addicts to discontinue the use of cocain.

#### Psychology of Witnesses' Testimony

Weygandt, director of the Hamburg hospital for the insane, following out an idea of the psychologist W. Stern, has had a special film prepared to illustrate the psychologic value of witnesses' testimony. At a recent meeting of the Hamburg forensischpsychologische Gesellschaft, a report of which Rittershaus gives in the *Psychiatrichneurologische Wochenschrift*, a film was shown representing a scene in a tavern; a fight develops; one of the guests draws a large pocket knife and opens it, but is thrown out of the room by the other guests before he has a chance to use it. One of the guests remaining suddenly discovers that some one has taken his hat and left another in its place. This incident has nothing to do with the scene in which a knife was drawn. When the last guest has gone, there still hangs a lone silk hat on the hat rack. It belongs to no one visible in the picture. The experiment covered about twenty questions that those who assisted in the experiment had to answer after the film had been shown. Four of the participants, who endeavored to be extremely cautious and therefore answered only a fourth of the questions asked, had nevertheless 26 per cent. of the answers wrong; while sixteen participants, who answered from six to ten questions, had 43 per cent. of errors. Twenty-two participants, who answered from eleven to fifteen questions, had 36 per cent. of their answers wrong, and thirteen participants, who answered more than three fourths of the questions, had 32 per cent. of wrong answers. A series of questions as to what actually happened produced 53 per cent. of correct answers. Those most careful with their replies and who answered only a few of the questions had 48



per cent. wrong answers, whereas the keenest observers, who had answered three fourths or more questions, gave 40 per cent. wrong answers. Rittershaus discusses, among other things, also the value of children's testimony. He cites two instances in point. In one case the crucial testimony was to be given by a boy. He could not be heard as a witness, however, because, at the beginning of the hearing, he had an attack of what appeared to be hysterical convulsions. Any psychiatrist will naturally be inclined to question the credibility of this probably hysterical child. In the second case, psychopathologic factors did not play any part. It was a question as to what some children actually saw and what imagination and other factors led them to believe they saw. Rittershaus says: "The imagination of the children, stimulated by the horrors recounted in the press, and likewise doubtless by the stories they had heard their elders tell, was still further aroused by the things they had found in the gipsies' camp, and by the time they got back to town the ragged shirt, the old pasteboard box and the 'bloody knife' had metamorphosed into the mutilated body of a child."

#### Personal

Dr. Alfred Kirstein, known for his invention of autoscropy of the larynx, died recently at the age of 60. For some time past, Kirstein had been devoting himself wholly to the art of painting.

Sanitätsrat Otto Dornblüth, the nerve specialist, died in Wiesbaden, January 5, at the age of 62. He was the author of a widely used compendium on internal medicine, and also of a dictionary of clinical terms. He wrote also a compendium of psychiatry, a dietetic cook book, and numerous treatises on the treatment of nervous and mental diseases.

January 9 was the centenary of Frederick von Esmarch, the surgeon of Kiel, who was the inventor of the Esmarch bandage with which to expel the blood from the part to be operated on.

#### Marriages

HARRISON WARNER STUCKNEY, Major, M. C., U. S. Army, Fort Hancock, N. J., to Miss Cornelia Lansing of New York, December 16.

WILLIAM DULANEY ANDERSON, Chattanooga, Tenn., to Miss Rosalie Slaughter of Lynchburg, Va., December 16.

FRANCIS ERNEST LE JEUNE, New Orleans, to Miss Anna Lynn Dodds of Clarksdale, Miss., recently.

JOSEPH FREDERICK PRINZING, Denver, to Miss Gertrude Norman of Raton, N. M., December 9.

HANS O. FOUCAR, Rochester, Minn., to Miss Janet Stevens of London, Ont., Canada, December 14.

FRED MONTZ, Lowden, Iowa, to Miss Charlotte Mallart of Cedar Rapids, at Tipton, November 4.

LEHMAN WILLIAM WILLIAMS to Miss Metta Martha Harr, both of Savannah, Ga., November 22.

HOMER RAYMOND BLINCOE, New Orleans, to Miss Elizabeth Hahn of Mobile, Ala., December 30.

ROY E. SWANSON to Miss Katherine Jacobson, both of Alexandria, Minn., December 28.

ESLIE ASBURY to DR. MARY S. KNIGHT, both of Rochester, Minn., at Cincinnati, January 2.

JOSEPH C. BAIRD, Eau Claire, Wis., to Miss Amalia C. Olson of Minneapolis, December 10.

BALDWIN BORRESON, Bemidji, Minn., to Miss Alice Graves of Duluth, December 30.

JULIAN HOLT BUFF to Miss Joyce Louise White, both of Atlanta, Ga., January 4.

ERIC JULIEN, Turlock, Calif., to Miss Mabel Botham of Berkeley, December 31.

ANTON H. NERAD to Miss Florence Meisch, both of Argyle, Minn., November 30.

#### Deaths

**Robert Thaxter Edes**, Springfield, Mass.; Medical School of Harvard University, Boston, 1861; formerly professor of materia medica and clinical medicine at his alma mater, and at various times lecturer on nervous diseases at Columbian University, Washington, D. C., materia medica and therapeutics at Dartmouth Medical School, Hanover, N. H., and diseases of the kidneys at Georgetown University School of Medicine, Washington, D. C.; member of the Massachusetts Medical Society, the Association of American Physicians; Fellow of the American Academy of Arts and Sciences, and first president of the American Neurological Association; Civil War veteran; at one time physician to the Boston City Hospital, the Garfield Memorial Hospital, Washington, D. C., and the Adams Nervine Asylum, Boston; author of "Physiology and Pathology of the Sympathetic or Ganglionic Nervous System," "Therapeutics and Materia Medica," and "The Therapeutic Handbook of the United States Pharmacopoeia"; aged 84; died, January 12, from senility.

**Carlos Montezuma** ☉ Chicago; Chicago Medical College (Northwestern University Medical School), 1889; instructor of clinical medicine at his alma mater; died, January 31, on the McDowell Indian Reservation, Ariz., from pulmonary tuberculosis. Dr. Montezuma was born in Arizona in 1867 of Apache Indian parents. He served at various Indian agencies as surgeon for the Interior Department from 1889-1896. He was formerly instructor in stomach and intestinal disease at the Post-Graduate School, and instructor in medicine at the College of Physicians and Surgeons, Chicago. He was editor of the Indian magazine *Wassaja*, and author of "The Indian of Today and of Tomorrow."

**Ernest Boyen Young** ☉ Boston; Medical School of Harvard University, Boston, 1896; instructor in gynecology at his alma mater; member of the American Gynecological Society, the Obstetrical Society of Boston, the American Urological Association, the New England Branch of the American Dermatological Society; chief surgeon to the Boston City Hospital, and formerly staff member at the Massachusetts General Hospital, and the Hospital for Women and Children; served during the World War; aged 53; died, January 17, from pneumonia.

**Max Wachsmann**, Brooklyn; Albany (N. Y.) Medical College, 1901; member of the Medical Society of the State of New York; attending physician to the Nose, Throat and Ear Department of the Eastern District Dispensary and the Long Island College Hospital; aged 46; died, January 19, as the result of an attack of lethargic encephalitis, contracted three years ago.

**Oldron Aloysius Mitchell**, St. Mary, Ky.; Kentucky School of Medicine, Louisville, 1905; member of the Kentucky State Medical Association; served in the M. C., U. S. Army, during the World War; aged 39; was found dead beneath his automobile which had plunged over a 50-foot embankment near Raywick, January 12.

**Samuel Hess Heller**, Lancaster, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1899; member of the Medical Society of the State of Pennsylvania; formerly on the staff of the Lancaster General Hospital; aged 49; died, January 21, from cerebral hemorrhage.

**Theodore Clarke Miller**, Massillon, Ohio; Charity Hospital Medical College, Cleveland, 1867; Civil War veteran; formerly on the faculty of Western Reserve University School of Medicine; for forty years city health officer of Massillon; aged 80; died, January 21, from senility.

**Robert S. Stewart**, Washington, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1869; member of the Medical Society of the State of Pennsylvania; Civil War veteran; formerly on the staff of the Washington Hospital; aged 85; died, January 10, from senility.

**Albert H. Kunst**, Parkersburg, W. Va.; Starling Medical College, Cincinnati, 1868; member, and former president, of the West Virginia State Medical Association; for many years superintendent of the Weston State Hospital; aged 79; died, January 17, from heart disease.

**James W. Hill**, Hopkinsville, Ky.; Medical Department University of Louisville, Louisville, 1889; formerly superintendent of the State Institution for the Feeble-Minded, Frankfort; served during the World War; aged 53; died, January 19, from chronic nephritis.



**James Edgar Yarbrough** ♂ Erick, Okla.; University of Arkansas Medical Department, Little Rock, 1909; secretary of the Beckham County Medical Society; served in the M. C., U. S. Army, during the World War; aged 46; died in December, from heart disease.

**Embry Pryor Wilson**, Houston, Miss.; Memphis Hospital Medical College, Memphis, Tenn., 1902; member of the Mississippi State Medical Association; served in the M. C., U. S. Army, during the World War; aged 46; died, January 12, from influenza.

**Frederick J. Schug**, Tacoma, Wash.; Columbus (Ohio) Medical College, 1876; member of the Washington State Medical Association; for twelve years city health officer; surgeon, U. S. Public Health Service, since 1897; aged 68; died, January 17.

**David J. Chaffee**, Rochester, N. Y.; Cleveland-Pulte Medical College, Cleveland, 1863; Homeopathic Medical College of Pennsylvania, Philadelphia, 1867; practitioner in Rochester for more than half a century; aged 87; died, January 28, from senility.

**George Banker Schwachtgen**, Aurora, Ill.; Rush Medical College, Chicago, 1910; formerly city health commissioner; proprietor of the Lincoln Hospital; aged 38; died, January 16, from injuries received when his automobile was struck by a train.

**Wallace M. Brackett**, Independence, Iowa; Chicago Medical College, Chicago, 1876; Civil War veteran; for several years mayor of Livermore; former editor of the *Hancock County Democrat*; aged 76; died, January 11, from uremia.

**Charles E. Woodward** ♂ West Chester, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1874; formerly secretary of the city board of health and registrar of vital statistics; aged 76; died in January, from pneumonia.

**Robert Berrien Ridley, Sr.**, Atlanta, Ga.; Jefferson Medical College of Philadelphia, 1869; Civil War veteran; formerly on the staffs of the St. Joseph Infirmary and the Grady Hospital; aged 80; died, January 22, from pneumonia.

**Francis Daniel Merchant**, New York; Columbia University College of Physicians and Surgeons, New York, 1890; member of the Medical Society of the State of New York; aged 56; died, January 13, from carcinoma of the liver.

**Frank E. Seymour**, Fort Dodge, Iowa; State University of Iowa College of Medicine, Iowa City, 1879; president of the Fort Dodge National Bank; aged 70; died, January 14, in Long Beach, Calif., from cerebral hemorrhage.

**Francis B. Loring**, Washington, D. C.; Medical School of Harvard University, Boston, 1874; member of the Medical Society of District of Columbia and of the American Ophthalmological Society; aged 72; died, January 14.

**Frank Wolf Wood**, Portland, Ore.; Rush Medical College, Chicago, 1897; member of the Oregon State Medical Association; aged 50; for many years secretary of the state board of medical examiners; died, January 16.

**Daniel Eugene Eagle**, Statesville, N. C.; Johns Hopkins University Medical Department, Baltimore, 1922; aged 26; intern at Johns Hopkins Hospital, Baltimore, where he died, January 22, from abscess of the liver.

**Charles Inches**, Scribner, Neb.; New York University Medical College, New York, 1868; member, and former president of the Nebraska State Medical Association; aged 78; died, January 11, from heart disease.

**Geronimo Carreras Delgado** ♂ San Juan, Porto Rico; University of Seville, Spain, 1880; president of the board of medical examiners of Porto Rico; aged 67; died, January 21, from cerebral hemorrhage.

**John Henry Musser**, Lampeter, Pa.; Jefferson Medical College of Philadelphia, 1866; member of the Medical Society of the State of Pennsylvania; aged 77; died, January 19, from cerebral hemorrhage.

**Harry Wright McKee**, New Castle, Pa.; Jefferson Medical College of Philadelphia, 1887; member of the Medical Society of the State of Pennsylvania; aged 60; died, January 13, from heart disease.

**Clyde C. Wallace**, Cruger, Miss.; University of Tennessee College of Medicine, Memphis, 1912; died, January 15, from injuries sustained when the automobile in which he was driving overturned.

**Charles M. Morrill** ♂ Havana, Ill.; Eclectic Medical Institute, Cincinnati, 1876; aged 71; died, January 19, from the effects of burns received when his clothes ignited from sparks from his pipe.

**William M. Craig**, Petersburg, Ill.; Missouri Medical College, St. Louis, 1887; member of the Illinois State Medical Society; aged 65; died, January 19, from pneumonia and heart disease.

**Robert P. Muellenbach**, New York; New York University Medical College, 1887; member of the Medical Society of the State of New York; aged 72; died, January 14, from cerebral hemorrhage.

**Elton Mayrant Johnson** ♂ Portland, Ore.; State University of Iowa College of Medicine, Iowa City, 1897; aged 52; died suddenly, January 18, at the Emanuel Hospital, from cerebral hemorrhage.

**Louis Bush Simpson**, Fairfield, Ohio; Ohio Medical University, Columbus, 1898; member of the Ohio State Medical Association; aged 46; died, January 17, from pleuropneumonia.

**Benjamin Matthias Bartilson**, Braddock, Pa.; Jefferson Medical College of Philadelphia, 1893; on the staff of the Braddock General Hospital, where he died, January 18, aged 57.

**Charles Henry Frederick**, Lorain, Ohio; Western Reserve University School of Medicine, Cleveland, 1891; member of the Ohio State Medical Association; aged 54; died, January 22.

**Ban S. Brown**, Kerens, Texas; University of Texas Department of Medicine, Galveston, Texas, 1900; member of the State Medical Association of Texas; aged 53; died, January 13.

**Zaphney Orto**, Pine Bluff, Ark.; Miami Medical College, Cincinnati, 1872; president of the Simmons National Bank; veteran of the Spanish-American War; aged 80; died, January 22.

**Irving Sylvester Fogg**, Norwood, Mass.; Medical School of Harvard University, Boston, 1877; member of the Massachusetts Medical Society; aged 70; died, December 29, from senility.

**Harry A. Stout** ♂ Wenonah, N. J.; Jefferson Medical College of Philadelphia, 1886; member of the state board of medical examiners; aged 58; died, January 14, from heart disease.

**Thomas A. Roy** ♂ Mansura, La.; Louisville Medical College, Louisville, Ky., 1890; member of the state board of health; aged 56; died, January 24, from cerebral hemorrhage.

**W. R. Owen**, Los Angeles; Homeopathic Medical College of Missouri, St. Louis, 1877; former president Colorado State Board of Medical Examiners; aged 78; died, January 14.

**James H. Wyson**, Cleveland; Louisville Medical College, Louisville, Ky., 1880; Tulane University of Louisiana School of Medicine, New Orleans, 1886; aged 73; died, January 15.

**Thomas T. Broyles**, Jonesboro, Tenn.; University of Nashville Medical Department, Nashville, 1888; aged 81; died, December 18, at Embreeville, from carcinoma of the face.

**Benjamin F. Few**, Greer, S. C.; Medical College of the State of South Carolina, Charleston, 1861; Civil War veteran; also a druggist; aged 93; died, January 21, from senility.

**William Pinkney Atchley**, Knoxville, Tenn.; Tennessee Medical College, Knoxville, 1897; member of the Tennessee State Medical Association; aged 53; died, January 12.

**Joseph A. Belanger** ♂ Grosse Point, Mich.; University of Montreal Faculty of Medicine, Montreal, Que., Canada, 1895; aged 51; died suddenly, January 13, at Paris, France.

**Charles N. Nolan**, Nashville, Ind.; Pulte Medical College, Cincinnati, 1884; member of the Indiana State Medical Association; aged 63; died, January 22, from heart disease.

**Edward Clarence Traver**, Upton, Mass.; University of Vermont College of Medicine, Burlington, Vt., 1888; aged 56; died, December 23, from acute dilatation of the heart.

**Robert A. Tate**, Bolivar, Tenn.; Medical College of the State of South Carolina, Charleston, 1869; Confederate veteran; aged 78; died, January 12, from senility.

**Charles McRae Morgan**, Tucker, Ark.; College of Physicians and Surgeons, Chicago, 1903; formerly a medical missionary in Belgium; aged 50; died, January 14.

**Joseph Ellwood Blanck**, Green Lane, Pa.; Jefferson Medical College of Philadelphia, 1886; formerly member of the state legislature; aged 59; died, January 19.

**Charles Pierce Bean**, Boston; Bellevue Hospital Medical College, New York, 1891; member of the Massachusetts Medical Society; aged 58; died, January 12.



Horace Benjamin Coblentz, Washington, D. C.; University of Maryland School of Medicine, Baltimore, 1896; aged 51; died, January 24, from heart disease.

Waverly McGee Hume, Coalgate, Okla.; Medical Department University of Louisville, Louisville, Ky., 1884; aged 59; died, January 20, at Sherman, Texas.

Simon Willard Oley, Danbury, Conn.; New York Homeopathic Medical College, New York, 1886; aged 68; was found dead from heart disease, January 17.

George W. McKown, Osceola, Texas; Vanderbilt University Medical Department, Nashville, Tenn., 1883; aged 64; was shot and killed, January 11.

Edward W. Jones, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1890; aged 60; died, January 27, from heart disease.

William F. Hazelton, Enid, Okla.; Eclectic Medical Institute, Cincinnati, 1873; aged 79; was found dead, December 31, from cerebral hemorrhage.

Joseph C. Egbert, Wayne, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1880; aged 69; died, January 17, from heart disease.

John L. Sowards, Greenup, Ky.; Kentucky School of Medicine, Louisville, 1891; aged 54; died, November 28, from chronic interstitial nephritis.

Wellington H. Willcox ⊕ Columbus, Ohio; Ohio Medical University, Columbus, 1897; aged 52; died suddenly, January 18, from chronic nephritis.

George Humphrey Tichenor, Sr., New Orleans (licensed, years of practice); Civil War veteran; aged 85; died, January 14, from heart disease.

Godfrey M. Crowell, Hammonton, N. J.; Jefferson Medical College of Philadelphia, 1882; aged 66; died, January 26, from chronic nephritis.

Ernest Everett Lowry, Westerville, Ohio; Starling Medical College, Columbus, 1896; aged 55; died, January 17, from cerebral hemorrhage.

John Byron Sweet, Jewett City, Conn. (licensed, Connecticut, 1893); formerly member of the state legislature; aged 68, died, January 21, from beriberi.

Frederick L. Nisbet ⊕ Meadville, Pa.; New York University Medical College, New York, 1887; aged 60; died, January 12, from erysipelas.

William Bennett Turnbow, Pittsville, Mo.; Eclectic Medical Institute, Cincinnati, 1891; aged 60; died, November 8, from heart disease.

James J. Wingard ⊕ Lexington, S. C.; University of Virginia Department of Medicine, Charlottesville, 1895; aged 58; died, December 4.

John V. Albert, Pine Grove, Pa.; Jefferson Medical College of Philadelphia, 1870; aged 74; died, January 23, from heart disease.

Robert W. Bucke, Windsor, Ont., Canada; Western University Faculty of Medicine, London, 1905; aged 41; died, January 15.

Elizabeth H. Cassel, Berkeley, Calif.; Woman's Medical College, Chicago, 1883; aged 58; died, January 13, from heart disease.

Asa Adgate Arthur, Roxbury, Mass.; Bellevue Hospital Medical College, New York, 1865; aged 79; died, December 25.

William E. Duncan, Chicago; Rush Medical College, Chicago, 1881; aged 70; died, January 29, from pneumonia.

Frank Jesse Thorp, Rocky Mount, N. C.; Bellevue Hospital Medical College, New York, 1874; aged 70; died, January 13.

Sarah Helen Fitzbutler, Chicago; Louisville National Medical College, Louisville, Ky., 1892; aged 60; died, January 12.

William H. Blair, Erie, Pa.; Western Reserve University School of Medicine, Cleveland, 1873; aged 78; died, January 7.

Philip Angus Fox ⊕ Milwaukee; Rush Medical College, Chicago, 1902; aged 43; died, January 30, from pneumonia.

E. James Blair, Los Angeles; Kentucky School of Medicine, Louisville, 1882; aged 63; died, January 9, from senility.

Edward Edwards ⊕ Delphos, Ohio; Jefferson Medical College of Philadelphia, 1894; aged 63; died, January 21.

Correction.—Dr. W. A. Jones, formerly of Hamilton, Canada, writes to state that the obituary in the *Canadian Practitioner* for January from which a notice in THE JOURNAL was copied, was incorrect, since he is still among the living.

## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

### A PATENTED CONSUMPTION CURE

#### The United States Patent Office Again Demonstrates Its Ignorance of Modern Medicine

When the United States Patent Office issued a patent for a device to attach to the business end of the domestic hen, in order to mark with some identifying character, each egg as it is laid, it added to the gaiety of nations, but possibly did little harm. When it issued a patent for a special tape-worm trap that was to be baited and let down into the intestinal depths of the human economy, it demonstrated its conception of therapeutics. No, this is not written facetiously. The patents in question were actually issued; the former, No. 970,074, was granted Sept. 13, 1910, while the latter, No. 11,942, was issued Nov. 14, 1854.

#### SOME FREAK PATENTS

In February, 1796, the United States granted a patent to one Elisha Perkins for certain "metallic points to remove pain." Perkins' Tractors had their day; they flourished bravely on a wave of lay and medical credulity but in a few years were relegated by public indifference to the limbo of forgotten fads. In 1897 the United States Patent Office issued a patent (No. 587,237) to one Hercules Sanche for a preposterous piece of charlatanism that later became known as the Oxydonor. This piece of nickel-plated gas-pipe, which had no more therapeutic value than an empty tomato tin, had a

**UNITED STATES PATENT OFFICE.**

EVAGHORAS SERGHISON, OF SAN FRANCISCO, CALIFORNIA.

MEDICINAL COMPOUND.

1,368,974.      Specification of Letters Patent.      Patented Feb. 15, 1921.  
No Drawing.      Application filed April 2, 1919.      Serial No. 287,237.

To all whom it may concern:

Be it known that I, EVAGHORAS SERGHISON, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Medicinal Compounds, of which the following is a specification.

My invention relates to a remedy or medicinal composition for use in the treatment of tuberculosis.

The aim of the invention is of course, the provision of a remedy which will prove effective in the treatment of tuberculosis. In actual use I have found that this remedy is most beneficial and far superior to any remedy for tuberculosis known to me. This result is due to the combination of the several ingredients of the compound as hereinafter stated; each ingredient separately having been tried or tested for the treatment of tuberculosis, and found ineffective to produce the desired result.

The remedy comprises the following ingredients in the proportions stated:

Pure olive oil.....	1 gallon.
Squill root.....	3 pounds.
Bitter almonds.....	14 pounds.
Nettle (the plant except the root).....	14 pounds.
Red poppy flower (petals).....	1 pound.

In preparing the remedy the several ingredients are placed in a suitable container and thoroughly mingled by shaking or agitation. The container is then corked or closed in an air-tight manner and placed in water contained in a receptacle. The receptacle is placed adjacent a stove so that the heat therefrom will warm the water and accordingly warm the mixture gradually. The mixture is left thus standing for a considerable period of time. In actual use I have found that seventy-two hours is about the proper time. At the expiration of this period the mixture is thoroughly mixed and squeezed and thereupon filtered; the liquid produced being used as the remedy.

In actual use I have found that a patient should be given about three tablespoonfuls a day, and the remedy or medicine should be taken in a lukewarm condition.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is:—

1. A medicinal composition for the treatment of tuberculosis, consisting of olive oil, squill root, bitter almonds, nettle plant and poppy petals, as described and for the purpose specified.
2. A medicinal composition consisting of olive oil, one gallon; squill root, three pounds; bitter almonds, one and one fourth pounds; nettle plant, (except the root), one and one-half pounds, and poppy petals, one pound; as described and for the purpose specified.
3. A medicinal composition comprising substantially equal proportions of bitter almonds and nettle and poppy flower and a larger proportion of squill root, all in a menstruum of olive oil.

In testimony whereof I affix my signature in presence of two witnesses.

EVAGHORAS SERGHISON.  
Witnesses:  
HAROLD CHANCERY,  
CHARLES N. GILLOTT.

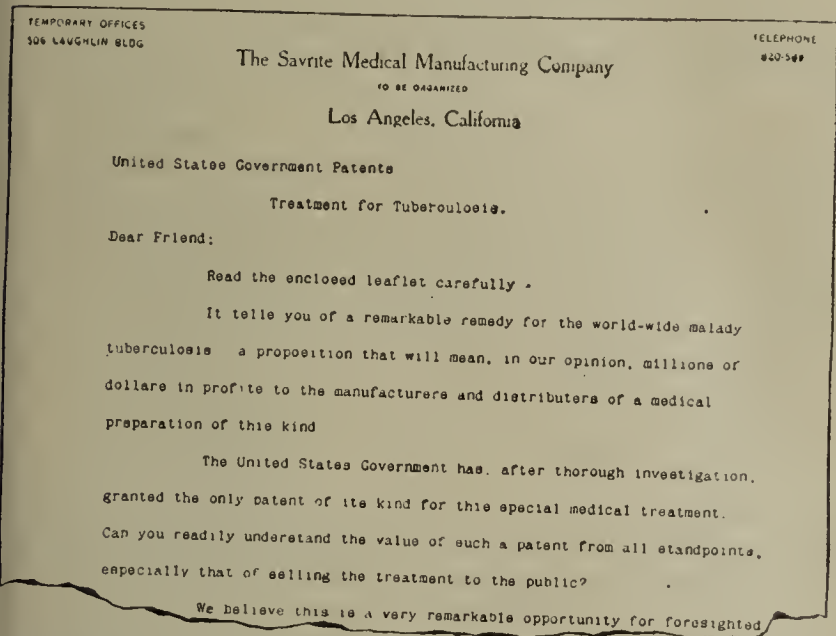
Photographic reproduction (reduced) of the patent specification for Savrite, the alleged consumption cure.

world-wide sale among the gullible until 1915 when another branch of the United States Government declared the thing such an utter fraud that its transportation through the United States mails was barred. In 1900, the United States Patent Office granted a patent (No. 647,101) on a similar device (later called the Oxygenor) which also brought in easy money to its exploiters for some years until the fraud order department of the United States Post Office put it out of business.

In 1913 United States Patent No. 1,081,069 was granted on a preparation that, according to the specifications, would



confer immunity against diphtheria, pneumonia, scarlet fever, cerebrospinal meningitis, syphilis, goiter, tuberculosis and several other conditions. In 1917, U. S. Patent No. 1,212,888 was issued for a method of flavoring Epsom salts! If one wanted to go into the subject more thoroughly it would be easy to show that the Patent Office has issued patents for many preparations to be used in medicine for which there has been not the slightest scientific justification.



Photographic reproduction (reduced) of the opening paragraphs of a form letter sent out by the Savrite Medical Manufacturing Company in an attempt to get capital to float the "consumption cure." Note the way in which the United States patent is capitalized.

#### PATENTING A "CONSUMPTION CURE"

The most recent and flagrant example of lack of intelligent patent law administration is to be found in a case recently brought to the attention of THE JOURNAL. The Savrite Medical Manufacturing Company, Los Angeles, California, has recently circularized the public in an attempt to get money to manufacture "Savrite," an alleged cure for tuberculosis. The talking point of those who are soliciting subscriptions for this purpose—but let them speak for themselves:

"The United States Government has issued the patent on this compound ONLY after thorough investigation, and it is the only patent ever granted in the United States for a preparation in liquid form, ESPECIALLY as a remedy for Tuberculosis."

According to the prospectus, the preparation was "invented" by one Serghison, an alleged sufferer from tuberculosis and one who, it is needless to say, had been "given up entirely by prominent physicians as incurable" but who took his own remedy and "was completely cured of the disease." To quote:

"The inventor of 'Savrite' has discovered what he has proven to be a specific remedy for Tuberculosis. To countless thousands this 'Medical Marvel' will prove a veritable Godsend once its wonderful work becomes known.

"The inventor has tried and tested the Remedy in many cases.  
"HE HAS NEVER YET HAD A FAILURE."

We learn, too, that an "eminent physician" stands sponsor for the preparation. Thus:

"The eminent physician, William Kingston Vance, M.D., has used the remedy successfully. This physician has given a sworn affidavit as proof positive that the Serghison treatment for tuberculosis is a success and has curative effects."

The only William Kingston Vance whose name appears in our records lives at Fresno, Calif. He was born in 1852 and was graduated by Bennett College of Eclectic Medicine and Surgery in 1887. His "eminence" has, evidently, been conferred by the Savrite Medical Mfg. Co., as a rather careful search of medical literature and other sources of information fails to disclose that he has any other claim to note. The only record in our files regarding this man occurs in clippings from Fresno and other California newspapers of last November alleging that the federal authorities charged William Kingston Vance with the illegal prescribing of liquor.

The patent for Savrite is No. 1,368,974 issued Feb. 15, 1921, to one Evaghoras Serghison of San Francisco. The "invention," according to the patent specifications, lies in providing "a remedy which will prove effective in the treatment of tuberculosis" and the patentee considers the remedy "most beneficial and far superior to any remedy for tuberculosis known to me."

What is this "Medical Marvel" that produces cures in tuberculosis and has "never yet had a failure"? Let the specifications issued by the United States Patent Office, answer:

"Pure olive oil.....	1 gallon
"Squill root .....	3 pounds
"Bitter almonds .....	1 1/4 pounds
"Nettle (the plant except the root).....	1 1/2 pounds
"Red poppy flower (petals).....	1 pound

These various ingredients are to be mixed, put into a closed container, gradually warmed and left standing for about seventy-two hours. At the end of this time the mixture is squeezed, mixed and filtered; the filtrate comprises the "cure"! The dose, we are told, is "about three tablespoonfuls a day" to be taken in a lukewarm condition.

#### QUESTIONS FOR THE PATENT OFFICE

On Jan. 6, 1923, THE JOURNAL submitted the following questions to the Commissioner of Patents relative to the granting of this particular patent:

1. What evidence was submitted to the Patent Office of the therapeutic usefulness of this alleged "new and useful Improvements in Medicinal Compounds"?

2. Which one of the forty-odd genera or five hundred species of "nettle" is referred to in this patent?

3. Does the Patent Office consider that the specifications in this patent are sufficiently definite and specific to make it possible on the expiration of the patent for the public to duplicate the product described by the patentee?

4. Was this formula for an alleged effective treatment of tuberculosis submitted to any department of the government that might be expected to have some knowledge of therapeutics?

5. What consideration was the public health given in this matter?

The Commissioner was told that THE JOURNAL would appreciate hearing from him on these points. This was more than a month ago. At the time of going to press (February 7) no reply has been received.

## Correspondence

### "THE CARE AND FEEDING OF INFANTS"

To the Editor:—The prevention of the initial loss of weight during the first week of extra-uterine life by the administration of sugar solution has been mentioned by the writer of the valuable series of papers on the care and feeding of infants (THE JOURNAL, January 13, p. 109), and credited to Schick. Dr. Charles Herrman, in a later issue (January 27, p. 273), claims priority, showing that in 1915 he published a paper in which he reported that the initial loss of weight may be prevented by the administration of a 10 per cent. solution of lactose every three hours. With a view of saving valuable space from further priority claims, may I intrude with the following facts drawn from ethnology, a field far removed from pediatrics, yet offering at times sound suggestions to those engaged in the care of infants, to the same extent as the Peruvian Indians offered a remedy to malarial patients, and an old woman in Shropshire, England, suggested to Withering digitalis, the best remedy we have for heart failure.

The administration of sugar or of substances containing sugar to infants during the first few days of extra-uterine



life is very widespread among primitive, barbarous and civilized peoples. Many primitive tribes do not permit their new-born infants to take the breast for from two to five days after birth, and feed them with substances containing sugar, such as honey, coconut milk, fruit juices and sugar cane. This is the case among the natives of Samoa, who feed their new-born coconut or sugar cane, which is first well masticated by the mother and then directly transmitted to the infant's mouth (Turner, Samoa, p. 81). Likewise, the natives of Vitis in East Africa give their new-born the juice of sugar cane during the first three days of life. The inhabitants of the Fiji archipelago, too, have the same custom, according to Ploss (Das Kind, Ed. 3, 1911, 1:458), who quotes many authorities as to numerous other primitive races who feed their new-born with honey, sugar, and the like.

According to Susruta (Susruta Ayurvedas, Ed. Hessler 2:43), the new-born infant in ancient India was not given the breast, but was made to take honey, butter and various plants containing sugar for three or four days. Ploss also found that honey was given by ancient Aryan tribes in India to their new-born infants. The Romans, too, thus fed their infants during the first week of life. Soranus of Ephesus, a Greek physician who practiced in Rome during the second century A. D., and who wrote a noteworthy treatise on the care and feeding of infants, insisted that it is best to place the new-born at the mother's breast, and that the administration of sweets, particularly honey, is harmful; which goes to show that this custom was prevalent in ancient Rome. Many writers have mentioned that the Persians have been in the habit of giving new-born babies honey over a period of several days.

Among the inhabitants of eastern Europe today the administration of sugar solution to new-born infants during the first week is routine. This can be seen among the Slavonians of southeastern Europe, and the Hungarians, Serbians, Letts, Esthonians, Poles and Russians. The immigrants in this country derived from these regions of Europe have been giving sugar solution to their new-born, and they say that it is best for the nutrition of their babies. They do it because their ancestors have found it useful for generations.

MAURICE FISHBERG, M.D., New York.

### "INTESTINAL WORMS AND APPENDICITIS"

To the Editor:—In the editorial, January 27, on "Intestinal Worms and Appendicitis," this statement occurs: "It has been objected that very few of the thousands of appendixes removed are reported to contain parasites." F. K. Noack is quoted as having found nine appendixes out of fifteen infested; the work was evidently done on European patients. It may not be amiss to supplement the editorial with the following note: I recently dissected ninety-six appendixes removed at operation with the express purpose of obtaining some definite percentage figures as to parasitic infestation of the organ. Four of the ninety-six, or 4.16 per cent., harbored *Oxyuris vermicularis*. The infestation varied widely. The most lightly infested appendix had one large adult female; the most heavily infested had twenty-five worms—larvae, adult males and females. Histologically, the organs showed an acute or subacute inflammation, with many polymorphonuclear leukocytes and a few to numerous eosinophils. No other species of worms were found. While it was impossible to obtain histories, all of these were presumably from Minnesota. Incidentally, only one appendix showed a foreign body (other than soft fecal matter). In this case the organ contained two raspberry seeds.

L. N. GARLOUGH, St. Paul.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### TREATMENT OF SCABIES

To the Editor:—What is considered the best, quickest and most efficient treatment for scabies? Please omit my name.

R. A. L., Illinois.

ANSWER.—Various radical methods for the rapid cure of scabies have been suggested, but their value is questionable, and certainly they are not to be recommended for general use. The treatment for scabies as outlined in any standard textbook of dermatology gives one a reliable and efficient method of treatment. A suitable prescription for use consists of:

	Gm. or C.c.	
Precipitated sulphur		
Balsam of Peru		
Soft soap, U. S. P. ....	āā 2	3 ss
Zinc oxid		
Prepared calamine .....	āā 2	5 gr. xl
Petrolatum .....	ad 30	3 i

The strength of the active drugs contained can be varied to suit the requirements of the individual case, being reduced for the treatment of children, or increased when necessary.

One thing that frequently complicates the treatment of scabies is the development of a sulphur dermatitis. Failure to recognize this complication often leads to the institution of more vigorous treatment, with unsatisfying results. When such dermatitis develops, the striking nocturnal character of the itching is usually lost. The eruption present consists of diffuse patches of dermatitis developing in sites not particularly involved by the scabies itself. With proper recognition of this complication, treatment of scabies is usually eminently satisfactory if conducted along the lines indicated in the dermatologic textbooks.

### ARTICLES ON GRANULOMA INGUINALE

To the Editor:—I would be very glad to have a list of leading original articles in English on granuloma inguinale.

C. C. WILEY, M.D., Birmingham, Ala.

#### ANSWER.—

- Ross, C. F.: Granuloma Inguinale, *Virginia M. Month.* 48: 579 (Jan.) 1922.  
 Morrissey, P. G.: Granuloma Inguinale, *J. Tennessee M. A.* 15: 105 (June) 1922.  
 Parounagian, M. B., and Goodman, Herman: Ulcerating Granuloma (Granuloma Inguinale): Report of a Rare Example, *Arch. Dermat. & Syph.* 5: 597 (May) 1922.  
 Randall, A.; Small, J. C., and Belk, W. P.: Granuloma Inguinale, *Surg., Gynec. & Obst.* 34: 717 (June) 1922.  
 Beeson, B. B.: Granuloma Inguinale with Lesion on Lower Lip, *Arch. Dermat. & Syph.* 6: 342 (Sept.) 1922.  
 Goodman, Herman: Ulcerating Granuloma of Pudenda, *Arch. Dermat. & Syph.* 1: 151 (Feb.) 1920; Ulcerating Granuloma (Granuloma Inguinale), *THE JOURNAL*, Sept. 2, 1922, p. 815.  
 Aragão, H. de B.: Granuloma Venereum, *New Orleans M. & S. J.* 70: 369 (Oct.) 1917.  
 Pardo, V.: Ulcerating Granuloma of Pudenda, *J. Cutan. Dis.* 36: 206 (April) 1918.  
 Campbell, M. F.: Granuloma Inguinale, *THE JOURNAL*, March 5, 1921, p. 648.  
 Lynch, K. M.: Granuloma Inguinale, *THE JOURNAL*, Sept. 17, 1921, p. 925.  
 Symmers, Douglas, and Frost, A. C.: Granuloma Inguinale in the United States, *THE JOURNAL*, May 8, 1920, p. 1304.  
 Walker, E. L.: Etiology of Granuloma Inguinale, *J. M. Res.* 37: 427 (Jan.) 1918.  
 Friedlander, D.: Granuloma Inguinale Tropicum, *California State J. Med.*, April, 1913.  
 Guidon, J.: Granuloma Inguinale Tropicum: Report of Three Cases, *J. Cutan. Dis.*, April, 1913.

### DEFINITION OF MAJOR OPERATION

Supplementary to the reply published January 20, the medical practice law for Ohio, Section 1288, as amended in 1917, thus defines major surgery:

Neither shall the certificate permit the holder to perform major surgery, which is hereby declared to be all operative procedures requiring the use of the knife or other surgical instruments for the opening of any natural cavity of the body or the amputation of any member or part of the body. Such certificates may be refused, revoked or suspended as in the case of certificates to physicians and surgeons.



## Medical Education, Registration and Hospital Service

### COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vigne, Juneau.  
KANSAS: Topeka, Feb. 13. Sec., Dr. Albert S. Ross, Sabetha.  
NATIONAL BOARD OF MEDICAL EXAMINERS: Written examination in Class A medical schools. Part I and II, February 12-14 and February 15-16. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for the February examination must be sent in by January 1.  
MAINE: Portland, March 13-14. Act. Sec., Dr. Adam P. Leighton, 192 State St., Portland.  
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.  
VERMONT: Burlington, Feb. 13. Sec., Dr. W. Scott Nay, Underhill.

### Hawaii October Examination

Dr. G. C. Milnor, secretary, Hawaii Board of Medical Examiners, reports the written examination held at Honolulu, Oct. 9-12, 1922. The examination covered 10 subjects and included 50 question. An average of 75 per cent. was required to pass. Of the 6 candidates examined, 5 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Georgia.....	(1914)	80	
St. Louis University School of Medicine.....	(1906)	91	
University of Pennsylvania.....	(1922)	84, 88	
Kumamota Special Medical School.....	(1915)*	75	
FAILED			
Tokyo Charity Hospital Special Medical School.....	(1916)*	62	

\* Graduation not verified.

### Nevada November Examination

Dr. Simeon L. Lee, secretary, Nevada State Board of Medical Examiners, reports the written examination held at Carson City, Nov. 6-8, 1922. The examination covered 13 subjects and included 100 questions. An average of 75 per cent. was required to pass. Eight candidates were examined, all of whom passed. Ten candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, San Francisco....	(1904)	82	
Howard University.....	(1904)	81.9	
College of Physicians and Surgeons, Keokuk.....	(1896)	83.5	
Detroit College of Medicine and Surgery.....	(1896)	78.9	
Kansas City College of Medicine and Surgery.....	(1922)	83.9	
Kansas City University of Physicians and Surgeons....	(1922)	77.7	
University and Bellevue Hospital Medical College.....	(1903)	89.7	
Nagasaki Special Medical School.....	(1922)*	84.8	

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Los Angeles....	(1917)	California	
University of California Medical School.....	(1919), (1922)	California	
Illinois Medical College.....	(1903)	Illinois	
Loyola University.....	(1919)	Idaho	
Rush Medical College.....	(1882)	California	
Medical School of Maine.....	(1908)	Maine	
Barnes Medical College.....	(1903)	Missouri	
Jefferson Medical College.....	(1891)	Penna.	
Texas Christian University.....	(1914)	Texas	

\* Graduation not verified.

### Utah November Examination

Mr. J. T. Hammond, director, Department of Registration of Utah, reports the written examination held at Salt Lake City, Nov. 23, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Four candidates were examined, all of whom passed. Five candidates were licensed by reciprocity, and one candidate received an osteopath license by reciprocity. One candidate was licensed on government credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Maryland.....	(1922)	82.7	
Creighton University.....	(1921)	77.2	
Jefferson Medical College.....	(1921)	84.8	
University of Pennsylvania.....	(1920)	84.2	

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University.....	(1921)	California	
Harvard University.....	(1920)	Ohio	
Columbia University.....	(1920, 2)	New York	
Jefferson Medical College.....	(1916)	Penna.	
Osteopath .....		Missouri	

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Michigan Medical School.....	(1910)	U. S. Navy	

## Book Notices

ANIMAL PARASITES AND HUMAN DISEASE. By Asa C. Chandler, M.S., Ph.D., Instructor in Biology, Rice Institute, Houston. Second edition. Cloth. Price, \$4.50. Pp. 572, with 254 illustrations. New York: John Wiley & Sons, Inc., 1922.

The discoveries mentioned in this outline of parasitic diseases are only a few of the more conspicuous milestones on the path of progress of modern medicine as related to animal parasites. A dry subject has been made interesting, and, at times, amusing. Chandler says, "Potton and Craig found the inside of a hat in which a kitten had slept overnight so full of flea eggs that it looked as if it had had sugar sprinkled in it from a sifter." The necessity for intravenous injections of quinin in certain cases of malaria, as against oral administration, is emphasized by saying, "Many a man has died with enough quinin in his stomach to have saved his life had it been properly given." The subject matter lends itself well to striking statements. Language is seldom more forceful than this: "According to the writer's investigations, the sausage which was the cause of a recent epidemic in Portland, Oregon, contained over 2,000,000 larvae (of trichina worms) to the pound at a very conservative estimate, and in a bit of human muscle from the diaphragm of an Italian who fell victim to the disease the number of worms was even greater." The author's choice of words is poor, however, when he says, "In 1905 Schaudinn discovered *Spirochaeta pallida*, which is believed to cause the disease." Some might infer, unless better informed, that Schaudinn's work in discovering the cause of syphilis had never been confirmed. The author does not hesitate to say, in the case of yellow fever, "The organism causing the disease was discovered by Noguchi at Guayaquil in 1918, and was found to be a spirochete-like organism closely related to, and very closely resembling the spirochete of infectious jaundice." As a matter of fact, doubt still exists concerning the cause of yellow fever, but none whatever concerning the cause of syphilis. The illustrations are almost all pen and ink drawings by the author from specimens or from illustrations of other authors, and are well adapted to the text.

CLINICAL AND OPERATIVE GYNÆCOLOGY. By J. M. Munro Kerr, Professor of Obstetrics and Gynecology, Glasgow University (Muirhead Chair). Cloth. Price, \$15. Pp. 832, with illustrations. New York: Oxford University Press, 1922.

It is rare to take up a book wherein one agrees with so much and dissents from so little. Kerr presents the subject of gynecology in a clear, well drawn and comprehensive picture. He shows the anatomy, the physiology and the pathology adequately in the foreground, and then with coherent thought and lucid expression he opens up the perspective in an orderly and methodical progression. The clarity of the picture is greatly enhanced by the occasional summaries, the frequent cross references, and especially by the cases taken from the author's experience wherein success and failure find equal representation and emphasis. The volume is just as desirable for the student and practitioner as for the specialist; but the specialist who combines gynecology with obstetrics will find it invaluable. The interdependence of the two arts is everywhere recognized and accentuated. It is refreshing to meet the honest statement that an entire absence of lacerations will be found in no more than 15 per cent. of primiparas, as well as the opinion, so slow to win credence, that salpingitis arises from gonorrheal and puerperal infections in the proportion of about 2 to 3, respectively. The tendency has been to give about 70 per cent. of primiparas an intact introitus, and to regard virtually all tubal infections as gonorrheal. We are delighted also to have modern authority in support of more conservative treatment of retropositions. In these days of furious knife-whetting it is a novel comfort to encounter an eminent technician who is willing to try at first such old, undramatic, but none the less valuable agents as pessaries. Fabre himself could not show a more scientific approach to his problem, than Kerr. Thorough asepsis is inculcated and insisted on, not only for operative interferences but also for vaginal examinations.



The latter injunction ought to be unnecessary; but who of us has not shuddered with disgust as an intern or a practitioner begins to paw over a clean woman with his hands unwashed? The maneuver not only is a violation of surgical laws and a repellent ordeal for the patient, but it is a serious reflection on the rearing, refinement and training of the examiner. It may seem invidious in so large and so excellent an accomplishment to mention technical activities which differ from ours. The wonder is that the occasions are so few. We wish the author had made it plainer that he shaves the vulva in his operative preparations. We almost fear that he omits this invaluable procedure at times. His use of the intra-uterine douche in saprophytic and septic conditions of the uterus is at variance with the custom here. Practically all disturbance of the endometrium has been abandoned except in cases in which the presence of a putrid remnant in the cavity is well assured. Hysterectomy for acute peritonitis also is never done for the reason that the operation can rarely be undertaken before the septic agents have passed the walls of the uterus and entered regions inaccessible to the knife. In puerperal cases, as the author very well shows, the bacteria spread along the lymphatics rather than by contiguity, and therefore enter the peritoneal cavity (hence the peritonitis) before the infection is definitely recognized. We must question, too, the author's faith in superfetation. The chapters on venereal diseases, nervous disorders, the development of the reproductive organs, anesthesia and the technic of transfusion have been done most acceptably by associates of the author. These valuable and pertinent contributions could not well be spared. The illustrations of the operative maneuvers are unusually welcome in their clearness and comprehensibility. The veriest tyro could scarcely go astray in the presence of such fine and elaborately detailed charts. The author's opinions have the definition which come from the shrewd interpretation of his abundant material. The book is printed in the best English manner; it is large, but complete; there is no excess. The style is unusually simple and clear, and over it all, text and plan, comment and illustration, is felt the wide culture, the scholarly background, the trained mind and the dominant personality of its author.

**DIATHERMIE ET DIATHERMOTHERAPIE.** Par le Dr. H. Bordier, Professeur Agrégé à la Faculté de Médecine de Lyon. Préfacé de M. Le Professeur Bergonié. Correspondant de L'Institut (Académie des Sciences). Paper. Price, 30 francs. Pp. 481, with 137 illustrations. Paris: Librairie J. B. Baillière et Fils, 1922.

This publication evidently originated in the demand for a textbook on diathermy in the French language. The theoretical part seems to contain a superabundance of electrotechnical details and formulas. Of value for the appreciation of electrocoagulation is its comparison with the results gleaned by the actual cautery, and the demonstration of the technical superiority of this method over the Paquelin cautery and the galvanocautery. To the surgical use of electrocoagulation, considerable space is devoted; the different electrodes are shown in pictures, and the administration is discussed according to the various parts of the anatomy and the nature of the pathologic changes. This is also true of the form of discussion of the application of the so-called medical diathermy, the raising of the temperature of the structure of the body without transgressing the physiologic limit. The illustrations do not come up to the standard laid down by American medical textbooks and periodicals.

**INNERE SEKRETION.** Ihre physiologischen Grundlagen und ihre Bedeutung für die Pathologie. Band I. Von Prof. Dr. Artur Biedl, Vorstand des Institutes für allgemeine und experim. Pathologie und der propädeutischen Klinik an der deutschen Universität in Prag. Fourth edition. Band III: Literatur. Paper. Price, 540 marks, each. Berlin: Urban & Schwarzenberg, 1922.

The war and its sequels has delayed the appearance of the fourth edition of this standard work, and we have as yet only the first part of the first volume. Of this, a considerable portion is given over to general considerations, especially to methods of investigation. Only the parathyroid system receives detailed consideration, but the exhaustive character of the work is shown by the fact that more than 200 pages are given to these structures. No marked changes from the previous editions of the work are to be noted. It is the most painstaking, exact compilation of existing litera-

ture on the ductless glands that we have, and is an indispensable source of information to any one studying this field. Probably it would be more useful, and certainly it would be more interesting, if the author's own convictions were more clearly and succinctly indicated. Despite the obstacles to international communication that have existed for several years, non-Teutonic literature has been considered, and all but the most recent American work seems to have been discussed. Among works on the organs of internal secretions, Biedl's handbook is noteworthy for its unemotional objectivity and scientific soundness; speculation is absent, and there is little encouragement for the practitioners of what Marine has aptly termed "endocrinology."

Volume III is a bibliography of the subject of internal secretions, and comprises 480 pages. Although it makes no pretense of being complete, it does list most of the important publications on the subject during the last fifty years.

**BACTERIOLOGIC STUDIES.** I. Review of Recent Work on Pneumococci. By A. Eastwood, M.D. II. Types of Pneumococci. By F. Griffith, M.B. III. Serological Differences Amongst Pneumococci. By A. Eastwood, M.D. IV. Distribution and Serological Characters of Influenza Bacilli. By W. M. Scott, M.D. Ministry of Health Reports on Public Health and Medical Subjects, No. 13. Paper. Price, 2 shillings, 6 pence net. Pp. 89. London: His Majesty's Stationery Office, 1922.

These studies comprise four papers on subjects connected with respiratory disease. 1. A review of recent work on pneumonia (eighteen pages) by Eastwood, which is primarily a survey of the question of serologic races among pneumococci. The problem of pneumococcus types is well outlined in this article. 2. A laboratory study (twenty-five pages) by Griffith of types of pneumococci obtained from cases of lobar pneumonia in man, mostly in the London area. The conclusion is reached that the American Types I, II and III are serologically distinct and occur in cases of lobar pneumonia in England in almost the same proportion as in the United States. 3. A discussion (thirty pages) by Eastwood of the significance of serologic differences among pneumococci, at the end of which the author expresses his belief that Neufeld's views about the significance of serologic differences among pneumococci ought not to be accepted as final. 4. A summary (fourteen pages) by Scott of observations on the distribution and serologic character of influenza bacilli, from which the author concludes that the serologic diversity of influenza bacilli cannot be used as an argument either in favor of or against their etiologic relationship to influenza. Although the observations reported are not very novel and the critical discussions not remarkably illuminating, the paper will be found useful by those interested in the investigation of respiratory disease.

**LECTURES ON DIETETICS.** By Max Einhorn, M.D., Visiting Physician to the Lenox Hill Hospital. Cloth. Price, \$2.25 net. Pp. 244, with 8 illustrations. Philadelphia: W. B. Saunders Company, 1922.

The author presents in simple language some common sense observations on the principles of diet and on the physiology of digestion. Dr. Einhorn is an apostle of normalcy. He is against fads of all kinds, against eating fast or slowly, against vegetarianism and high meat diets, against too many meals or too few. He is for adopting the diet commonly followed by the large majority of persons with some attention to those elementary principles of nutrition that physiology has incontrovertibly proved to have a place. In addition to the diet in health, special chapters concern such diseases as diabetes and gout, in which diet is an especially important factor. Dr. Einhorn has succeeded in including a large amount of material in small compass and in an unusually readable form.

**NUTRITIONAL PHYSIOLOGY.** By Percy Goldthwait Stiles, Assistant Professor of Physiology in Harvard University. Fourth edition. Cloth. Price, \$2 net. Pp. 300, with 22 illustrations. Philadelphia: W. B. Saunders Company, 1922.

In this work the author presents an account of the processes of digestion, with special consideration of the lessons learned by the war and by studies carried out in nutritional research in many institutions. The book is exceedingly well written; it has a social as well as a scientific point of view, and it should be of interest to the lay as well as to the medical reader.



## Miscellany

### EDWARD JENNER: 1749-1823

Edward Jenner, who died a hundred years ago, will ever be remembered as the conqueror of smallpox. Born in 1749 at Berkeley, Gloucestershire, England, the son of a minister, he decided at the age of 13 to study medicine, and was apprenticed by his father to the Drs. Ludlow at Sodbury, with whom he remained six years. It was during his apprenticeship that a patient said when smallpox was mentioned, "I cannot take it, for I have had cowpox." This remark was not forgotten by Jenner. Attaining his majority, Jenner went to London, where he became a house pupil with John Hunter. He often discussed smallpox with the great anatomist, and once expressed a hope of being able to substitute vaccination for inoculation, to which Hunter characteristically replied: "Don't think, Jenner, but try." Tiring of city life, he returned to his native village and settled down as a country practitioner. By this time he had reached the conclusion that the "grease" of horses, cowpox and smallpox were the same disease. He made a drawing of the hand of a milkmaid with cowpox which he took to London, where his theory was beginning to be discussed in medical circles. In 1796, cowpox broke out on a farm near Berkeley, and Jenner seized the opportunity to put his theories to a test. He took pus from the hand of Sarah Neames, a dairy maid, who had contracted the disease, and inserted it through superficial incisions into the arm of James Phipps, a robust lad about 8 years of age. The vaccination was successful, and the result was very similar to that produced by inoculation with smallpox itself. Six weeks later, Jenner inoculated this boy with variolous matter, and was delighted to see that the lad did not contract the disease. When cowpox broke out again the following year, Jenner repeated his experiment successfully on three other persons. He then prepared a paper on the work he had done, and transmitted it to the Royal Society for publication. The council returned the manuscript, however, believing, apparently, that the evidence was insufficient to warrant publication in their transactions. Jenner resolved to publish the paper himself, and it was printed in 1798 as a pamphlet entitled: "Inquiry Into the Causes and Effects of Variolae Vaccinae, a Disease Discovered in Some of the Western Counties of England, Particularly Gloucestershire, and Known by the Name of the Cow Pox."

While in London to attend to the publication of his pamphlet, Jenner called on a Dr. Cline, with whom he left some cowpox virus for trial. Cline vaccinated one of his patients successfully, and later inoculated him in three different places with smallpox, with negative results. He therefore confirmed Jenner's work, and wrote, "I think the substitution of cowpox poison for smallpox promises to be one of the greatest improvements that has ever been made in medicine."

The leading scientific and medical men in London were now discussing vaccination. Several questioned the accuracy of Jenner's observations. Ingenhouz, a well known physician and scientist, opposed the cowpox theory, and cited several cases in which smallpox had been contracted after inoculation with cowpox. Others, such as Pearson and Woodville, adopted Jenner's ideas, but endeavored to exploit them on lines of their own. Jenner returned to London to rescue his discovery from destruction, to find that Pearson had opened an institute of his own for the inoculation of cowpox, in which Jenner refused to accept the offer of a prominent position. Jenner returned again to his native village to complete and publish his second paper: "A Continuation of Facts and Observations Relative to the Variolae Vaccinae."

Vaccination was soon introduced in America by Dr. Waterhouse of Cambridge, Mass., who vaccinated the members of his family, and then inoculated them with smallpox to demonstrate his faith in the procedure and to assist in showing the public the protection it affords. France, Spain, Austria, Italy and Switzerland accepted vaccination eagerly. Spain dispatched an expedition in 1803 to all her possessions in the Old and New worlds to introduce vaccination and to

check epidemics of smallpox, which were raging. Twenty-two children were taken along on this voyage in order to preserve the vaccine by passing it from arm to arm. Napoleon, in 1805, ordered all of his soldiers who had not had the smallpox to be vaccinated. The empress of Russia ordered that the first child who submitted to the operation be named "Vaccinoff," and that it be educated at public expense. Jenner's influence was so great that the king of Spain and the emperor of Austria released English prisoners of war at his request. The Royal Jennerian Society was formed, and a grant of £10,000 was bestowed by Parliament.

Notwithstanding the success and support that vaccination received throughout the world, there were many influential persons who still opposed the practice, and pamphlets, lampoons and caricatures were constantly published about its discoverer. Antivaccinationists claimed that various "beastly" diseases common to cattle appeared among the people since vaccination was introduced. A writer quoted a woman who said that since her daughter was vaccinated "she coughed like a cow and has grown hairy over her body." Another said that vaccination had been discontinued in his part of the country because the people who had been vaccinated "bellowed like bulls."

Notwithstanding the most bitter attacks, Jenner was elected a member of nearly all the leading scientific societies of Europe, and was presented with the freedom of Dublin, Edinburgh, London and Glasgow. The Medical Society of London conferred on him a gold medal, and he was granted diplomas from all parts of the world.

A fresh outburst of criticism occurred in 1810 which greatly unnerved and aged Edward Jenner. His life was further saddened by the loss of his wife and son in 1815. At that time he retired to Berkeley, which he did not leave again, except for a day or two, until his death. He wrote in his last letter to his friend Gardner, Jan. 23, 1823: "I have had an attack from a quarter I did not expect, the *Edinburgh Review*. These people understand literature better than physic, but it will do incalculable mischief. I put it down, at 100,000 deaths at least. Never was I involved in so many perplexities." The following day he retired in usual health, but was stricken the next morning with apoplexy. He never rallied, and died, January 26.

The principles which Edward Jenner advocated and practiced still remain the one efficient means of protection against smallpox. The most eloquent tribute to his memory are the lives that his discovery has saved.

### DEFINING A MISDEMEANOR

It costs only \$400 to be party to a murder in Chicago. Anyhow, that is all it cost Frank S. Reed of 5724 South State Street, as the following briefly recapitulated facts taken from the record of the trial in Judge Adams' court will show.

First, we will have to explain that Mr. Reed, or, as he sometimes styled himself, Dr. Reed, was on trial in the court named on two charges. First, for failure to report a contagious disease as the city ordinances require, and, next, for practicing medicine without a license.

On the evening of November 23, according to Reed's own testimony, he was called to see Herbert Cherry, whose parents reside at 5617 South State Street, and was informed that the little fellow had a sore throat and had been complaining for a day or two. After manipulating the vertebrae in the child's neck so that he would open his mouth, Mr. Reed made a brief examination, but prescribed no further treatment. He explained to the court, however, that he noticed that the throat was inflamed and there was a yellow spot on one side, but told the parents to call him in case the child got worse.

According to the testimony of Dr. C. D. Trice, a practicing physician in that neighborhood, who was called in by the family two days later, the child rapidly grew worse, and when Dr. Trice arrived was in a semiconscious state and died two hours later. Dr. Trice diagnosed the case as diphtheria, and promptly reported it; also he stated that, according to his best judgment, the case had been running for several days.



Before the case was called in court, "Dr." Reed, in a statement made to Dr. Spalding, chief of the Medical Bureau in the Department of Health, stated he suspected the child had diphtheria and that he manipulated the vertebrae on the back of the neck for the reason that such manipulation tended to control diseases of the throat. He also stated that he did not report the case, that the parents did not recall him, and he heard no more about the case. "Dr." Reed further stated that he was a licensed embalmer and under that license he had been treating cases in this way for the last six months.

It was also disclosed in the testimony that the sign on Reed's office door read "Doctor Frank S. Reed, Chiropractor," but after his interview with Dr. Spalding of the Department of Health, he had removed the word "Doctor," leaving the remaining part of the sign as it was. . . .

The attorney for the defendant entered a plea for leniency on the ground that his client had been perfectly frank and truthful in the statements he had made to the court. This plea, however, the court ignored and in passing sentence said: "This defendant had no business there at all. He is fined \$200 and costs on each charge, making a total of \$400 and costs." Then turning to the defendant, the court said: "You lock up your business and go out to the stockyards and get a job where you belong."—*Bulletin, Chicago School of Sanitary Instruction.*

## Medicolegal

### Request for Services for Injured Child

(*Fruin v. Glassnap (Conn.)*, 117 Atl. R. 547)

The Supreme Court of Errors of Connecticut, in setting aside a judgment obtained by the plaintiff, and ordering a new trial, does so on the ground that the charge to the jury was inadequate and prejudicial to the defendant. The court says that the plaintiff offered evidence to prove that a child was injured by an auto truck driven by the defendant, and was carried by a third person into the office of the plaintiff, and left in his care. The plaintiff immediately administered first aid to the child, and by examination discovered that she was seriously injured and would have to be confined in a hospital for eight or ten weeks and receive constant medical attendance. Soon afterward, the defendant came into the office and the plaintiff told him these facts, and that treatment of the child would entail expense; that he should like to know by whom he would be paid, and asked the defendant if he wanted him to take the case. The defendant answered that he did, and told the plaintiff to go on with the treatment. He then gave him \$10 to cover the expense of a roentgenogram, telling the plaintiff to credit the remainder, if any, on his bill for services. On the other hand, the defendant denied that he had any conversation with the plaintiff concerning payment for services rendered or to be rendered to the child by the plaintiff, and denied that he had paid the plaintiff any money. He offered no other evidence to contradict the evidence offered by the plaintiff. It was admitted that the defendant stood in no relationship to the injured child which put an obligation on him to furnish her with necessary medical care. On this evidence, under proper instructions, the jury could reasonably find the issues for the plaintiff. Therefore the trial court committed no error in denying the defendant's motion to set aside the verdict.

In the conditions in which these parties stood, the burden rested on the plaintiff to prove, either an express promise by the defendant to pay the plaintiff for his services, or circumstances or language from which his promise to pay might fairly be implied from the request he made. A simple request would not fix liability on the defendant, because he was in no relationship to the injured child which bound him to supply her with necessary surgical treatment. It must appear that by something said or done that obligation was put on him. From the evidence relating to the conversation between the parties, and the time and circumstances in which it took place, and also to the payment of \$10 on account, it might

reasonably be found either that the defendant made an express promise to employ and pay the plaintiff for his services, or that he made a request of the plaintiff for his services which implied a promise to pay for them. But, as to the difference between these alternatives, the trial court did not sufficiently instruct the jury. It did not define an express promise or an implied promise. It said nothing about a request from which a promise might legally be implied. Its repetition of the words "request or promise" was so insistent that the jury must have been impressed with the belief that a mere request of the defendant, without a promise of any kind, would be sufficient to hold him liable to pay for the plaintiff's services. That is not the law. In this particular, also, the charge was not fitted to the issues before the jury. The defendant did not deny that he requested the services rendered, but only that he promised to pay for them. Whether such a promise might be implied from the request was therefore a question which the jury, if they found the evidence insufficient to prove an express promise, would be called on to determine.

The rule of law that from the mere summons and request of a physician in an emergency to care for a person who is ill the law does not imply a promise to pay for the services rendered by the physician had no application to this case, as the defendant was not the person who summoned the plaintiff to care for the injured child.

### "Hearsay" in Qualification and Cross-Examination of Experts

(*Laird v. Boston & M. R. R. (N. H.)*, 117 Atl. R. 591)

The Supreme Court of New Hampshire overrules in this action for negligence the defendant's exception to the plaintiff's having been permitted on cross-examination to ask an expert witness called by the defendant whether he would modify his opinion if a certain admitted authority stated differently in his textbook. The court says that the use of standard authorities to discredit such a witness is a matter on which there is much diversity of opinion. The objection to such procedure on the ground that it violates the hearsay rule and permits the use of opinions which are not subject to cross-examination is unsound, or else it proves too much. If the opinion of one who is an authority cannot be used at all unless the holder of it is sworn and is subject to cross-examination, by what logic can the same inadmissible opinion be used as a basis for the admissible opinion of the expert witness? The opinion of the expert, qualified by study, is admitted as an exception to the hearsay rule. It is known to be founded on the assertions of others. Whether it shall be admitted or rejected depends on the witness' familiarity with the hearsay. Unless he is thoroughly versed in that hearsay, he is not qualified to testify. The reasoning of courts excluding inquiries about the authorities, on the cross-examination of the expert, leads directly to the conclusion that the opinion of the expert should be excluded. If the cross-examination puts before the jury the unsworn opinion of the authority, the direct testimony of the expert does the same thing, with the added infirmity involved in his recollection of what the authorities say.

The objection to this procedure is unsound for another reason. It appearing that certain printed books are received by the profession as authorities and as truly setting forth the views of certain authors, opinions based thereon are admitted in evidence. When the witness is confronted with the contents of one of these books that denies the views he has expressed, the issue presented is not whether the book states the true opinion of the author, but whether the witness has honestly and intelligently read and applied what is set down in the books. The view that the opinions used on cross-examination thereby become positive evidence leaves wholly out of consideration the fact that such opinions, being the foundation for the witness' opinion, are used solely to test its value, and assumes that trial courts and juries are either unable or unwilling to deal intelligently and fairly with restricted evidence.

Opinions are received in New Hampshire whenever it appears that they will be helpful, and the just and reason-



able corollary is that their value is open to investigation. The opponent may be permitted to test this value for various reasons and in various ways. There may be occasion to inquire whether the opinion is an honest one. Does it really express the views of the witness? If it be honest, does it represent the unanimous hearsay conclusion, or only a fragment of it? Has the witness made himself familiar with all the useful hearsay on the subject, or only a part? Having testified to the sum of the useful hearsay, he may justly be questioned concerning the units of which the sum is composed. No fact which tends directly to qualify or discredit the opinion given by the witness can be held to be inadmissible on his cross-examination, as matter of law. The whole field of hearsay knowledge on the subject is open to such investigation because of the nature of the opinion that has been received. How far this field can profitably be explored in a given case is a matter to be determined by the justice who presides at the trial.

Cases in which there was an evident abuse of this right in the reading of extended extracts from the authorities under the pretense of asking questions, or the standing of the author rested on the assertion of counsel, were not in point here, it being proved that the author was an eminent authority, while the question objected to related directly and simply to the point in issue.

#### Disease Contracted in Employment Not an "Injury"

(*Industrial Commission v. Cross et al. (Ohio)*, 136 N. E. R. 283)

The Supreme Court of Ohio says that the question presented in this case was whether a disease contracted in the course of employment is an "injury," within the meaning of a statutory provision for compensation, when an employee is injured in the course of his employment. Thus far, this court has not been called on to determine whether the term "injury" was intended by the legislature to include diseases generally, although it did declare that the original voluntary workmen's compensation act, passed prior to the adoption of the present state constitution, did not contemplate compensation for occupational disease. The constitutional provision is that "for the purpose of providing compensation to workmen and their dependents, for death, injury or occupational disease, occasioned in the course of such workmen's employment, laws may be passed," etc. After that, the present workmen's compensation law was passed, and it may be presumed that, when it uses the same words or terms as does the constitution, it uses them in the same sense as they are used in the constitution. Consequently, as the constitution differentiates between "injury" and "occupational disease," and if injury did not include occupational disease it did not include disease generally, and disease generally was excluded from its contemplation by the specific inclusion of occupational disease, it is held that the term "injury," as used in the statutory provision under consideration, does not include diseases which are contracted, as distinguished from diseases which are occasioned by, or follow as a result from, physical injury. In the instant case, it was alleged that the employee contracted typhoid fever by drinking contaminated water from a spring near where he was employed, which was the only water available for use as drinking water. Compensation was denied by the industrial commission. The court of common pleas decided against the commission, and that court's judgment was affirmed by the court of appeals. But, construing the law as above, the supreme court reverses the judgments of those two courts, and sustains a demurrer to the claimants' petition. The supreme court holds that, if the scope of cases compensable is to be extended, it should be done by unambiguous legislative enactment rather than by judicial construction. For it must be recognized that, if the term "injury" is to be construed to include typhoid fever contracted in the course of employment, it may as well include influenza, pneumonia, tuberculosis, smallpox, ordinary colds, rheumatism and practically every disease which may be contracted by workmen in the course of employment; and the workmen's compensation department will become a health and life insurance department for workmen, compulsorily supported by employers, and the constitutionality of the whole scheme be endangered.

## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Roentgenology, New York

December, 1922, 9, No. 12

Scientific Basis of Short Wave-Length Therapy. W. Duane, Cambridge, Mass.—p. 781.

\*Function of Muscles of Stomach. A. E. Barclay, Manchester, England.—p. 792.

\*What Is Best Method for Treatment of Uterine Fibromyoma by Means of Roentgen Rays? M. Bécère, Paris, France.—p. 797.

Protection in Radiology. G. E. Pfahler, Philadelphia.—p. 803.

Treatment of Cancer of Pelvic Organs with Moderate Radium Irradiation. J. G. Clark and F. E. Keene, Philadelphia.—p. 808.

Statistics and Technic in Treatment of Fibromyoma of Uterus by Radiotherapy. J. A. Corscaden, New York.—p. 812.

Estimation of Cardiac Volume by Roentgenology. C. R. Bardeen, Madison, Wis.—p. 823.

**Function of Muscles of Stomach.**—Experiments on the function of the muscles of the stomach are quoted by Barclay which he believes go a very long way toward confirming his hypothesis that the oblique band of muscle can act entirely independently of the circular and longitudinal coats; and if this is correct, gastroparesis is due to elongation of the oblique band, while hypotonus, or so-called atony, is the relaxation, lengthening and possibly stretching of the fibers of the circular and longitudinal coats, the oblique band retaining its normal length. The chief function of the oblique band is to carry the weight of the stomach and its contents. The functions of the other two coats are concerned with peristalsis and with that ligamentous action of muscle called tonic action, but which is better described as posture.

**Roentgenotherapy of Uterine Fibromyoma.**—For the large majority of cases of uterine fibromyoma Bécère prefers the treatment with small doses of roentgen ray given at short intervals.

#### American Review of Tuberculosis, Baltimore

December, 1922, 6, No. 10

\*Cauterization of Adhesions in Artificial Pneumothorax Treatment of Pulmonary Tuberculosis. H. C. Jacobaeus, Stockholm, Sweden.—p. 871.

\*Compression of Lung by Paraffin Oil in Pleural Cavity. E. Archibald, Montreal.—p. 898.

Treatment and Organization for Combating Surgical Tuberculosis at Surgical University Clinic of Frankfurt-Am-Main, Germany. M. Fleisch-Thebesius.—p. 900.

\*Laryngeal Tuberculosis From Point of View of Pulmonary Specialist. C. L. Minor, Asheville, N. C.—p. 914.

\*Effect of Six Weeks' Bed Rest on Patients Entering Trudeau Sanatorium. L. Brown and F. H. Heise, Trudeau, N. Y.—p. 920.

\*Sodium Morrhuate in Treatment of Pulmonary Tuberculosis. W. D. Tewksbury, Washington, D. C.—p. 929.

\*Treatment of Pulmonary Tuberculosis with Sodium Morrhuate. M. J. Fine, Newark, N. J.—p. 934.

\*Action of Cod Liver Oil on Tubercle Bacillus. H. B. Campbell and J. Kieffer, Norwich, Conn.—p. 938.

Dorset's Egg Medium for Cultivation of Tubercle Bacilli, and Its Modifications. C. G. Burn, Philadelphia.—p. 950.

**Cauterizing Adhesions in Artificial Pneumothorax Treatment of Lung Tuberculosis.**—Jacobaeus discusses the technic and indications of his method of cauterization with the galvanocautery to remove adhesions in the artificial pneumothorax treatment of lung tuberculosis and presents his results. Of seventy-eight cases, published thus far, in fifty-five this method has been technically and completely successful in removing adhesions which prevented complete collapse of the lung. The clinical result has not been so favorable, as only forty-nine patients, or two thirds of all cases, have been symptom free. Although it has been impossible by this method to obtain as high a percentage of clinically improved cases as in cases of simple, uncomplicated pneumothorax without adhesions, Jacobaeus feels that the procedure ought to be of permanent value in, perhaps, a limited number of pneumothorax cases with stringlike or membrane-like adhesions.

**Compression of Lung by Paraffin Oil.**—In order to overcome the necessity of frequent refills and the danger of pleural effusions, sometimes infected, leading to adhesions



and the not infrequent loss of the pleural space in the production of an artificial pneumothorax, Archibald injected liquid petrolatum into animals and noted the results. He found that from the standpoint of the necessity of refills, paraffin oil cannot be relied on to remain inert in the pleural cavity because one half or more of the amount injected was later recovered from the chest. The experiments also showed that in a majority of the cases there occurred a slight aseptic inflammatory reaction, as the result of which minute nodules of fibrinous exudate become attached to the pleura and were ultimately organized. Most of these gave rise to no adhesions between the pleural leaves, but some did. The greater part of the pleural space remained free; but pocketing would occur chiefly in the lower third of the thorax. In a few cases the exudate of fibrin was found to be very considerable, and adhesions were extensive. In none of these latter cases could infection be demonstrated by cultures. A third point concerned the possibility of estimating the degree of lung collapse by roentgen-ray examination. It was found that liquid petrolatum allowed the rays to pass about as freely as does normal lung tissue. This study served to emphasize the advantage of air for pneumothorax work, particularly in such matters as roentgen-ray control, comparative lack of pleural irritation, manometric control of tension (found impossible, by the way, to register in the case of oil) and ease of removal in the event of unfavorable pressure symptoms.

**Laryngoscopy Important in Tuberculosis Cases.**—If the use of the laryngoscope were more general in cases of pulmonary tuberculosis, Minor is convinced that the early changes which are to be found in so large a number of these cases, and which with experience are not difficult of recognition, could easily be found. The lung specialist should always use the laryngoscope to confirm his diagnosis of pulmonary trouble, and then send the patient to the throat specialist for treatment.

**Effect of Bed Rest in Pulmonary Tuberculosis.**—While no striking evidence is produced by Brown and Heise to show the benefit of six weeks' bed rest to patients entering the sanatorium, under the conditions existing relative to selection of cases and time of beginning treatment, the authors feel, nevertheless, that under more favorable conditions, especially when treatment can be begun immediately on diagnosis, intensive bed rest will prove of benefit to the patient, although symptoms of definite activity are absent. A much more impressive idea of the seriousness of the disease and of the necessity of proper care is inculcated and this should, in later days, months or years, show beneficial results in the prevention of relapse.

**Sodium Morrhuate in Pulmonary Tuberculosis.**—The experimental work reported on by Tewksbury was done in the Tuberculosis Hospital, Washington, D. C., and was suggested by reports made in the British medical literature on the use of sodium morrhuate in tuberculosis. A 3 per cent. watery solution of sodium morrhuate, containing 0.5 per cent. phenol, was used, beginning with 7 minims of the solution given subcutaneously and increasing each injection 2 minims, up to 30 minims; then back to 7 minims intravenously, and increasing gradually to from 30 to 60 minims, depending on the patient's reactions and the progress of the case. The injections were given every fourth day. Of the eighteen patients treated, sixteen had an unfavorable and two a fair prognosis. All were in the moderately advanced or far advanced stage of the disease. The results obtained were: nine patients improved; six unimproved and three died. The most striking feature was the apparent breaking up of tubercle bacilli in the sputum and the tendency to their diminution in number or disappearance. This was noted in ten patients, and in two of these the sputum became entirely negative. It is not stated definitely that the improvement noted in the nine cases is due to the treatment, as patients of this type often will display periods of temporary improvement without any treatment, but Tewksbury feels that it is, at least, possible that the sodium morrhuate had some beneficial effect.

**Sodium Morrhuate in Pulmonary Tuberculosis.**—Of fifteen patients treated by Fine with subcutaneous injections of from 7 to 10 minims of sodium morrhuate, twice a week, five

showed some improvement. Of these, two made a complete recovery. The sputum cleared completely in two cases. Three patients showed a local reaction. Seven patients coughed more after the injections; and in some instances treatment had to be discontinued on this account. One patient expectorated blood; and the question arises whether it is advisable to give treatment in cases with a history of hemorrhage. Four patients gained weight. Three showed improvement in chest signs. These results lead Fine to conclude that results obtained with the usual form of treatment are as effective as, and probably more so, than those obtained with sodium morrhuate; but that the sodium morrhuate deserves further trial and may be placed in the category of aids in the usual treatment of tuberculosis.

**Action of Cod Liver Oil on Tubercle Bacillus.**—In the manner in which it was used by Campbell and Kieffer, cod liver oil had a definite inhibitory and bactericidal action on virulent tubercle bacilli. Cod liver oil also inhibited the growth of a lepra bacillus, an avirulent tubercle bacillus and *Bacillus typhosus*. The aqueous extract of cod livers had no true inhibitory or bactericidal action on the tubercle bacillus. The most interesting and definite finding has been the increased granular appearance and granulation of tubercle bacilli and allied bacteria after contact with cod liver oil, especially in view of the fact that similar changes have been observed in the bacilli from sputum of patients treated with sodium morrhuate. Cod liver extract had the opposite effect on the tubercle bacilli. Cod liver oil, extracted with as little heat as possible and not refined in any way, seemed to have had a more potent action than commercial refined oil or oil extracted by heat.

### Archives of Occupational Therapy, Baltimore

December, 1922, 1, No. 6

- Crafts Adaptable to Occupational Needs: Their Relative Importance. L. J. Haas, White Plains, N. Y.—p. 443.
- Study in Occupational Therapy for Psychoneuroses. L. H. Ziegler, Waukesha, Wis.—p. 457.
- Experiences in Directing Occupational Therapy Association. I. Kidder—p. 473.
- Occupational Therapy in Tuberculosis Hospitals for Ex-Service Men. B. W. Carr, Washington, D. C.—p. 481.

### Colorado Medicine, Denver

December, 1922, 19, No. 12

- Six Cases of Acute Perforation of Chronic Duodenal Ulcer. W. A. Kickland, Fort Collins.—p. 253.
- Treatment of Malignancy by Radiation. W. W. Wasson, Denver.—p. 257.

### Illinois Medical Journal, Oak Park

January, 1923, 43, No. 1

- Multiplex Pathology and Cancer Problem. W. S. Bainbridge, New York.—p. 20.
- How Can a State Medical Journal Best Serve Its Readers? C. J. Whalen, Chicago.—p. 24.
- \*Ectopic Pregnancy. A. Hall, Mt. Vernon.—p. 33.
- How to Meet Obstetric Emergencies. G. Gellhorn, St. Louis.—p. 37.
- Cesarean Section Under Local Anesthesia. E. C. Roos, Decatur.—p. 42.
- Experiences with Nonsurgical Drainage of Gallbladder. J. Mayer, Chicago.—p. 47.
- \*Syphilis of Lung; Review of Reported Cases. A. Egdahl, Rockford.—p. 50.
- \*Complement and Syphilis, with Special Reference to Biologic Action of Arsphenamin and Mercury. F. Herb, Chicago.—p. 54.
- Benign Neoplasms of Larynx. J. A. Cavanaugh, Chicago.—p. 59.
- Roentgen-Ray Treatment of Thyrotoxicosis. I. S. Trostler, Chicago.—p. 64.
- Disturbances of Knee Joint. M. A. Bernstein, Chicago.—p. 70.

**Ectopic Pregnancy.**—Hall has seen twenty-one cases of ectopic pregnancy. Many of them were acute. In one case operation was refused and the patient died from hemorrhage the next day. The remaining twenty women were operated on and nineteen recovered. The only death that occurred was that of a double ectopic patient who had been treated by another physician six or seven days before a diagnosis was made. She had bled until she was almost pulseless. Her abdomen was filled with blood. She died five days following operation from peritonitis. Two cases were of more than usual interest. In one of these, a case of left tubal pregnancy, the rupture did not occur until the twentieth week, and when it did occur, there was no shock and no



hemorrhage. The fetus, nine inches in length, was found underneath the liver. The tube was removed with the placenta intact, and the woman made an uninterrupted recovery. The other case was one of twin pregnancy, an intra-uterine pregnancy combined with a tubal pregnancy. The tube was ruptured at the eighth week, accompanied with pain, internal hemorrhage and shock. The woman was operated on at once, and the diseased tube was removed. Not until the abdomen was opened was the uterine pregnancy discovered. The woman made an uninterrupted recovery and seven months later was delivered of a normal baby.

**Syphilis of Lung.**—Egdahl's patient had a negative history for syphilis but the blood Wassermann was four plus. The first symptom was cough, which was followed by night sweats, pains in both sides of the chest, and shortness of breath. There was no expectoration of blood. Examination of the chest disclosed signs indicating the presence of some pathology on the left side. The sputum was negative for tubercle bacilli and elastic tissue. This patient was given six injections of neo-arsphenamin followed by intramuscular injections of mercury. She improved markedly for about two years, when she had a severe attack of pain in the left side while at work, with symptoms of collapse. No lung disturbance that could explain her syncopal attack could be found. A markedly enlarged heart was demonstrated, indicating that an acute dilatation had occurred. As she still had a positive Wassermann reaction, she was given another course of neo-arsphenamin injections, with good results. This is being followed by the administration of mercury and iodids. Egdahl reports that his patient was feeling very well when last seen.

**Complement and Syphilis.**—The primary stage of syphilis, Herb asserts, is characterized by a sufficiency of ferments and complement and a negative Wassermann reaction. The secondary stage of syphilis and the positive Wassermann reaction are ushered in by the exhaustion of the ready supply of complement. It is characterized by a relative insufficiency of ferments, or complement, or both. The tertiary stage of syphilis is characterized by a total insufficiency of complement. Arsphenamin and mercury act biologically as complement. The lack of complement makes syphilis a formidable disease. In Herb's opinion, not stronger spirochetocides, but a less harmful complement is needed to combat syphilis.

### Journal of Biological Chemistry, Baltimore

December, 1922, 54, No. 4

- Studies on Enzyme Action. XXI. Banana Gel and Banana Sucrase. K. G. Falk and G. McGuire, New York.—p. 655.
- Esterification of Creatin. A. W. Dox and L. Yoder, Detroit.—p. 671.
- \*Colorimeter for Bicolorimetric Work. V. C. Myers, New York.—p. 675.
- \*Relations Existing Between Arterial and Venous Blood of Dog with Special Reference to Plasma Chlorids. E. A. Doisy and J. W. Beckmann, St. Louis.—p. 683.
- Nonprotein Organic Constituents in Blood of Marine Fish. W. Denis, New Orleans.—p. 693.
- Behavior of Chlorids Introduced into Blood under Normal and Nephritic Conditions. F. P. Underhill and E. T. Wakeman, New Haven, Conn.—p. 701.
- Influence of Subcutaneous Injections of Indol and Skatol on Nitrogenous Metabolism of Rabbit. F. P. Underhill and R. Kapsinow, New Haven, Conn.—p. 717.
- \*Preparation of Nucleic Acid from Nucleoprotein of Tubercle Bacilli (Tuberculinic Acid). T. B. Johnson and E. B. Brown, New Haven, Conn.—p. 721.
- Pyrimidins Contained in Tuberculinic Acid. Nucleic Acid of Tubercle Bacilli. T. B. Johnson and E. B. Brown.—p. 731.
- \*Quantitative Aspects of Role of Vitamin B in Nutrition. T. B. Osborne and L. B. Mendel, New Haven, Conn.—p. 739.
- \*Studies in Inorganic Metabolism. IV. Influence of Yeast and Butter Fat on Magnesium and Phosphorus Assimilation. L. J. Bogert and R. K. Trail, Manhattan, Kan.—p. 753.
- Vitamin A Content of Lard Obtained from Hogs on a Control Ration. M. G. Mallon and M. Clark, Lafayette, Ind.—p. 763.
- \*Comparison of Du Bois and Harris and Benedict Normal Standards for Estimation of Basal Metabolic Rate. W. M. Boothby and I. Sandiford, Rochester, Minn.—p. 767.
- \*Summary of Basal Metabolism Data on 8,614 Subjects with Especial Reference to Normal Standards for Estimation of Basal Metabolic Rate. W. M. Boothby and I. Sandiford, Rochester, Minn.—p. 783.
- Diacetone Glucose. P. A. Levene and G. M. Meyer, New York.—p. 805.
- Introduction of Benzylidene-1-Ethyl-2-Diazogluconate. P. A. Levene, New York.—p. 809.

**New Colorimeter for Bicolorimetric Work.**—A new colorimeter which has been designed chiefly for such bicolorimetric work as the colorimetric  $p_H$  determination is described by Myers. Standards are carried in wedges, one, two, or three of which may be employed at the same time. With one wedge the instrument may be used as an ordinary colorimeter. The second wedge provides for bicolorimetric work. To obtain a perfect match with unknown solutions which are slightly turbid or colored a third wedge may be used.

**Migration of Hydrochloric Acid in Body.**—A positive result in twenty out of twenty-two experiments made by Doisy and Beckmann they believe supports the occurrence of a migration of hydrochloric acid in the blood in the body.

**Preparation of Nucleic Acid from Tubercle Bacillus.**—Tubercle bacilli (human and bovine) have been carefully extracted by Johnson and Brown with toluene to remove fat, and the cellular structure was subjected to hydrolysis at ordinary temperature with 3 per cent. sodium hydroxid to separate the nucleic acid. The nucleic acid of tubercle bacilli has been precipitated by means of alcohol and 7.7 gm. was obtained which failed to respond to the biuret test for proteins. This specific nucleic acid has been named tuberculinic acid. The protein residue left behind after removal of tuberculinic acid has been analyzed according to the method of Van Slyke and its total nitrogen accounted for.

**Role of Vitamin B in Nutrition.**—In the feeding experiments conducted by Osborne and Mendel on white rats, a food mixture consisting of casein 18, starch 54, lard 15, butter fat 9, and salt mixture 4 per cent., which has demonstrated, as the result of many trials, that it will promote growth to full adult size when an abundance of vitamin B in the form of yeast is supplied, represented the "standard food" which was always furnished to the animals ad libitum, along with tap water. The vitamin B product usually consisted of tablets from a single lot of dried brewery yeast which has been used in the authors' laboratory for several years. The yeast was fed in a separate dish and almost invariably eaten promptly as soon as it was offered. In four groups of one series of experiments, in which 200 mg. of dry yeast were supplied daily to each rat, the animals with few exceptions reached the average adult size within the average normal time. Although the daily dosage of 200 mg. of yeast seems to suffice as a source of vitamin B to facilitate average growth at all periods until adult size is reached, the outcome with 100 mg., particularly after the animals attain a weight of 200 gm., tends to be less satisfactory. When the daily dosage is still smaller (50 mg.; 25 mg.), the rate of growth is more or less retarded from the very beginning of the experiments. In the case of the larger animals, 25 mg. of yeast per day failed in every instance to secure even maintenance of body weight for any length of time, although all of the animals recovered their weight and began to grow when the vitamin B intake was augmented. Even with somewhat smaller animals on the lowest dosage not only was no long continued growth secured, but maintenance became somewhat difficult. The daily requisite per 100 gm. of body weight seemed to approximate what is contained in from 50 to 60 mg. of the dry yeast.

**Influence of Yeast and Butter Fat on Magnesium and Phosphorus Assimilation.**—Bogert and Trail report that the magnesium and phosphorus balances in two normal women were favorably influenced by the addition of yeast to a diet of white bread, rice, lean beef, skimmed milk powder, purified nut margarine, sugar and starch. The calcium balances, determined over the same period on the same subjects and previously reported, were similarly affected. A third subject failed to show improvement of calcium or magnesium balances on the addition of yeast to the diet, although the retention of phosphorus was favored under these circumstances. The substitution of an equal weight of purified butter fat for the vegetable fat in the basal diet led to diminished fecal and total excretion of magnesium and phosphorus on a constant intake, with a favorable influence on the balances of these elements in all four subjects studied. In every case the calcium balances showed a simultaneous improvement, the metabolism of these three elements being closely parallel



throughout the experiment. Although these facts strongly suggest some relationship between the vitamin content of the diet and the assimilation of calcium, magnesium and phosphorus, the authors admit that the effects produced by the yeast and butter fat may be due to factors other than their vitamin content.

**Comparison of Du Bois, Harris and Benedict Standards for Estimating Basal Metabolism.**—It is shown by Boothby and Sandiford that there is remarkable agreement between the surface area calculated by the Du Bois surface area formulas and the formulas derived from Harris and Benedict's biometric correlation formulas for the prediction of the basal heat production. The Du Bois formula for the determination of the surface area and the Du Bois normal standards of heat production for each square meter of body surface for age and sex are considered by them the best method at present available for predicting the normal heat production.

**Basal Metabolism Standards.**—The data presented by Boothby and Sandiford are evidence to the effect that the basal metabolic rate differentiates diseases into those with increased, normal, and decreased metabolism as sharply as the temperature divides diseases into the febrile and afebrile groups. The two points especially emphasized are: first, that a high percentage of persons have a basal metabolic rate within  $\pm 10$  per cent. and a very high percentage within  $\pm 15$  per cent. of the Du Bois standards for age and sex for each square meter of body surface, provided the subjects have no definite disease that is characterized by a pathologic alteration in the rate of heat production; and second, that in a smaller percentage of these same subjects the basal metabolic rate is within the same limits when the Harris and Benedict standards are used.

### Journal of Comparative Psychology, Baltimore

October, 1922, 2, No. 5

- Attention, Distraction and Fatigue. F. C. Dockeray.—p. 331.  
\*Effects of Cigar and Cigaret Smoking on Certain Psychologic and Physiologic Functions. R. L. Bates.—p. 371.  
Instinctive Locomotor Reactions of Loggerhead Turtle in Relation to Its Senses. G. H. Parker.—p. 425.

**Effects of Smoking on Function.**—Bates' work was done with six reactors, under varying conditions, using the method employed by Carver in his observation of the effect of smoking on the accuracy of throwing darts at a target. As to the effect on the actual distribution of darts, in every case but one, the variation was less for the smoking days. The distribution was more uniform—less scattering—after smoking. The analysis of the quadrants of the target in respect to daily differences and differences in the progressive sets of the hour was likewise productive of negative results.

### Journal of Infectious Diseases, Chicago

November, 1922, 31, No. 5

- Factors Influencing Development of Metachromatic Granules in Diphtheria Bacillus. E. Megrail, Cleveland.—p. 393.  
\*Experimental Botulism in Dogs. R. Graham and S. Eriksen, Urbana, Ill.—p. 402.  
Factors Governing Fat Content of Bacteria and Influence of Fat on Pellicle Formation. L. W. Larson and W. P. Larson, Minneapolis.—p. 407.  
Velocity of Fixation of Complement with Bacterial Antigens. R. L. Kahn and S. R. Johnson, Lansing, Mich.—p. 416.  
\*Determination of the Optimum Amount of Antigen in Complement Fixation Tests. VII. R. L. Kahn and S. R. Johnson, Lansing, Mich.—p. 426.  
\*Effect of Inactivation on Complement Fixing Substances in Syphilitic Serum. VIII. R. L. Kahn and S. R. Johnson, Lansing, Mich.—p. 438.  
\*Reliability of Sachs-Georgi Test for Syphilis. J. W. Rice, New York City.—p. 444.  
\*Immunologic Experiments with Platelets of Human Blood. F. R. Menne, Portland, Ore.—p. 455.  
\*Intestinal Bacterial Flora of Rats on Diet Deficient in Fat Soluble Vitamin A. F. Creekmur, Chicago.—p. 461.  
\*Direct Injection of Bacillus Typhosus into Gallbladder. T. D. Beckwith, Berkeley, Calif.—p. 468.  
\*Respiratory Infection and Septicemia of Cats Due to Hemolytic Streptococcus. S. Bayne-Jones, Baltimore.—p. 474.  
Modified Gram Stains. N. Kopeloff and P. Beerman, New York.—p. 480.  
Variation and Life Cycles of Pathogenic Bacteria. E. Almquist, Stockholm, Sweden.—p. 483.

New Method for Differential Staining of Bacteria (Cotton Blue-Safranin). F. M. Scales, Washington, D. C.—p. 494.  
Isolation of Anthrax Bacillus from Shaving Mug. C. Vincent, Baltimore.—p. 499.

**Experimental Botulism in Dogs.**—Unfiltered type A toxin of *Clostridium botulinum* proved fatal to dogs in doses of 0.1 c.c. or more when administered subcutaneously by Graham and Eriksen. Type A spores, detoxicated by washing and heating, produced no noticeable effects when injected subcutaneously into dogs. Feeding relatively large amounts of unfiltered Type A toxin (100 c.c.) produced illness and death in dogs only when food had been previously withheld for forty-eight hours. The effects of other forms of artificially induced fatigue were not determined. The symptoms of Type A intoxication included loss of appetite, muscular weakness, languor, prostration, salivation, congestion of the mucous membranes of the mouth, and respiratory disturbances. Type A antitoxin apparently protected dogs against lethal amounts of toxin. Unfiltered Type B toxin of *Clostridium botulinum* administered intravenously and subcutaneously in liberal amounts failed to induce manifest symptoms. The internal organ and muscle tissues of horses and pigs which had died of Type A botulism were consumed by dogs without ill effects. Dogs appear to be satisfactory animals for differentiating A and B toxins of *Clostridium botulinum* following subcutaneous injection.

**Quantitative Relation Between Serum and Antigen in Complement Fixation.**—Studies made by Kahn and Johnson on the quantitative relation between serum and antigen in the Wassermann as well as specific complement fixation tests led to the evolution of a simple titration method for the determination of the optimum amount of antigen for these tests. The widely employed method of titrating antigen for complement fixation tests consists of determining the so-called unit or smallest amount which will produce complete fixation of complement with a strongly positive serum and employing in the tests as many units as possible, providing the final amount is free from anticomplementary and hemolytic properties. This method is, in the authors' opinion, based on the wrong assumption that the greater the concentration of antigen, keeping the other constituents the same, the stronger the reaction. It was observed that with alcoholic extract antigens and syphilitic serums there exists an optimum range of antigen which will give complement fixation reactions of high sensitiveness with comparatively weak serums. This optimum antigen range may readily be determined with each antigen by a simple titration indicated in the text. This titration also indicates that the employment of excessive amounts of antigen may render weak or moderate reactions, negative. It was further observed that with bacterial antigens and specific immune serums similar antigen titrations did not disclose any optimum range of fixation for these tests. It could be readily discerned, however, that there is no advantage in employing excessive amounts of bacterial antigens. There appears, on the other hand, to be an important disadvantage since unnecessarily large amount of antigen may lead to nonspecific absorption of complement.

**Effect of Inactivation on Complement Fixing Substances in Syphilitic Serum.**—The inactivation of syphilitic serum for one-half hour at 56 C. was found by Kahn and Johnson to enhance the complement fixation reaction in many cases, providing the period of fixation was no less than four hours at icebox temperature. A small loss in antibody content following inactivation was observed in some cases. The proportional antibody gain, however, due to inactivation, was greater than the antibody loss.

**Results of Sachs-Georgi Test for Syphilis.**—When roughly classified into "positive" and "negative," the Sachs-Georgi tests agreed with the Wassermann tests in 94.4 per cent. of 1,000 cases tested by Rice. The Sachs-Georgi test appears to be less sensitive than the Wassermann reaction in patients receiving antisiphilitic treatment and in cases of cerebrospinal syphilis. The Sachs-Georgi test is just as sensitive as the Wassermann test in untreated cases of primary, secondary and tertiary syphilis.

**Immunologic Experiments with Human Blood Platelets.**—The immunologic reactions of human blood platelets, Menne



asserts, indicate the presence in platelets of specific antigenic constituents, and results of the precipitin test point to a definite difference in the constitution of the platelets and the leukocytes in human blood. The observations on human platelets support the views of Bedson and others that the platelets differ in their constitution from other elements of the blood.

**Intestinal Flora of Rats on Diet Deficient in Vitamin A.**—In a study made by Creekmur of the fecal bacteria of a group of rats on a diet so deficient in fat soluble vitamin A as to result in xerophthalmia and other conditions characteristic of this deficiency, as compared with a group on an adequate control diet, no change occurred in the relative proportions of gram-negative rods, gram-positive rods, gram-positive cocci, and gram-negative cocci, as determined by smears made from standard emulsions of the freshly collected feces. On the deficient diet, the feces of the majority of the animals became dry and hard, and the total number of viable bacteria was greatly decreased. When these animals were given fat soluble A in an amount sufficient to cause a disappearance of lesions, the feces became moist and soft and the total number of bacteria increased strikingly. In most of the animals on the deficient diet, streptococci disappeared completely. This may have been due to the unfavorable conditions brought about in the intestinal canal by the inadequate diet, the less resistant streptococci disappearing while the more hardy species merely decreased greatly in number. There was no change in the proportions of bacteria which fermented glucose, lactose and saccharose. The proportion of hydrogen sulphid forming bacteria remained constant.

**Results of Injection of *Bacillus Typhosus* into Gallbladder.**—Injection of *Bacillus typhosus* directly into the gallbladder of the rabbit was followed by prompt appearance of agglutinins within the circulation. This response was stimulated by dead as well as by living organisms. Typhoid bacilli implanted within the gallbladder pass through the lining epithelium and appear shortly in other organs, such as the spleen, liver, lung and kidney, but they were not isolated from the peripheral circulation. It seems likely to Beckwith that lymph is at least partially responsible for this distribution. Migration of *Bacillus typhosus* through the epithelium into the tunica is attended after appropriate lapse of time by the formation of lesions which are characteristic of those found in the typhoid carrier.

**Epizootic in Cats Caused by Hemolytic Streptococcus.**—An unusual epizootic in cats due to a variety of hemolytic streptococcus is described by Jones. The disease began as an infection of the upper respiratory tract and ended with septicemia. Pneumonia did not occur. The infection spread rapidly among associated animals and had a high mortality. The organism causing the disease, *Streptococcus hemolyticus*, resembled the human types of hemolytic streptococci more closely than the bovine type, but differed immunologically from the strains of both of these varieties, with which they were compared. All the strains of this streptococcus were identical.

### Journal of Nervous and Mental Diseases, New York

January, 1923, 57, No. 1

- \*Pathology of Senile Psychosis. Differential Diagnostic Significance of Redlich-Fisher's Miliary Plaques. S. Uyematsu, Boston.—p. 1.  
\*Structural Basis of Neuroses and Psychoses. L. B. Alford, St. Louis.—p. 26.

**Diagnostic Significance of Redlich-Fisher Miliary Plaques.**—One hundred cases of senile psychoses were subjected to a clinico-anatomic investigation by Uyematsu. Effort was made, particularly, to determine the differential diagnostic significance of the Redlich-Fisher miliary plaques, which Uyematsu regards one of the most important problems related to the presenile and senile psychoses. Apparently the plaques encountered in senile brains are not uniform in structure but consist of various components, differing by types and locations. The structure common to all is the court (Hof) which consists of dark stained fibrils of indefinite character. This part represents, in all probability, a destructive process of

the ground tissue following the primary thickening of the neuroglia reticulum. The primary thickening of the reticulum is considered to be a reaction to the various degenerative processes of the ectodermal and mesodermal element, such as ganglion cells, neurofibrils, glia cells, glial fibers, blood vessels, products of pathologic metabolism, etc. So far as the nature of the pathologic metabolism is concerned Uyematsu has no definite conceptions although the ganglion cell origin is suspected by him. The abnormal reaction of the reticulum, which seems to be the basis of the entire process, is the characteristic feature of the senile brains. It may be primary exhaustion of nutritive energy, or a secondary characteristic caused by specific exogenous agencies. Although a great many plaques are found around the vessels, the reticulum reaction is not considered to be dependent directly on malnutrition of the parts supplied by altered vessels. Although many points remain unexplained, it seems to be certain, from what has been studied by others and by Uyematsu, that the plaques under discussion represent a specific degeneration of senile brains and their equivalent.

**Structural Basis of Neuroses and Psychoses.**—An attempt is made by Alford to explain the nature of the structural changes which have been assumed to be the basis of mental deviations. The method is that of comparative study. Taking for comparison such obscure nervous affections as progressive muscular atrophy, paralysis agitans, Little's disease and color blindness, it is shown that they fall into two groups: (1) the progressive and acquired, and (2) the stationary and congenital conditions. Evidence is offered to prove that they all have a structural basis and that in each case the degeneration or deficiency affects structures subserving one or a few closely related functional units. Through further comparisons, mental deviations are shown to fall into one or the other of these groups.

### Kentucky Medical Journal, Bowling Green

November, 1922, 20, No. 11

- Accidents in Industries. J. G. Sherrill, Louisville.—p. 733.  
Causes of Blindness in Kentucky School for the Blind. I. A. Lederman, Louisville.—p. 751.  
Congenital Syphilis of Nervous System. F. G. Speidel, Louisville.—p. 755.  
Pyelitis in Children. J. F. Dunn, Arlington.—p. 757.  
Diarrhea in Children. W. L. Mosby, Bardwell.—p. 758.  
Lacerated Perineum. E. S. Allen, Louisville.—p. 761.  
Intussusception in Children; Report of Case. T. E. Craig, Fairdale.—p. 763.  
Multiple Neuritis in Children and Its Treatment. H. T. Crouch, Bardwell.—p. 765.  
Endocrines in Gynecology. J. J. Rodman, Owensboro.—p. 767.  
Summer Diarrhea in Infants. J. W. Bruce, Louisville.—p. 771.  
Brain Tumor: Case Report. L. W. Frank, Louisville.—p. 774.  
Compression Fracture of Spine: Case Report. H. H. Hagan, Louisville.—p. 776.  
Hydronephrosis, Hydro-ureter: Case Reports. O. Grant, Louisville.—p. 778.  
Constipation in Adult. W. J. Shacklette, Glendale.—p. 779.  
Canine Antirabic Vaccine for Prevention of Rabies in Dogs. L. H. South, Louisville.—p. 780.

### New York Medical Journal and Medical Record

Jan. 3, 1923, 117, No. 1

- Modern Commentaries on Galen. Physiology of Voice and Organs of Respiration. J. Wright, Pleasantville, N. Y.—p. 1.  
Establishment of Temporary or Permanent Pulmonary Lip Fistula in Conservative Treatment of Advanced Bronchiectatic Lung Abscess. W. Meyer, New York City.—p. 7.  
Nine and One-Half Years' Experience with Artificial Pneumothorax. P. H. Ringer, Asheville, N. C.—p. 14.  
Value of Roentgenogram in Diagnosis and Prognosis of Pulmonary Tuberculosis. G. G. Ornstein, New York.—p. 19.  
Value of Complement Fixation Test in Tuberculosis. Hecht-Weinberg Modification. II. R. Upham and A. J. Blaivas, Brooklyn.—p. 22.  
Tuberculosis and Poison Gas. A. P. Francine, Harrisburg, Pa.—p. 25.  
Shall We Tell Our Tuberculous Patients the Truth? A. Minnig, Denver.—p. 27.  
Abscesses Descending from Upper Air Passages. O. Glogau, New York.—p. 29.  
Climate in Treatment of Pulmonary Tuberculosis. H. Schwatt, New York.—p. 32.  
Roentgen-Ray Study of Tuberculous Lungs. T. Frazer and J. D. MacRae, Asheville, N. C.—p. 34.  
Present Status of Radiation Treatment of Tonsils. C. F. Robinson, Barre, Vt.—p. 39.  
Case of Ludwig's Angina. D. H. Levy, New York.—p. 40.



- Peritonsillar Abscess of Unusual Location. A. I. Schwartz, New York.—p. 41.  
Diagnosis of Optic Neuritis Due to Sinus Disease. J. N. Hoffman, Canton, Ohio.—p. 42.

### Oklahoma State Medical Association Journal, Muskogee

December, 1922, 25, No. 12

- Tuberculous Infection in Children. R. M. Balyeat, Oklahoma City.—p. 343.  
Tuberculosis of Kidney. J. Z. Mraz, Oklahoma City.—p. 345.  
Pyelitis in Pregnancy and Puerperium. J. A. Hatchett, Oklahoma City.—p. 348.  
Pyelitis. L. A. Mitchell, Frederick.—p. 353.  
Acute and Chronic Salpingitis and Treatment. J. L. Shuler, Durant.—p. 355.

### FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Journal of Children's Diseases, London

October-December, 1922, 19, No. 226-228

- \*Prenatal Hygiene and Problems of Maternity and Child Welfare. W. M. Feldman.—p. 169.  
\*Severe Blood Diseases of Childhood: Purpura. F. J. Poynton, II. Thursfield and D. Paterson.—p. 178.  
\*Pel-Ebstein Type of Hodgkin's Disease. E. Cautley.—p. 185.  
Cerebral Hemorrhage in Newborn Child. C. F. T. East.—p. 189.

**Prenatal Hygiene.**—Feldman urges that prenuptial clinics should be established where persons of both sexes can get expert advice as regards their fitness to marry, and no person knowingly suffering from syphilis should be allowed to marry; breach of such a rule should be made a penal offense. All cases of prenatal syphilis should be thoroughly supervised and treated as soon as diagnosed. Feldman also stresses the need for and value of prenatal hygiene and care. All expectant mothers should, as far as possible, refrain from using alcohol (at any rate in excess) or excessive smoking throughout pregnancy. They should be protected from exposure to infectious disease or dangerous industries, such as lead, phosphorus or tobacco factories. Attention to the teeth, bowels and kidney functions is of great importance during pregnancy. Careful watch should be kept of the relative size of the fetus and the maternal pelvis, and any abnormal presentation should be converted into a vertex presentation before labor. Antenatal wards or beds should be provided in connection with all antenatal clinics for the purpose of treating abnormalities of pregnancy, as well as for the purpose of carrying out properly directed and well coordinated biochemical, pathologic and statistical research.

**Primary Purpura in Children.**—Ten cases of idiopathic or primary purpura are analyzed by Poynton et al. They are divided into three groups: (1) purpura hemorrhagica; (2) Henoch's purpura, and (3) cases in which there were subcutaneous hemorrhages with little or no constitutional disturbance. The onset of the purpura was always sudden, but the duration varied; some of the children had repeated attacks and were for years never free of some hemorrhage. It would appear from this study that the essential point in the purpura formation is not the diminution of blood platelets, but some poison acting on the vital capillary walls, damaging their integrity. The prognosis in the simple cases was good, but two fulminating examples of purpura hemorrhagica were both rapidly fatal. The cases of the Henoch type showed the well known tendency to recurrence, and dragged on for some years. Treatment was unsatisfactory, apart from rest.

**Pel-Ebstein Type of Hodgkin's Disease.**—The characteristic features of the illness in the case cited by Cautley, occurring in a girl, aged 8, were: a prolonged local stage of glandular hyperplasia in the neck and a generalized stage of pyrexia, which assumed a relapsing type, severe and progressive anemia, a yellowish-gray tint of the skin, enlargement of the cervical glands, liver and spleen, slight bronchitic attacks with breathlessness, sometimes semidelirium, erythropenia and leukopenia, and a fatal issue. There was no evidence of tuberculosis—an alternative diagnosis—and the Pirquet reaction was negative. Treatment proved unavailing. Permission to hold a necropsy was not granted.

### British Medical Journal, London

Dec. 30, 1922, 2, No. 3235

- Clinical Significance and Treatment of Heterophoria. A. S. Percival.—p. 1249.  
\*Case of Ophthalmic Migraine with Unusual Symptoms. A. R. Moodie.—p. 1256.  
Education of Partially Blind Children in Myope Classes. H. W. Thomson.—p. 1257.  
\*Relation of Optic Nerve to Sphenoidal and Posterior Ethmoidal Sinuses. G. Young.—p. 1258.  
Ophthalmic Progress in Egypt. A. F. MacCallan.—p. 1259.  
\*Cerebrospinal Fluid in Disease of Fundus. W. J. W. Ferguson.—p. 1259.  
Monocular and Binocular Vision. T. S. Barrie.—p. 1260.  
"Open" Treatment in Eye Operations. W. B. I. Pollock.—p. 1262.  
Review of Work of Venereal Diseases Center of Glasgow Eye Infirmary. E. J. Primrose.—p. 1263.  
Conjunctivitis Artefacta. H. Caiger.—p. 1264.

**Ophthalmic Migraine with Unusual Symptoms.**—The case reported by Moodie is one of the ophthalmic type of migraine, with scintillating scotoma. It was associated with epileptic convulsions. The Wassermann test was negative.

**Relation of Optic Nerve to Sphenoidal and Posterior Ethmoidal Sinuses.**—Young examined by dissection the sphenoidal sinuses in thirty subjects. In twenty-seven cases the bone between the nerve and the sinus was so thin, in at least part of its course, that the suture was easily apparent through it. In four specimens there was actually a hiatus in the bone covering the nerve, while in one of these specimens there was more hiatus than bone in the posterosuperior and lateral walls of the sinus—so much absorption had taken place. With regard to the relative size of the sphenoidal sinuses, the intersinus septum was markedly deflected in many cases, making one sinus much larger than the other. This difference in size was sometimes so great that the larger sinus was found to be in relation to the heterolateral optic nerve or cavernous sinus, or both. The actual figures were, that in thirteen cases the sphenoidal sinus of one side was in relation to the heterolateral cavernous sinus, and in nine cases the sphenoidal sinus was in relation to the heterolateral optic nerve. The sclerotic type of sinus was in a very small minority, three cases being in this category, the walls of the remaining twenty-seven being very thin. Ostia in the bone were very commonly found in the lateral wall of the sphenoidal and ethmoidal masses, the boundary between the nose and the orbit. These led into the sinuses, giving passage to numerous blood vessels. Numerous blood vessels were noted occupying these ostia as the lining membrane was stripped from the nasal wall of the orbit. Young believes these facts may be applied to support the clinical evidence that optic neuritis may arise from diseased postnasal sinuses.

**Cerebrospinal Fluid Worthy of Investigation.**—In Ferguson's opinion the condition of the cerebrospinal fluid would be worthy of investigation in a large group of cases, in particular those of young adults suffering from diplopia, optic atrophy, or retrobulbar neuritis. The colloidal gold reaction, he thinks, is of undoubted value as indicating the first definite sign of organic disease of the central nervous system. Additionally, it may enable one to say whether a transient diplopia is or is not purely functional, and may help to differentiate cases of retrobulbar neuritis and optic atrophy, indicating those in which the condition is part of a more general nervous disorder, and more especially those which may be followed after a considerable period by disseminated sclerosis.

### Indian Medical Gazette, Calcutta

December, 1922, 57, No. 12

- Therapeutics of Cinchona Alkaloids. R. N. Chopra.—p. 441.  
Analysis of Clinical Picture in Kala-Azar. L. E. Napier.—p. 446.  
\*Exceptional Hernias. J. W. Wanless.—p. 452.  
Ether In Tropics: Pinson's Apparatus. A. Hootan.—p. 455.  
Relapsing Fever in Bhavnagar. B. N. Mehta.—p. 456.  
Foreign Body (Fish) in Air Passages, Removed by Laryngotracheotomy. Maung Po Pe.—p. 457.  
\*Case of Traumatic Aneurysm of Spleen. W. L. Harnett.—p. 457.  
One Hundred and Seventy-Nine Cases of Ancylostomiasis Treated with Chenopodium in Penang. D. C. Richards.—p. 460.  
Case of Congenital Absence of Spleen. R. S. Grewal.—p. 461.  
Case of Tetanus. H. R. Wadhvani.—p. 462.  
Case of Cataract in a Child Following Lightning Stroke. W. V. Copping.—p. 462.  
Cases Treated with Electrolytic Chlorogen (E. C.) at the Pusa Hospital. Michael.—p. 463.



**Points of Importance in Performing Herniotomy.**—Emphasis is laid on three points by Wanless which he says should always be borne in mind in operations for the radical cure of inguinal hernia, namely: (1) indirect hernias are seldom scrotal; (2) the bladder is often in contact with or occasionally within the sac of an indirect hernia and liable to injury in dissection; (3) in indirect hernias a double sac frequently exists with the bladder fundus in close contact with the lower one and therefore also liable to injury or inclusion by sutures in making the plastic closure. This is particularly the case when there is a weak or attenuated conjoined tendon.

**Traumatic Aneurysm of Spleen.**—The case related by Harnett is one in which the aneurysm developed slowly and no treatment was sought until nearly three years after the injury which caused the trouble. The man had fallen between an engine and the station platform but managed to extricate himself, though the abdomen was so severely contused that he was laid up for a month after this accident. For the last six months he had suffered from attacks of pain in the left iliac fossa, lasting about half an hour and passing off gradually. The attacks came on quite suddenly at regular intervals and were not related to taking food. They were of a griping character and he felt nauseated, but did not actually vomit during the seizures. He was quite well between the attacks; the bowels were rather constipated and there were no urinary symptoms. There was an oval, freely mobile tumor, measuring about 4 by 2 inches, in the left iliac fossa. On the outer side of the tumor a blunt edge could be felt, toward the lower extremity of which was a notch. The tumor was firm, elastic, dull on percussion and not tender. It could be moved freely in the left half of the abdomen, down into the left iliac fossa and across as far as the middle line. It could be replaced under the left lower ribs and once placed there could only be extruded again by the patient sitting up. Handling the tumor did not cause any pain. The other abdominal organs were normal. The patient stated that the tumor sometimes disappeared for a few days and then suddenly reappeared. No splenic dulness could be percussed when the tumor was free in the abdomen, but impairment of resonance could be demonstrated when the tumor was replaced under the ribs. The swelling proved to be the spleen, enlarged to about twice its normal size and having attached to its inner aspect a cystic, thin walled, fluctuating swelling, of a yellowish-white color, incorporated with and appearing to protrude from the splenic substance. The swelling, which was about the size of a tangerine orange, was too intimately incorporated with the spleen to admit of excision; so splenectomy was decided on. The case appears to have been one of what was originally a hematoma of the spleen, probably sustained at the time of abdominal injury three years previously. The abdominal injury appears to have caused rupture of a splenic blood vessel which led to the subsequent formation of the false aneurysm.

### International Journal of Psycho-Analysis, London

December, 1922, 3, No. 4

- Study of Artistic Preference. J. Varendonck.—p. 409.  
Tobacco and the Individual. A. A. Brill.—p. 430.  
Prenatal Psychisms and Mystical Pantheism. T. Schroeder.—p. 445.  
Rescue and Murder of Father in Neurotic Phantasies. K. Abraham.—p. 467.  
Tobacco. E. Hiller.—p. 475.  
Tongue. D. Bryan.—p. 481.

### Lancet, London

Dec. 30, 1922, 2, No. 5183

- \*Hypersthenic Gastric Diathesis, and Pathology, Prophylaxis and Treatment of Duodenal Ulcer. A. F. Hurst.—p. 1369.  
Emetin Bismuthous Iodid in Treatment of Amebiasis. P. M. Rennie.—p. 1374.  
\*Syphilis of Lung. W. T. Munro.—p. 1376.  
\*Serologic Classification of Staphylococci. T. G. M. Hine.—p. 1380.  
\*Three Thoracic Emergencies. G. A. Stephens.—p. 1382.  
Case of Pott's Disease Associated with Injury. F. B. Hobbs.—p. 1383.  
Case of Oral Scpsis. G. Steele-Perkins.—p. 1383.

**Hypersthenic Gastric Diathesis; Duodenal Ulcer.**—Hurst is convinced that duodenal ulcer should still be regarded as a medical and not a surgical disease. Recognition of the diathesis, which predisposes to it, and of the primary and accessory

exciting causes which lead to its actual development, should encourage medical men to think more of its prevention than its cure; even if they are only consulted when it is too late to talk of prevention. They should no longer remain content with the treatment of the active ulcer, but should regard the prevention of recurrence as a matter of equal importance.

**Syphilis of Lung.**—In order to determine the incidence of syphilis among a presumably tuberculous population, a Wassermann reaction has been done by Munro on all admissions to a sanatorium. Of the first 100 persons examined, 6 per cent. had syphilis of the lungs; 11 per cent. had a positive Wassermann reaction and tubercle sputum plus; 3 per cent. had tuberculosis, with Wassermann reaction positive and tubercle sputum minus; 2 per cent. had positive Wassermann reaction with diagnosis other than tuberculosis. Acquired syphilis of the lung may occur in three conditions: (1) gummas; (2) fibroid induration; (3) areas of consolidation and catarrh. Fibroid induration is the most common. In these six cases analyzed the initial lesion appeared to be at the right base. No patient of this type was under 35 years of age. The shortest time between infection by the spirochete and symptoms referable to the chest was three and a half years. Antisyphilitic treatment in the early stages is recommended by Munro but when bronchiectasis is well established he says, treatment is not likely to lead to improvement. Two cases of focal disease were found. Both patients improved on treatment.

**Serologic Classification of Staphylococci.**—Hine contends that there are two main groups of staphylococci: Group I being pyogenic and almost always forming acid with mannite, while Group II resembles the so-called *S. epidermidis-albus*, usually failing to make acid in mannite broth and generally forming white colonies. The first group contains, at least, three serologic types, of which Type I is the most common, representing 90 per cent. of the examples of the group. The second group (resembling the old *S. epidermidis-albus*) contains two serologic types, the second of which was not so common in Hine's series as the first, and appears also to have some pathogenic properties; the group is more irregular in its biochemical and chromogenic qualities than the first or pyogenic group.

**Enlarged Thymus; Ruptured Heart; Ruptured Superior Vena Cava.**—A man, aged 25, discharged "fit" from the army, collapsed when at work and expired immediately. Post-mortem examination showed all the organs to be healthy save two—namely, the cardiac apparatus, in which the intrapericardial pressure was atmospheric, and the thymus, which was 9 inches long, extending downward over the pericardium. There was no evidence of injury or of inflammation. Another case cited by Stephens is that of a boy, aged 16, who was standing near a crane from which was suspended a heavy steel tube. As the tube was lowered it pressed against his chest and abdomen; he then stepped back a few paces and fell down dead. Postmortem examination showed that the intrapericardial pressure was atmospheric, and on opening the sac it was found to be full of blood. In the right auricle was a tear 1 inch long. A man, aged 42, was found dead in a cellar into which he had fallen through a manhole. Post-mortem examination showed the sternum to be fractured at the sternal angle. On opening the chest a marked extravasation of blood was found behind the seat of the fracture due to a tear in the superior vena cava.

### Medical Journal of Australia, Sydney

Dec. 2, 1922, 2, No. 23

- Obstetric Experiences During Fifteen Years of General Practice. H. Gilbert.—p. 631.  
Value of Complement Fixation Reaction in Gonococcal Infections. A. S. Walker.—p. 634.  
Rectovaginal Adenomyoma with Chronic Endometritis. A. N. Krakowsky.—p. 642.

Dec. 9, 1922, 2, No. 24

- \*Hemangioma (Endothelioma) of Breast, etc. B. T. Edye.—p. 663.  
Asthma. G. C. Willcocks.—p. 668.  
\*Unusual Kidney. T. K. Potts.—p. 670.  
Case of Hydatid of Lung. W. A. R. Sharp.—p. 671.  
Antistreptococcal Serum in Puerperal Infection. W. Upton.—p. 672.  
Puerperal Septicemia Treated with Blood Transfusion. H. Leaver.—p. 673.



**Multilocular Cystadenoma of Retroperitoneal Origin.**—Edey reports one case each of hemangioma (endothelioma) of the breast; tumor of the carotid body, and multilocular cystadenoma of retroperitoneal origin. Microscopically, the cysts in the third case were seen to be lined by papillary processes covered by columnar cells; an arrangement similar to that observed in some cystadenomas of the ovary. Many of the cells were separating and becoming rounded in shape. In the solid portions the tumor had assumed malignant characters. The cells were spherical or oval and were supported in a papillary manner by a scanty stroma with delicate capillaries.

**Fibrotic Type of Kidney Tuberculosis.**—With a wholly negative previous history Potts' patient, aged 42, had a sudden attack of pain in the left kidney region which persisted for one week and ceased suddenly. The pain was not very severe, did not radiate along the course of the ureter and was not accompanied by vomiting or any disturbance of micturition. The patient remained well for the next six months and then had a similar attack, except that it lasted only twenty-four hours, but was more severe. During the first five months of this year she had similar mild attacks at intervals of from two to three weeks, lasting on an average about twenty-four hours. The roentgen-ray report was negative as was also the analysis of the urine. The kidney was exposed and removed. The kidney surface was studded with whitish nodules which were numerous in three sectors of the cortex, one at each pole and one in the center. Under the microscope these nodules were found to be fibrocellular in structure, with a few scattered and imperfectly developed giant cells, suggesting a fibrotic type of tuberculous infection, which is unusual in the kidney. Nodules of similar structure were also found in the kidney substance close up to the renal pelvis, but the nodules there were much fewer than in the cortex. The renal pelvis itself was not obviously involved. Sections stained by the Ziehl-Neelsen method failed to reveal tubercle bacilli. In Potts' opinion, the infection is tuberculous, but of a type rare in the kidney.

### Archives Franco-Belges de Chirurgie, Brussels

August, 1922, 25, No. 11

- Dermoid Cyst of the Anterior Mediastinum. E. Moons.—p. 959.  
Regional Anesthesia of Neck and Arm. Brunin and Vandeput.—p. 965.  
Metal Aids in Fractures and Pseudarthrosis. Charbonnel.—p. 994.  
Primary Resection of Astragalus and Malleolus. G. Miginiac.—p. 1005.  
\*Experimental Research on Snake Bites. G. Bolognesi.—p. 1010.  
Spina Bifida Occulta. H. J. J. Blauwkuip.—p. 1018.  
The Albee Graft and Pott's Disease in Adults. F. Lambrechts.—p. 1023. Idem. Moreau.—p. 1030.  
The Albee Implant in Children. Marique.—p. 1027.

**Experimental Research on Snake Bites.**—Bolognesi experimented on rabbits with snake venom, either by direct bite from the reptile or through inoculation in the hind legs. He states that the aim of his study was to attract attention to the local histopathologic findings, which, he says, have not yet been described on the basis of systematic experimental research. The lesions explain the local clinical syndrome of patients bitten by venomous reptiles. He remarks that Phisalix has studied mainly the effect of snake venom on the nervous system, the heart and circulation, respiration, blood and temperature, while Houssay and Sordelli have devoted attention mainly to the coagulation of the blood.

### Archives des Maladies du Cœur, Paris

November, 1922, 15, No. 11

- \*Therapeutic Use of Physostigmin. J. de Meyer.—p. 749.  
Auricular Extrasystole with Paroxysmal Tachycardia. L. Gallavardin.—p. 774.  
\*Basophilic Inclusions in Neutrophils. J. Sabrazès.—p. 778.

**Therapeutic Use of Physostigmin.**—De Meyer used physostigmin sulphate partly by the mouth (1 to 1.5 mg. per day or 10 drops of a solution of 3 cg. ( $\frac{1}{2}$  grain) in 30 c.c. of water two or three times daily), and partly by intravenous injections of 0.5 to 1 mg. in 2 c.c. of water. It is important to make the injections as far from the meals as possible, as 1 mg. may produce vomiting. The results were very good in simple and thyrogenous tachycardia. Combination with strophanthus had a marked effect on sino-auricular paroxysmal tachycardia, but less of an influence on ventricular

tachycardia. Auricular fibrillation was so well influenced that he preferred it in some cases to digitalis. Cases which are refractory to quinidin should be treated with physostigmin. Respiratory arrhythmia disappears after physostigmin, and since its action seems to consist exclusively in a stimulation of the autonomic system, it could replace, to advantage, the oculocardiac test. Tachycardias due to hypertension or hypotension, aortitis, nephritis or toxic conditions are not suitable for this medication.

**Basophilic Inclusions in Neutrophils.**—Sabrazès dissolves 0.5 gm. of toluidin blue in 10 c.c. of 95 per cent. alcohol and adds 90 c.c. of 3 per cent. aqueous solution of phenol. The dry, unfixed smears treated with this solution show the basophil inclusions in the neutrophils in a grayish blue color.

### Archives de Médecine des Enfants, Paris

December, 1922, 25, No. 12

- \*Local and Spinal Anesthesia in Children. II. L. Rocher.—p. 705.  
\*Acquired Chronic Hydrocephalus. J. C. Navarro et al.—p. 720.

**Local and Spinal Anesthesia in Children.**—Rocher uses a solution of 1:300 of cocain in Hayem's fluid with addition of epinephrin for local and regional anesthesia, and procain for spinal anesthesia. Cocain is well tolerated by children, and it can and should be employed for local and regional anesthesia. Spinal anesthesia with procain has been used by Rocher in 125 children from 4 to 15 years old without any accident.

**Acquired Chronic Hydrocephalus.**—Navarro, Beretervide and Garrahan publish thirteen cases, and review of acquired hydrocephalus. The etiology is almost always syphilitic, and the treatment should be energetic. Lumbar puncture must be made periodically to relieve the tension of the fluid. The results are sometimes excellent.

### Bulletin de l'Académie de Médecine, Paris

Dec. 5, 1922, 88, No. 40

- \*Public Health in the United States. L. Bernard.—p. 378.  
\*Levulose in Diabetes. M. Labbé.—p. 393.  
\*Osteoperiosteal Grafts. H. Delagenière.—p. 396.  
France's Consumption of Cereals. L. Lapique.—p. 417.  
\*Blood Crisis After Ligature of an Extremity. J. Le Calvé.—p. 422.  
\*Law on the Mentally Defective. J. Roubinovitch and E. Debray.—p. 424.

**Public Health in the United States.**—This report by Bernard was summarized in the Paris Letter in THE JOURNAL, January 13, p. 122.

**Levulose in Diabetes: Acidosis from Inanition and from Diabetes.**—Labbé admits that glucose is less well burned than other carbohydrates, but finds that nothing proves that levulose is better utilized than other carbohydrates, including starch. The tests by oral ingestion depend on the rapidity of absorption. Therefore, small repeated doses are better tolerated than large ones. Labbé maintains that the acidosis arising in healthy persons from lack of carbohydrates is fundamentally different from the acidosis of severe diabetes. One can even produce a benign acidosis in light cases of diabetes. It disappears with the ingestion of carbohydrates. This acidosis is never as high as that of real diabetes. The largest amount of acetone bodies observed in fasting healthy persons was less than 19 gm., while 100 gm. of acetone bodies are not uncommon in severe diabetes. He found once as much as 247 gm. in a day. The inanition acidosis is a pure ketosis: The excretion of ammonia is only slightly increased, and there is no greater excretion of amino-acids nor of other organic acids except aceto-acetic and beta-oxybutyric. In the urine in diabetic acidosis there is much ammonia and amino-acids and many other organic acids (butyric, acetic, lactic, propionic, etc.). The addition of carbohydrates to the diet reduces inanition acidosis, but Labbé never saw a diabetic acidosis disappear after addition of carbohydrates.

**Osteoperiosteal Grafts.**—Delagenière's method consists in transplantation of a piece of periosteum and underlying bone, from 2 to 3 mm. thick. He takes the graft from the inner aspect of the patient's tibia, and uses care to bring it into good contact with living tissue. Scars or sclerotic tissue should be resected, although even in them the graft takes, but not as well, and less rapidly. Immobilization is necessary. In two or three weeks a soft callus forms which becomes



solid in two or three months. Even grafts which become contaminated usually take, at least partially, and may give good results. He describes the technic in different typical operations (cranioplasty, pseudarthrosis, etc.). His experience extends over 296 cases.

**Blood Crisis After Constriction of an Extremity.**—Calvé observed typical hemoclastic crises in some patients after constriction of an extremity. He used the method clinically to preserve against shock (injection of serum, colloidal metals, arsphenamin). For this purpose it is recommended to make the constriction ten to fifteen minutes before the injection. It has also a desensitizing effect. If an extremity is constricted each morning for ten minutes, good results may be obtained in alimentary intolerance, angioneurosis, migraine, asthma and perhaps in epilepsy.

**Law on Social Adaptation of the Mentally Backward.**—Roubinovitch and Debray report very favorably on the results of this law. The patients earn as much as an average worker of their class. Although admitting that agriculture is to be preferred, the authors quote Rocher's observation that defectives from towns suffer in the country from nostalgia. They believe that the facultative law of 1909 has proved beneficial, and it should be made compulsory for these *arriérés perfectibles*.

### Encéphale, Paris

November, 1922, 17, No. 9

- Origin and Nature of Hallucinations. E. Bleuler.—p. 537.  
\*Pituitary Tumor. P. Sainton and E. Schulmann.—p. 554.  
\*Bilateral Pontine Syndrome. Dide and Peytou.—p. 563.  
\*Cerebrospinal Fluid in General Paresis. R. Targowla.—p. 567.  
Essential Bases for a Reform of Psychiatry. R. Mourgue.—p. 570.

**Case of Pituitary Tumor of Fourteen Years' Standing.**—Sainton and Schulmann describe an unusual case of epithelioma of the anterior lobe of the pituitary. The patient was kept alive for fourteen years by roengen-ray treatment.

**Bilateral Posterior Pontine Syndrome.**—Dide and Peytou report the clinical findings in the unique case of a bilateral lesion of the posterior part of the pons. It started possibly as an encephalitis in childhood, and the 37 years old patient had a complete loss of lateral movements of the eyes, asynergy, and tremors of the head and extremities, normal sensibility except for impaired hearing on the right side, and an infantile state of mind.

**Reaction of Cerebrospinal fluid with Paregoric in General Paresis.**—Targowla mixes 5 drops of distilled water, 15 drops of cerebrospinal fluid, and 15 drops of paregoric. In a control tube the cerebrospinal fluid is replaced by distilled water. The total precipitation is noted as three plus, a partial by two plus, and a feeble by one plus. He examined eighty-eight fluids from sixty-five patients with general paresis; eighty-four fluids (sixty-three patients) were positive. In one case the reaction was positive in spite of a negative Wassermann reaction and negative benzoin test. One of the negative results turned positive at a second trial. Three other negative patients were in a state of prolonged remission, with very feeble reactions to other tests.

### Gynécologie et Obstétrique, Paris

November, 1922, 6, No. 5

- \*Constitution and Uterine Myomas. A. Rosner.—p. 305.  
\*Inversion of Uterus During Childbirth. Dantin.—p. 310.  
\*Otitis Media in the New-Born. Mahu and E. Chomé.—p. 313.  
Bilateral Tubal Pregnancy. Z. do Amaral.—p. 319.  
Uteroparietal Fistula After Cesarean Section. R. Loicq.—p. 322.  
\*Autohemotherapy in Pregnancy Dermatitis. E. Lévy-Solal.—p. 330.

**Localization of Uterine Myomas and Constitution of Sexual Organs.**—Rosner examined 340 cases of myomas: 107 submucous and 283 interstitial or subperitoneal. All the women with submucous myomas had a normal or strong constitution. Not one was infantile, hypoplastic or masculine. Only 10 per cent. of them were sterile. Fully 60 per cent. of the women with subperitoneal myomas were constitutionally defective, and 73 per cent. were sterile.

**Case of Acute Uterine Inversion in Delivery.**—Dantin reports a fatal case of uterine inversion. It was caused by the midwife who tried to extract the placenta by traction on the cord immediately after delivery.

**Middle Ear Infections in the New-Born.**—Mahu and Chomé report a case of otitis media in a new-born child infected during a prolonged delivery. The infection probably occurred during inspiration or a swallowing movement. They emphasize Renaud's findings of otitis in every one of his seventy necropsies in infants. They recommend instillation of a few drops of an antiseptic in the nose, especially when delivery is prolonged in infected cases.

**Autohemotherapy in Dermatitis of Pregnancy.**—Lévy-Solal publishes four cases of different dermatoses of pregnancy, three of which were cured and one (psoriasis) ameliorated by injections of the patient's own blood. In one case of urticaria the second injection increased the itching very strongly, but it subsided after the third injection.

### Journal de Médecine de Bordeaux

Oct. 25, 1922, 94, No. 20

- \*Diagnosis of Ascites by Percussion. G. Chavannaz.—p. 667.  
Constipation in Nurslings. J. Boissérie-Lacroix.—p. 668.  
Medicine and Aviation. R. Cruchet.—p. 673.

**To Aid Percussion in Diagnosis of Ascites.**—Chavannaz applies percussion when the trunk is bent, and twists the body on its transverse rather than on its longitudinal, axis. In twenty years of experience he has found this instructive in difficult cases.

### Médecine, Paris

November, 1922, 4, No. 2

- Syphilis and Dermatology in 1922. H. Gougerot.—p. 85.  
\*Myopathies Due to Hereditary Syphilis. E. Jeanselme.—p. 96.  
\*Treatment of General Paresis. J. A. Sicard.—p. 102.  
\*Early Diagnosis of Syphilitic Chancre. L. Hudelo.—p. 107.  
\*Lilac Arch on Nails in Syphilis. G. Milian.—p. 112.  
\*Treatment of Syphilis Before the Chancre. L. Spillmann.—p. 114.  
\*Abortive Treatment of Syphilis. Levy-Bing and Gerbay.—p. 119.  
\*Syphilitic Origin of Diabetes. M. Pinard.—p. 123.  
Acquired Syphilis in Children. P. Fernet.—p. 125.  
Salts of Bismuth. M. Pomaret.—p. 130.  
\*Mixed Affections of Skin. L. Brocq.—p. 132.  
\*Scar-Forming Affections of Scalp. R. Sabouraud.—p. 138.  
Autohemotherapy in Dermatology. J. Nicolas et al.—p. 147.  
Incomplete Forms of Mycosis Fungoides. Louste.—p. 150.

**Progressive Myopathies Due to Hereditary Syphilis.**—Jeanselme presents the first clinically well studied case of a primary dystrophy of muscles of the Leyden-Moebius type (affection of spinal cord excluded by electric reactions) in a young man with a weak positive Wassermann reaction. His father is a syphilitic. Jeanselme assumes that syphilis can influence the muscular system like other organs, and does not discuss the possibility of a coincidence.

**Treatment of General Paresis.**—Sicard discusses the reasons for the resistance of spirochetes in general paresis, and sees the only way to change it is in drawing the spirochetes from the brain into the general circulation. One of these methods consists in a series of shocks provided by injections of horse serum during the course of arsphenamin treatment. Some good results were obtained by him with this method. Some hopes are attached to his other method: injections of arsphenamin and similar products in an ether narcosis. Possibility of using heroic surgical proceedings is suggested—perhaps craniectomy, to transform the circulation in the brain—because he believes that any therapeutic method which looks sensible is justified in an established general paresis.

**Early Diagnosis of Syphilitic Chancre.**—Hudelo emphasizes the importance of early recognition of syphilis for the abortive treatment. In every case of soft chancre one should suspect syphilis. The seroreaction is necessarily negative in this stage (except for some possibilities with the use of serum from the lesion), but the presence of spirochetes is decisive, and should be looked for every day or two; by 0.5 to 2 mm. deep scarifications, followed by expression of the serum. The border between the lesion and the healthy skin may be crowded with spirochetes. The diagnosis before the tenth day of the disease should be the rule, not the rare exception.

**Lilac Arch on Nails in Syphilis.**—Milian finds that older syphilitics have on some fingers an arch 0.5 to 1 mm. broad, lilac colored, about 4 to 5 mm. behind the free border of the nail and parallel with it. The outer border is well defined, and sometimes there is a white zone. He says it is a living witness to active syphilis, inherited or acquired.



**Treatment of Syphilis Before the Appearance of Chancre.**—Spillmann discusses a case of a syphilitic soldier on furlough who had sexual intercourse with his wife. He recommends to start the treatment if one can prove the sexual contact with a person presenting contagious lesions. A mere positive Wassermann reaction in the partner is not a sufficient indication. He warns against persons with syphilophobia.

**Abortive Treatment of Syphilis.**—Levy-Bing and Gerbay believe that abortive treatment of syphilis is possible only before the disease is generalized. Before thirty-eight days after the infection a perfect cure is not difficult. After forty-five days it is usually impossible.

**Syphilitic Origin of Diabetes.**—Pinard had among twenty-three diabetics, eleven with acquired and five with probable hereditary syphilis. He believes that many of the complications of diabetes (loss of reflexes, mal perforant, neuritis, so-called pseudotabes) are in reality manifestations of syphilis. He believes that the same explanation can be given in conjugal and familial diabetes. He rates the syphilitic etiology at 80 to 90 per cent. of diabetics.

**Mixed Affections of Skin.**—Brocq exposes a new class of affections of skin which he calls *dermatoses complexes*. It is not a mere complication, like pyoderma in scabies. Brocq's new class gives the impression, from the start, of being a simple affection, but is formed in reality by an intimate mixture of two or more affections. Many therapeutic failures can be explained by overlooking this. A lupus mixed with syphilis may present the appearance of simple lupus. In other cases lupus may be associated with phagedenism which can be influenced by hot air, methylene blue, etc. Other complex dermatoses can result from two different cutaneous reactions, for example, urticaria in a papulo-vesicular eczema. Others may be due to a mixture of a real disease with a cutaneous reaction; parasitic affections of the skin can be hidden by eczema or parakeratosis. The physician who does not recognize both factors makes the mistake either of paying attention only to the eczematous reaction, which he cannot heal, or he tries to treat the infection too energetically, and irritates the eczema. Many dermatoses, like psoriasis, are favorably influenced by different remedies, changing according to the actual state of the patient. One should never despair.

**Diagnosis of Scar-Forming Affections of Scalp.**—Sabouraud gives an instructive paper on these diseases. The exact distinction is important for the treatment. In favus one never should forget to examine the hair around the scar for parasites which may persist for a long time. Impetigo may lead to formation of scars if it is neglected. The scar following a sycosis capillitii resembles the favus scar, but it presents, as long as the disease lasts, new attacks of purulent folliculitis at the edges, while favus is always quiet and torpid. A similar disease due to infection of single follicles by staphylococci is usually overlooked, until the little scars and alopecia appear, because the infection does not cause violent reactions. Acne of the neck can last for years, advance slowly, and may leave a scar of the size of the palm. Yet it could have been cured by epilation and ointments containing sulphur. When erythematous lupus attacks the scalp, it always causes from the very start alopecia, and it progresses towards a complete atrophy of the skin. It progresses by a few spots of different size, resembling a geographic map, forming sometimes islands. The border is always red. Carbon dioxid snow and infrared rays give good therapeutic results.

#### Presse Médicale, Paris

Dec. 6, 1922, 30, No. 97

- \*Provocation of Angiospasm. A. Thomas.—p. 1049.  
Dysenteriform Enteritis by Amoeba Coli. Orticoni and Gazzola.—p. 1052.  
Experiments on Hydrocephalus. A. Chiasserini.—p. 1053.

**Provocation of Angiospasm in Arteritis and Intermittent Claudication.**—Thomas was able to produce spasms of the vessels in intermittent claudication by different means. Slight massage for a few seconds made the limb extremely pale. Passive movements and pressure on the malleoli gave the same result, if the patient was reclining. If the extremity is lowered, the color returns quickly and much more effort is

necessary to induce the spasm. The extremity blanches before the claudication starts. It is remarkable that not only active and passive movements, but also pressure on the malleoli or the iliac crest, and even exposure to cold air, leading to goose-skin, may provoke the spasm. A healthy subject making quick flexions and extensions of his lower extremity differs from the pathologic only quantitatively. The extremity becomes pale, and the oscillograph may reveal smaller excursions of the pulse for a short time. The venous circulation is increased by movements of the muscles, and the arteries of untrained persons do not supply a sufficient quantity of blood; this leads to the local anemia.

#### Revue Franç. de Gynécologie et d'Obstét., Paris

November, 1922, 17, No. 11

- \*Actinotherapy in Gynecology. F. Jayle.—p. 561.  
\*Wassermann Reaction in Obstetrics. Gaujoux and Foulquier.—p. 589.

**Radiotherapy in Gynecology.**—Jayle reviews the use of radium and roentgen rays in gynecology. There is no better method than rays in cases of inoperable cancer, but surgery remains the method of choice, when possible. After-treatment with rays following an operation has given wonderful results in some cases, but Jayle gives final results and asks a careful study of the question. In uterine fibromas not influenced by pituitary extract, roentgen rays may be tried, although they are neither harmless nor infallible.

**Wassermann Reaction in Obstetrics.**—Gaujoux and Foulquier emphasize that complement fixation, valuable as it is, may be negative in cases of unquestionable syphilis.

#### Archivio Italiano di Chirurgia, Bologna

November, 1922, 6, No. 3

- \*Tumors of Carotid Gland. F. Fedeli.—p. 217.  
\*Hydatid Cyst in Spleen. O. Cignozzi.—p. 258.  
\*Treatment of Hypospadias. U. Camera.—p. 277.  
\*Peptic Ulcer of the Jejunum. R. Brancati.—p. 297.  
"Nourishment During Operations." P. Bastianelli.—p. 331.

**Tumors of the Carotid Gland.**—Fedeli illustrates the findings in a tumor removed from the bifurcation of the common carotid in a man of 59, and gives brief summaries of ninety cases in the literature. In seven the tumor was a necropsy surprise. He remarks that nearly every one who has studied these tumors has given them a different name, as there is still so much uncertainty as to the significance of the carotid body.

**Echinococcus Disease of the Spleen.**—Cignozzi found the hydatid cyst in the spleen in 4 of his 62 cases of echinococcus disease, while the liver was involved in 44. The cysts in the spleen in his cases, had a capacity of from 200 to 600 c.c. and the outline of the spleen was characteristic. The general health was good, but albumin and tube-casts were found in the urine as also in his liver cases. In both they disappeared in from four to six days after the operation. He advocates splenectomy as the only treatment; adhesions generally interfere with splenectomy in these cases, but suturing the lips of the incision to the skin answers every purpose, he adds. He gives an illustrated description of the technic for the operation, and emphasizes the necessity for plastic repair of the breach in the abdominal wall. His simple and effectual method for this was summarized in these columns June 18, 1921, p. 1803.

**Treatment of Hypospadias.**—Camera describes with illustrations what he says is a new method for correction of penoscrotal hypospadias. He applied it in the case of a boy of 13, and extols the advantages of the ample nourishment of the flap he uses, and the absence of any deep sutures, while the extensive contact of raw surfaces insures prompt healing. He diverts the urine through the perineum, and cuts out the skin over a rectangular area, like an inverted U, in the anterior surface of the scrotum. This denuded area is 3.5 cm. wide, and 2 cm. longer than the penis. A strip of skin is left intact in the center of the inverted U. The penis is then incised its entire length on each side of the urethra, and the soft parts are loosened up, the raw surface of the flaps turned back forming a broad extension of the raw surfaces on the scrotum. The rectangular area from which the epidermis has been removed in the scrotum is then cut



through the layers down to the vaginalis. This provides a thick flap with a broad peduncle at the top. This flap is then turned over upward, which brings the skin-covered stretch opposite the urethra bed, and the raw surface each side against the raw surface of the penis side flaps. The skin-covered stretch fits over a sound introduced through the hypospadias opening and perineal fistula. To keep this skin-covered stretch in place, to form the new urethra, four stitches are taken on each side to suture it to the fascia of the penis on each side of the sound. He gives further an illustration of a little cork splint, a kind of frame, which fits over the new urethra in its entire length, and holds everything in place during the healing process.

**Genesis of Peptic Postoperative Ulcers.**—Brancati states that a peptic ulcer developed in 5 of 10 dogs after resection of the pylorus and part of the stomach. The findings in 90 animals after various operations on the stomach are analyzed. They demonstrate beyond question, he says, that peptic ulcers are invited by removal of the prepyloric portion of the stomach and by dysfunction of the loop of the bowel connected with the pancreas and biliary system. The gastric juice altered in its composition, or not sufficiently modified by the pancreatic juice and bile, or abnormal from both these factors combined corrodes the wall of the jejunum.

### Revista Española de Medicina y Cirugía, Barcelona

November, 1922, 5, No. 53

\*Vaccination Against Typhoid. F. Gallart Monés.—p. 627.

Face Presentation. J. Ruiz-Contreras.—p. 633.

\*Cesarean Section in Infected Cases. F. Proubasta.—p. 639.

Spinal Anesthesia. E. Matons.—p. 643.

Modern Drugs of Vegetable Origin. F. Bascompte.—p. 646.

Medicinal Melanuria. Idem.—p. 648.

**Typhoid at Barcelona.**—Gallart Monés summarizes the experiences in a number of towns in Spain in which recent epidemics of typhoid have been arrested by compulsory anti-typhoid vaccination. In several other towns many persons took advantage of the free vaccination offered. At Barcelona the typhoid death rate per thousand inhabitants has ranged from 3.641 in 1914 to 0.382 in 1921, the 272 typhoid deaths in 1921 being the smallest figure ever reached. He urges that the prophylaxis of typhoid should be enforced along the same lines as vaccination against smallpox.

**Porro's Operation.**—Proubasta expatiates on the supreme recourse at our disposal in Porro's operation, even in the most deplorable conditions of dystocia and infection. He makes a point of severing the vascular pedicles of the uterus; this allows more thorough packing with gauze to protect the peritoneum. To reduce the shock as much as possible, he partly sutures the abdominal incision as soon as the uterus is drawn out, without waiting further. In one of his cases even panhysterectomy did not remove all the foci of infection. Thrombophlebitis, pneumonia and phlegmasia alba dolens followed the Porro, with final recovery.

### Semana Médica, Buenos Aires

Sept. 21, 1922, 2, No. 38

\*Pyelolithotomy. R. Finochietto.—p. 574.

\*To Reduce Infant Mortality. P. Rueda.—p. 575.

\*Symptoms with Disease of the Kidneys. C. H. Niseggi.—p. 579.

Sexology the Mother of Eugenics. E. Accame.—p. 585.

Present Conceptions of Physical Training. V. Delfino.—p. 600.

Treatment of Tuberculosis. Gumersindo Sayago.—p. 602.

Opsonic Index in Vaccine Treatment of Tuberculosis. J. A. López.—p. 605.

\*Treatment of Varicocele. E. Ferrando.—p. 609.

Deep Roentgen-Ray Therapy. C. Heuser.—p. 612.

\*Periodic Precipitation in Biology, etc. A. L. Herrera.—p. 615.

Psychophysiology of Hearing. V. Ribón.—p. 622.

**Pyelolithotomy.**—Finochietto emphasizes the necessity for ascertaining the shape and size of the calculus before operation. Carcilli's method of insufflation of a gas around the kidney—perirenal emphysema—is of great assistance. A large branching calculus is usually broken in removal, and he makes a practice of deliberately cutting it. He uses stout shears for this, and cuts off the branch close to the main body of the calculus. This generally allows the branch and the main body to be easily extracted separately. His illustrations show the forceps grasping each half of the calculus in turn. A small supplementary slit can be made in the

kidney proper if either part of the calculus is too broad at the tip.

**Puericulture.**—Rueda was the founder of the infantorium at Rosario. He urges direct medical inspection in the home or hospital of every new-born child. He insists that medico-social efforts in this line would aid materially in reducing infant mortality.

**The Manifestations of Disease of the Urinary Apparatus.**—Niseggi recalls that the slightest derangement of kidney function is liable to cause disturbances throughout the organism, even at points remote from the urinary apparatus. On the other hand, the patient in describing his symptoms—especially pain in the lumbar region—may ascribe everything to the kidney, when in reality the kidneys may be sound. Impairment of vision and hearing, pruritus, digestive disturbance from elimination of the retained toxins through the mucosa of the alimentary tract, dyspnea from autointoxication, uremic asthma, and nervous disturbances in the eyes, the muscles, and elsewhere, are all useful in differential diagnosis. The most instructive clue is a history of some acute infection with transient nephritis or of an intoxication with lead, arsenic, phosphorus, iodoform, or from an extensive burn. Tuberculosis of the kidney may develop without pain; when present, the pain is spontaneous, irregular, and not influenced by movements. It is aggravated by eating, by the menses, by pressure on the kidney, and is relieved by lying down. Sometimes the pain takes the form of lumbar neuralgia, or kidney colic from the migration of a clot or cheesy scrap into the ureter. The diseased kidney may be free from pain while the sound kidney may be painful; the sound kidney hypertrophies, and this may be responsible for the discomfort. Niseggi describes in detail the tender points with kidney disease, and urges their differential importance; two in the back, five in front, and two in the side.

**Treatment of Varicocele.**—Ferrando describes Marenco's technic which has been applied successfully in twenty cases since 1916. The veins in the anterior bundle of the spermatic cord are resected for 3 or 4 cm., and the testicle, enclosed in its vaginalis, is drawn through a slit in the parietal layer of the serosa. The serosa is then inverted and a stout catgut thread is passed through each end of the wound. The testicle is restored to place and supported at the proper height, and the catgut is tied on each side and fastens it thus to the cellular tissue of the root of the scrotum, to Poupart's ligament, or to the rectus muscle. The testicle is thus left of good size and shape, held immovable at the proper height by a cicatricial envelop, and the stretched scrotum usually shrinks to normal size.

**Biologic Importance of Sedimentation.**—Herrera declares that rhythm, which presides over all the functions of organic life, is normal also in inorganic formation, and interests the mineralogist and the geologist as well as the biologist and physician. Sedimentation is a biologic factor which, as yet, has not been sufficiently heeded.

Nov. 9, 1922, 2, No. 45

\*Urethrotomy. J. Nin Posadas.—p. 945.

Abdominal Surgery. Jaime Salvador.—p. 947.

Pneumoperitoneum for Diagnosis of Ovarian Tumors. A. Chueco.—p. 948.

Alcoholic Cirrhosis and Psychosis in Boy Aged 5. J. M. Obarrio.—p. 951.

Protein Therapy in Infectious Diseases. M. Angel Marini.—p. 956.

Pemphigus of Mouth and Throat. R. Becco.—p. 971.

Factors in Infant Mortality. E. Accame.—p. 972.

Mechanism of Contraction of Mammalian Heart. T. Padilla.—p. 974.

Relations Between the Tonsils and the Pituitary. Lagomarsino.—p. 983.

Certain Symptoms That Yield to Ferrán's Alpha Vaccine. J. A. López.—p. 985.

**Urethrotomy.**—Nin Posada's urethrotome cuts the stricture at two opposite points; the blades are sharp on both edges. He has not had menacing hemorrhage in its use, except in two cases, one of them hemophilic.

### Siglo Médico, Madrid

Dec. 9, 1922, 70, No. 3600

Means to Combat Infant Mortality. Martínez Vargas.—p. 557.

\*Epinephrin in Treatment of Burns. Arsenio Plaza.—p. 560.

Anthrax in a Diabetic. Carlos A. Vago.—p. 562.

The Diagnosis and Prognosis in Pediatrics. Suñer.—p. 565.



**Epinephrin in Treatment of Burns.**—Plaza expatiates on the advantages of giving epinephrin systematically to tide patients with severe burns over the period of nervous shock. In the three cases he describes, the benefit was pronounced. When the epinephrin was suspended, the condition grew worse, and improved again on its resumption.

Dec. 16, 1922, 70, No. 3601

\*Brain Traversed by Bullet. C. Juarros.—p. 581. Cont'd.  
Case of Agoraphobia in a Girl. B. Gil y Ortega.—p. 584.

**Syndrome from Injury of the Centrum Ovale.**—The bullet had traversed the brain, passing horizontally through the left frontal and emerging through the left parietal bone. Disturbance in speech, which resembled the scanning speech of multiple sclerosis, and slight paresis of the entire right side were associated with reduction of the power of association and thought.

### Beiträge zur klinischen Chirurgie, Tübingen

1922, 127, No. 3

- \*Calvé-Legg-Perthes' Disease. G. Perthes and G. Welsch.—p. 477.
- \*Recurrence of Goiter. Enderlen and Hitzler.—p. 526.
- Dissecting Osteochondritis of Knee. E. Roesner.—p. 537.
- Chorio-Epithelioma. E. Forster.—p. 562.
- Malignant Chordomas. Linck and Warstat.—p. 612.
- Tumors from Aberrant Mammary Gland Tissue. Sonntag.—p. 627.
- Sensibility of Skin After Section of Nerve. L. Franz.—p. 641.
- \*Epithelium Grafting. K. Reschke.—p. 647.
- \*Spontaneous Arrest of Bleeding. H. Stegemann.—p. 657.
- \*Treatment of Defects in Dura and Skull. P. Drevermann.—p. 674.
- \*Mechanism of Acute Atony of Stomach. W. Koennecke.—p. 698.
- Malignant Lentigo. G. Kob.—p. 709.
- Synostosis of Radius and Ulna. Sonntag.—p. 716.
- Surgery in Hippocrates' Day. E. Melchior.—p. 721.

**The Calvé-Legg-Perthes' Affection of the Hip-Joint.**—Perthes here brings down to date his experience with what he calls osteochondritis detormans of the hip joint, with which his name has been connected since 1913 and Legg's since 1910. His fifty-one illustrations show the course and outcome in fourteen cases under continuous roentgen control. The course averaged four and a half years. The complete healing and excellent functioning of the joint confirm the benign nature of this osteochondral trophopathy. No appreciable benefit was manifest from immobilization or extension.

**Recurrence of Goiter.**—Statistics are given showing recurrence in 29 per cent. of 795 cases followed to date, with operative treatment of the recurrence in 9 per cent. To avoid recurrence, a change to a region free from endemic goiter might be considered. It is possible that the absence of recurrences in the records of certain surgeons may be due in part to the locality being free from endemic goiter.

**Active Epithelial Implants on Wound Surfaces by Pels-Leusden's Method.**—This is a method of grafting with a mash of epithelial particles, blood and serum scraped up from the skin after the outer layer has been scraped off. It was described in THE JOURNAL, Oct. 21, 1922, p. 1465. The epithelium in this pulpy condition is injected, with a thumb-screw syringe, under the granulations, either at scattered points or in a passage as long as the needle. The proliferating epithelium then makes its appearance in islands or strips. One great advantage of the method is that the surface does not have to be cleaned for it. The proliferation occurs regardless of the secretions covering the surface of the granulating area. A colored plate shows the aspect of a leg ulcer with eight large islands of new-formed epithelium, seven days after injection of the *epithelbrei*. Peschke adds that another advantage is the rapid healing of the area from which the epithelium mash was scraped up. It heals much faster than the defect left by a Thiersch flap, and the whole procedure takes much less time than Braun's seedling method or any other mode of promoting healing of granulating areas. The healing has been excellent even in large traumatic defects of the skin over joints, and in lining cavities in bones. It has failed only in three instances; one was a burn on the sole, and one a defect after removal of a sarcoma of the thigh that had been given intensive roentgen-ray treatment.

**Arrest of Bleeding in Surgery.**—Stegemann remarks that practically the same measures are used now to arrest bleeding that were used by Celsus and Galen. Recent research has demonstrated that the active contraction of the injured

capillaries or other blood vessels is an important factor in hemostasis.

**Treatment of Defects in Dura and Skull.**—Drevermann reviews the experiences in Lexer's service with various substances to cover a gap in the dura and skull. In 24 of the total 60 cases the interval since has been less than three years. In 30 of the others, a loose flap of fat was used to close the gap in the dura. In the 13 cases with already developed epilepsy, the seizures persisted unmodified in all but a group of 6, in which 5 were cured and one materially improved. In the 17 cases in which there had been no epilepsy at the time of the operation, no attacks developed afterward except in one case. Five pages of bibliography, set solid, are appended.

**Acute Atony of the Stomach.**—Koennecke's experimental research has refuted the assumption that mechanical factors alone are responsible for the occlusion of the duodenum and acute atony of the stomach. The latter is the primary. Some disturbance in the innervation entails the atony and dilatation of the stomach. The stretched stomach then kinks the duodenum at the point where it is most firmly fastened.

### Deutsche medizinische Wochenschrift, Berlin

Dec. 8, 1922, 48, No. 49

- \*Adaptation of Research. W. His.—p. 1635.
- \*Emaciation in Diseases of Intestine. L. Kuttner.—p. 1637.
- \*Endocarditis Lenta. E. Hassencamp.—p. 1638.
- \*Cancer of Uterus. H. Küstner.—p. 1640.
- \*Blood Transfusion in Pernicious Anemia. H. Götting.—p. 1641.
- \*Treatment of Pyelitis. G. Daniel.—p. 1642.
- Diseases of Female Bladder. I. v. Büben.—p. 1643.
- \*Myxedema with Lipomatosis. F. Kisch.—p. 1644.
- \*Roentgen Ray Sickness and Cachexia. H. Hirsch.—p. 1646.
- \*Hypertension After Electric Injury. W. Pfalz.—p. 1647.
- Active Principle of Antigens in Serodiagnosis of Syphilis. E. Epstein and F. Paul.—p. 1648.
- Median Fistula of Neck. G. Takeda.—p. 1649.
- Illumination of Vagina. E. Kantorowicz.—p. 1650.
- \*Febrile Abortion. M. Henkel.—p. 1650.
- Examination of Nose. Finder.—p. 1651.
- Birth and Death Rate of Children in East Africa. R. Lurz.—p. 1652.
- Conc'n.

**Adaptation of Research to New Conditions.**—His discusses the ways to continue research in spite of new conditions.

**Loss in Weight in Diseases of the Intestine.**—Kuttner warns physicians against making the diagnosis of tuberculosis of the intestine too lightly. The symptoms may be due to inflammatory diseases, for instance a chronic dysentery with insidious onset, or to functional troubles. Achylia gastrica leads to nutritional disturbances only when the stomach is obstructed, or when the intestine does not work properly. Fermentative and putrefactive diarrhea may lead to loss of weight. Thyrogenous diarrhea is a very important cause. Constipation, especially in young anemic and chlorotic girls, may induce a loss in weight. Endocrine disturbances and a neuropathic disposition may be contributory causes. Such women often believe they cannot eat because they have not enough bowel movements.

**Endocarditis Lenta.**—Hassencamp discusses this disease the frequency of which is increasing in Germany, especially among ex-soldiers. The diagnosis is not difficult: Valvular (usual aortic) lesion, fever between 37 and 38 C., tumor of spleen, anemia, embolic processes, especially in the kidney. He does not believe in the strict specificity of *Streptococcus viridans*.

**Surgery and Roentgen Rays in Treatment of Uterine Cancer.**—Küstner operates when possible and irradiates subsequently. Fifty c.c. of an antistreptococcus serum is given before the operation. The abdominal operation is the method of choice.

**Blood Transfusion in Pernicious Anemia.**—Götting injects from 500 to 1,000 c.c. of blood, and reports favorably on the results.

**Treatment of Pyelitis.**—Daniel commends the Meyer-Betz-Haas' diet, which consists of restriction of fluids, and of sweating to obtain a concentrated, acid urine. Hexamethylenamin, salicylates and phosphoric acid are given in addition. He follows four days of this diet by three days of increased fluid intake (2 to 3 quarts of tea), and then repeats.



**Myxedema in Lipomatosis.**—Kisch finds almost always a hypofunction of the thyroid in cases of constitutional obesity (except in dystrophia adiposogenitalis).

**Roentgen-Ray Sickness and Cachexia.**—Hirsch treated these conditions by injections of extract of the anterior lobe of the pituitary, an epinephrin-free extract of the cortex of suprarenal capsules, and an extract of an organ which had been irradiated (ovary). The results were good from this diverse organotherapy for these acute and chronic roentgen-ray injuries.

**Hypertension After Electric Shock.**—Pfalz describes the case of a young man with periods of hypertension after a severe injury by electricity. Pfalz attributes it to an increased irritability of the vasomotor center, due to the injury.

**Febrile Abortion.**—Henkel rates clinical signs above the bacteriologic finding. The main question is whether the infection is limited to the ovum or is progressing to the uterus or has become generalized. He recommends expectant treatment as far as possible. The remnants of the fetus are removed with the finger, instead of with the curet.

### Deutsche Zeitschrift für Chirurgie, Leipzig

November, 1922, 175, No. 1-6

- \*Concussion of the Brain. A. Ritter.—p. 1.
- \*Supracondylar Fracture of Humerus. H. Kälin.—p. 45.
- \*Fracture of Styloid Process of Ulna. H. R. Schinz.—p. 81.
- \*Causes of Postoperative Weakness of the Heart. E. Brack.—p. 138.
- \*Lymph Capillaries. G. Magnus.—p. 147.
- Chronic Stenosis of Duodenum. Koennecke and Meyer.—p. 179.
- Hernia on Spiegel's Line. A. Sohn.—p. 204.
- Treatment of Appendicitis with Complications. E. O. Schmidt.—p. 213.
- \*Bronchial Fistulas. W. Gast.—p. 219.
- \*Progressive Ossifying Myositis. W. Löhr.—p. 238.
- \*Perforation of Duodenum After Contusion. A. Furtwaengler.—p. 261.
- Thoracic Access to Foreign Body in Esophagus. L. Heidenhain.—p. 292.
- \*Acute Edema of the Pancreas. H. Zoepffel.—p. 301.
- Genital Complications of Appendicitis. F. de Gironcoli.—p. 313.
- Peptic Jejunal Ulcer. H. Els.—p. 327.
- Idem. Jenckel and Schüppel.—p. 337.
- Pyogenic Infection of Blood. A. Buzello.—p. 370.
- \*Origin of Ischemic Contracture. A. Schubert.—p. 381.
- \*Operation for Floating Liver. F. J. Kaiser.—p. 411.
- \*Incarceration of Intestine in Slit in Mesentery. Borbe.—p. 454.

**Injury of the Brain.**—Ritter discusses the injuries of the brain with which general symptoms predominate. The article is based on 626 cases at Zurich in the last twenty years. Analysis of the cases shows a pronounced difference in the clinical manifestations according as the commotion involved the medulla oblongata or other parts of the brain or the whole brain. This classification is important in estimating the consequences of the injury for proper treatment at the time and later, as well as from the accident insurance standpoint. The true concussion fatality is due to arrest of the respiration by the blow on the medulla oblongata, pressing on the respiration center. No organic injury is found at necropsy. The longer the interval before death, the greater the probabilities of pathologic anatomic findings. The medulla concussion cases have a favorable prognosis, unless immediately fatal. In a year and a half at latest, all the disturbance had disappeared in the cases reexamined. In the cases of concussion of other parts of the brain the disturbances persisted long but finally all disappeared in an average of nearly twenty months. The cases of diffuse concussion of the brain showed still longer persistence, from three to ten years, but final recovery was the rule. Treatment is mainly symptomatic, artificial respiration, lowering the head, etc., and as stimulants, whiffs of ether, pouring hot water on the body, the faradic brush to the soles, etc. Of supreme importance for the later course is strict bed rest, at least for three weeks. Lumbar puncture is never needed in pure medulla concussion cases.

**Supracondylar Fracture of Humerus.**—An abnormal position of the forearm is manifest in twenty of fifty cases of low fracture of the humerus reported by Kälin. It seems to be a growth anomaly which it is impossible to prevent.

**Fracture of the Wrist.**—Five pages of bibliographic titles, three plates, and forty illustrations in the text accompany Schinz' study of fracture of the styloid process of the ulna.

**Unusual Causes for Heart Failure After Abdominal Operations.**—Both patients were robust men, and merely a minor operation had been done. Adhesions kinking the portal vein were responsible for the paralytic ileus in one case. It could easily have been avoided if the portal vein had been inspected at the operation. In the second case the fatal collapse after the simple gastro-enterostomy was explained by pneumopericardium. It had been overlooked at the operation. The case teaches that pneumopericardium should be among the possible causes suspected when the heart weakens suddenly after an operation on the stomach. Puncture might safely release the gas.

**Research on Origins of Lymphatics.**—Magnus' remarkable photomicrograms of what he calls the roots of the lymphatics were obtained by distending them with a gas. The gas was the oxygen liberated when hydrogen peroxid came in contact with lymph. They throw light on the mechanism of edema, hydrocele, etc.

**Bronchial Fistulas.**—Gast remarks that many small bronchial fistulas heal spontaneously and escape discovery. Eight cases are described. Each required individual treatment, and two of the patients succumbed to the causal disease.

**So-Called Progressive Ossifying Myositis.**—Löhr concludes from the case of which he gives an illustrated description, that a single type of process is responsible for the typical clinical manifestations. It is not a muscle disease but a multilocular proliferation of connective tissue in periosteum and fascia. Calcification and true bone production follow. Surgical treatment and trauma seem to stimulate to more active ossification. The roentgen rays seem to offer the only possible chance of relief.

**Tardy Perforation of Duodenum After Contusion.**—Furtwaengler compares a case in a young woman with 123 from the records. He tabulates the details of all these cases. Only fourteen terminated in recovery. The grave symptoms in his case developed suddenly five weeks after the contusion, and a second perforation proved fatal soon after the operative repair of the first.

**Acute Edema of the Pancreas.**—Zoepffel states that in 10 per cent. of his 115 gallstone operations, he encountered acute necrosis of the pancreas—eight cases in 1921. In four it had not progressed beyond the incipient (edema) stage. In this stage there is a zone of intense tenderness and muscular stiffening in the middle and left side of the upper abdomen due to the primary gallbladder affection. With pronounced necrosis, the symptoms due to this mask the gallbladder affection. In the edema cases the operation followed the first symptoms in from twelve to twenty-four hours, and all recovered. In eight others the interval was two to four days, necrosis was pronounced, and all died.

**Ischemic Contracture.**—Schubert presents arguments to prove that disturbance in the capillary circulation in the muscle is the primary cause of the contracture. Irreparable damage may be done in a few hours. A circular plaster bandage should never be applied to the arm, and never anywhere if the pulse is not good, especially if there are signs of nerve injury. Treatment can aim only at surgical correction of the contracture.

**Operation for Floating Liver.**—Kaiser's method of lifting up and supporting the liver from below was summarized in these columns, Dec. 9, 1922, p. 2044. He describes his technic here with fuller details and ten illustrations, and extols its superiority over other methods of hepatopexy.

**Incarceration of Intestine in Slit in Mesentery.**—Borbe reports three cases of ileus and volvulus from this cause. There was no history of trauma in any instance.

### Jahrbuch für Kinderheilkunde, Berlin

November, 1922, 100, No. 1-2

- \*Milk-Free Diet for Infants. Moll and Stransky.—p. 3.
- \*Influenzal Croup in Children. Zschocke and Siegmund.—p. 15.
- \*Immunization Against Acute Articular Rheumatism. Brunthaler.—p. 34.
- \*Limits of Intubation. M. Hohlfeld.—p. 42.
- Etiologic Diagnosis of Umbilical Tetanus. Zeissler and Käckell.—p. 53.
- \*Red Cell Sedimentation and Specific Gravity. Opitz and Frei.—p. 55.
- \*Treatment with Casein. B. Asal-Falk.—p. 61.



\*Congenital Syphilis with Symptoms of Ataxia. C. Linder.—p. 65.  
Alkalosis and Acidosis. E. Freudenberg and P. György.—p. 86.

**Milk-Free Diet in Nutritional Disturbances of Infants.**—Moll and Stransky use in cases of nutritional disturbances due to milk, dyspepsia and spasmophilia, a pudding prepared from crackers, sugar and eggs. The pudding is useful for infants, beginning from the third month.

**Influenza Croup in Children.**—Zschocke describes eleven cases of severe laryngitis in children, due to influenza. Children who were younger than one year died. Of the other cases, 50 per cent. terminated fatally, as also three cases in which stenosis was present before the fourth day of the disease. Intubation may injure the inflamed larynx, and tracheotomy should be resorted to only if there is no hope of relief by other means. Usually it does not help either. Siegmund reviews the necropsy findings.

**Active Immunization Against Acute Articular Rheumatism.**—Brunthaler used a gonococcus vaccine in five cases of febrile polyarticular rheumatism, because he believes that acute articular rheumatism is caused by a micro-organism kindred to the gonococcus. None of the four children or the one adult developed any heart complications.

**Limits of Intubation.**—Hohlfeld illustrates, with cases from his clinical experience, different conditions which interfere with the success of intubation. Spasm of the glottis may be a cause, although it can be sometimes overcome by using a smaller tube, after which a larger tube is tolerated. Pharyngeal dyspnea cannot be cured by the intubation, even if the larynx is also affected. If the stenosis reaches very far down, tracheotomy is preferable, although the intubation may help a little by distending the air passages. The tube (especially a small one) may get between the trachea and the membranes.

**Relation of Speed of Sedimentation to Specific Gravity of Plasma and Erythrocytes.**—Opitz and Frei found that there is no relation in children between speed of sedimentation and the specific gravity of the plasma and erythrocytes. Only in anemia there seems to be some connection with the color index.

**Dietetic Treatment with Casein.**—Asal-Falk emphasizes the importance of calcium in the treatment with casein. One has to add it eventually to the protein in treatment of dyspepsia in infants and young children.

**Congenital Syphilis with Symptoms of Hereditary Ataxia.**—Linder's patient presented symptoms of hereditary ataxia and gave a positive complement fixation. Antisyphilitic treatment influenced the condition favorably.

### Klinische Wochenschrift, Berlin

Nov. 18, 1922, 1, No. 47

- \*Discrimination of Colors. C. v. Hess.—p. 2313.
- \*"Hygiogenesis." F. v. Gröer.—p. 2316.
- \*Narcosis and Acidosis. P. György and H. Vollmer.—p. 2317.
- \*Gout and the Kidneys. F. E. R. Loewenhardt.—p. 2319.
- Electrocardiograms Spoiled by Trembling. E. Mosler.—p. 2321.
- Action of Blood Vessels. H. Full.—p. 2322.
- \*Immunity in "Recurrans" and Arsphenamin. A. Buschke and H. Kroó.—p. 2323.
- \*Diagnostic Cutaneous Reactions in Infants. P. Grosser and K. Keilmann.—p. 2326.
- Action of Acid Mixtures of Potassium Iodid and Hydrogen Peroxid on Bacteria. Jacobitz.—p. 2328. Idem in Treatment of Wounds. Urtel.—p. 2330.
- \*Chromocholoscropy as Test for Liver Function. Hamid.—p. 2332.
- Treatment of Staphylococcoses with Horse Serum. W. Rieder.—p. 2333.
- Comment on "Iris Heterochromia." S. Sobel.—p. 2333.
- Lactase. E. Freudenberg and P. Hoffmann.—p. 2333.
- Etiology of Influenzal Pneumonia. G. A. Iwaschenzoff.—p. 2334.
- Liver Function in the Striolenticular Complex. R. Stahl.—p. 2334.
- Bone Connection Between Vertebrae in Tuberculous Spondylitis. G. Schipporeit.—p. 2335.
- Modern Treatment of Leprosy. Olpp.—p. 2336.
- Miners' Nystagmus. J. Ohm.—p. 2339.
- Active Principles of Ergot. E. Rothlin.—p. 2341. Conc'n.

**Discrimination of Colors.**—Hess reviews modern methods which enable us to make very exact determinations of the individual ability of color perception.

**Hygiogenesis.**—Gröer forms this new term in analogy to "pathogenesis." He means by it the mechanism which unites the chemical and physical processes leading to recovery of health.

**Narcosis and Acidosis.**—György and Vollmer find in narcosis a tendency of the metabolism to acidosis. They attribute it to slowing down of the oxidations.

**Gout and the Kidneys.**—Loewenhardt finds that persons suffering from gout are able to reach just as high concentrations of uric acid in the urine as healthy people, if not higher. Uric acid is well eliminated even in persons with severe insufficiency of the kidneys. The theory that gout is due to an isolated disturbance of the excretion of uric acid is without sufficient foundation.

**Presence of Spirochetes During Immune Phase of Experimental Recurrent Infection That Had Been Vigorously Treated with Arsphenamin.**—Buschke and Kroó publish very interesting investigations on mice which were in the immune stage after an infection with *Spirochaeta recurrentis*. They injected emulsions of different organs of these animals into healthy mice, and found that all of these immune animals had active virus in some organs. It is a remarkable fact that in every case, it was the brain from which even high doses of arsphenamin had not been able to remove the spirochetes. In spite of the presence of spirochetes in the brain, in some of the mice treated with arsphenamin, reinfection (or, to be more exact, superinfection) was possible. These experiments show that, in recurrent infection, immunity coexists with the presence of parasites, and it is probable that the immunity lasts only so long as they persist. The authors suggest, with all reservations, the probability that immunity against syphilis—by analogy with these experiments—is likewise a manifestation of the latent stage of the disease. There may also be further interesting analogies with the superinfection in the two diseases.

**Diagnostic Cutaneous Reactions in Infants.**—Grosser and Kleinmann show that some healthy individuals may react to nonspecific substances in the same way as to tuberculin and diphtheria toxin. An intracutaneous reaction of a diameter of less than 10 mm. and a duration of less than seventy-two hours is not necessarily specific.

**Chromocholoscropy as Liver Function Test.**—Hamid tested in thirty persons the excretion of methylene blue through the bile. There were no differences in the time of its appearance between the healthy and persons with disease of the liver.

### Medizinische Klinik, Berlin

Dec. 3, 1922, 18, No. 49

- Treatment of Diabetes. H. Assmann.—p. 1545.
- \*Trichophytosis on Extremities. A. Alexander.—p. 1550.
- \*Treatment of Spastic Conditions. H. Kersten.—p. 1553.
- Treatment of Abortion. Bandzauner.—p. 1555.
- \*Arsphenamin Injuries. E. Meyer.—p. 1557.
- Primary Chronic Fibrinous Bronchitis. Pappenheimer.—p. 1557.
- \*Modified Method of Percussion. F. Schlesinger.—p. 1557.
- \*Runpel-Leede's Phenomenon. H. Hoffmann.—p. 1558.
- Acute Cystitis. E. Portner.—p. 1559.
- Recent Literature on Roentgen Diagnosis. O. Strauss.—p. 1560.

**Trichophytosis on Extremities.**—Alexander describes trichophytosis localized in the palms and soles. The disease can be either typical or it may appear as a simple desquamating dyshidrosis. It can also resemble pemphigus. Alexander was able to cultivate the germ in nine cases out of thirteen, and considers it as *Trichophyton gypseum*.

**Treatment of Spastic Conditions.**—Kersten publishes two cases of extirpation of one suprarenal capsule. He attributes to the operation an amelioration of the epileptic condition of the patients.

**Arsphenamin Injuries.**—Meyer describes a case of death due to syphilitic thrombosis of the artery of the right sylvian fissure. The patient had been treated only with mercury ointment. If arsphenamin had been used, the case would possibly have been considered as another injury due to arsphenamin.

**Modified Method of Percussion.**—Pappenheimer puts the extended middle finger of the left hand on the body at an angle of 45 degrees, and raps on the proximal end of the last phalanx, vertical to the axis of the finger. The sound is weaker than in the classic method, but stronger than in that of Plesch-Goldscheider.



**Rumpel-Leede's Phenomenon.**—Hoffmann compared the cutaneous hemorrhages after stasis (Rumpel-Leede's phenomenon) in syphilitics and other patients (887 persons in all). There is not much difference in men, while it is more frequent in syphilitic women. The prognostic value of the reaction for arsphenamin injections is minimal, except perhaps in very pronounced cases.

# Münchener medizinische Wochenschrift, Munich

Dec. 1, 1922, 69, No. 48

- \*Primary Foci, Miliary Tuberculosis and Immunity. Huebschmann.—p. 1654.
- Experiments on Treatment of Syphilis with Bismuth. Müller.—p. 1659.
- \*Aches in Abdomen and Back. H. Albrecht.—p. 1661.
- \*Treatment of Callous Ulcers of Legs. F. v. der Hütten.—p. 1663.
- Percutaneous Application of Tuberculin. F. Hamburger.—p. 1664.
- \*Hemorrhagic Erosions of Rectum. M. Pfister.—p. 1664.
- German Alexander Hospital in Petrograd. W. Schuele.—p. 1665.
- Hueppe's Attitude Toward the Racial Question. F. Lenz.—p. 1666.
- Polycythemia and Other Splenomegalias. P. Morawitz.—p. 1666.

**Primary Foci, Miliary Tuberculosis and Immunity.**—Huebschmann reports his experiences in 329 necropsies, and discusses especially the problem of the independence of miliary tuberculosis from the chronic tuberculosis of lungs.

**Aches in Abdomen and Back.**—Albrecht emphasizes the psychogenous character of these aches. He points out that objective diseases of the female genital organs produce pains only in a very few well known affections.

**Treatment of Callous Ulcers of Legs.**—Hütten injects normal saline under and around callous ulcers of the leg, and reports favorable results even in cases of long duration.

**Hemorrhagic Erosions of Rectum.**—Pfister describes a case of rectal erosions resembling aphthae.

Dec. 8, 1922, 69, No. 49

- \*Treatment of Ulcer of Stomach. E. Enderlen and E. v. Redwitz.—p. 1683.
- \*Fatal Roentgen-Ray Injuries of Larynx. F. v. Hofmeister.—p. 1687.
- \*Comment on "Roentgen Ray Injuries of Larynx." G. Perthes.—p. 1690.
- Diagnosis of Anaphylactic Conditions. W. S. v. Leeuwen et al.—p. 1690. See abstract on page 443.
- Wound Scarlet Fever. F. Port.—p. 1691.
- \*Widal's Liver Function Test. R. Nussbaum.—p. 1693.
- \*Medium for the Gonococcus. F. H. Lorentz.—p. 1695.
- Vaccination Against Tuberculosis. F. F. Friedmann.—p. 1698.
- \*Treatment of Diseases of the Conjunctiva. A. Peters.—p. 1700.

**Surgical Treatment of Ulcer of Stomach.**—Enderlen and Redwitz considered the results of different operations from the standpoint of their physiologic effect on the digestion. The treatment should be internal as long as possible. Only if all the therapeutic measures fail, the internal treatment may be interrupted and aided by an operation. The authors are opposed to early operation as method of choice. Where operation is indicated, a typical resection is usually the best. Some cases with or without stenosis of the pylorus may require a gastro-enterostomy.

**Fatal Roentgen-Ray Injuries of Larynx.**—Hofmeister publishes three cases of death due to roentgen-ray treatment of a laryngeal papilloma and two carcinomas. The injury did not appear for a long time (two and one half to three months after the second irradiation). There resulted not only stenosis of the larynx, but also atrophy of the surrounding parts (esophagus, thyroid, salivary glands), and the tissues were so badly damaged that operation led to necrosis, besides being extremely difficult. The doses of roentgen rays were not unusually large. Besides these cases, it is very probable that two others (out of thirteen) were also injured in a similar way. Hofmeister concludes that late injuries after roentgen rays are more frequent than is realized. The absence of a severe reaction during the first four weeks does not prove that the doses were not too high. Not one carcinoma of the larynx has ever been cured by irradiation. Therefore no operable carcinoma and no papilloma should be irradiated.

**Comment on Hofmeister's "Fatal Roentgen-Ray Injuries of Larynx."**—Perthes points out that only two were operable of the thirteen cases quoted by Hofmeister as mentioned in the preceding abstract. Perthes believes that it is possible to avoid overdosage, and points out the benefits of irradiation for hopeless cases. He cites Beck's patient who had no

recurrence for three years, and one of his own patients who is still living in fair condition after two and a half years.

**Widal's Liver Function Test.**—Nussbaum discusses and recommends Widal's efficiency test of the liver. Although a negative result does not exclude abnormal conditions in the liver, a positive test should lead to very careful study of the case.

**Medium for Gonococci.**—Lorentz uses an ascites agar containing 0.02 per cent. of lactic acid.

**Treatment of Diseases of the Conjunctiva.**—Peters points out the fallacy of supposing that different compounds have a specific action on the micro-organisms in the conjunctiva. Gonococci may continue to grow under treatment with silver preparations, while the mucosa returns to a normal condition. Peters saw good results with parenteral injections of proteins.

# Wiener klinische Wochenschrift, Vienna

Dec. 7, 1922, 35, No. 49

- \*Early Diagnosis and Treatment of Syphilis. K. Ullmann.—p. 951.
- \*Cure of Trachoma by Radium. L. Müller and F. Högl.—p. 954.
- \*Meckel's Diverticulum. L. Kirchmayr.—p. 955.
- Relations Between the Biologic Reaction to Roentgen Irradiation and Oxygen. E. Petry.—p. 957.
- \*Bile Acids in Serum and Urine. A. I. Ignatowsky.—p. 958.
- Comment on "Hypnotic and Posthypnotic Analgesia." Kogerer.—p. 961.
- French Views on Icterus. F. Stöhr.—p. 961. Cont'n.

**Early Diagnosis and Treatment of Syphilis.**—Ullmann emphasizes the importance of examination of suspicious lesions for spirochetes. The induration of the base is not always present—especially if the seat is not typical.

**Cure of Trachoma by Radium.**—Müller and Högl report excellent results in five cases of trachoma treated by radium.

**Meckel's Diverticulum.**—Kirchmayr saw a retrograde invagination occur after resection of Meckel's diverticulum. He recommends therefore resection of part of the intestine, if the base of the diverticulum is broad, or if there is a difference between the lumen of the intestine proximally and distally to it.

**Bile Acids in Serum and Urine.**—Ignatowsky measures the surface tension with Czapek's capillary manometer, by which the presence of 0.02 per cent. of bile in the fluid can be detected. Oral ingestion of 0.5 gm. of sodium taurocholate is sufficient to lower the surface tension of urine. He gives an illustration of the manometer and commends to the general practitioner this method of detecting the presence of bile acids in the various body fluids.

# Zeitschrift für Kinderheilkunde, Berlin

Nov. 17, 1922, 34, No. 1-4

- \*Rachitis and Growth. I. F. Wengraf.—p. 1. Idem. II. F. Wengraf and Barchetti.—p. 14. Idem. III. Ambrozic and Wengraf.—p. 24.
- \*Liver Function Tests in Children. A. F. Hecht and E. Nobel.—p. 42.
- \*Tuberculosis of Bronchial Glands in Children. H. Langer.—p. 60.
- \*Stomach Function Tests in Infants. Demuth and Edelstein.—p. 66.
- \*Rachitis in Infants. Harriette Chick et al.—p. 75.
- \*Amino-Acid Content of Infants' Urine. F. Goebel.—p. 94.
- \*Epituberculous Infiltration of Lungs in Children. H. Langer.—p. 142.
- \*Food Requirement of Children. Y. Chou.—p. 150.
- Sugar and Protein in Bacterial Fermentation. F. Müller.—p. 158.
- \*Eosinophilia in Children. F. Hahn.—p. 165.
- Miliary Necrosis of Liver Caused by Bacteria Resembling Spirochetes. M. Kantschewa.—p. 169.
- \*Clinical Aspect of Flea Bite. J. Hescheles.—p. 177.
- \*Diphtheria Antitoxin and the New-Born. F. v. Gröer and Progulski.—p. 185.
- Rectal Feeding with Carbohydrates in Children. W. Schäfer.—p. 196.
- Biology of Intestinal Flora in Infants. VII and VIII. Adam and Kissoff.—p. 207 and p. 213.
- \*Congenital Occlusion of Common Bile Duct. S. Paul.—p. 216.

**Rachitis and Growth.**—Wengraf and Barchetti observed five children, aged from 2½ to 5 years, who were under-nourished, underweight, and very much smaller than normal children of their age. All of them were rachitic. The children had been previously nourished on a diet which was very poor in fat and proteins. On a diet with sufficient calories but without foods containing vitamin A no weight was gained except for a short period at the start. Leaving the caloric value of the diet unchanged, and adding milk and butter (instead of American hog fat), the children recovered. Four controls treated from the start with milk and butter improved rapidly. With the improvement in growth, the



rachitic changes became better. This shows that an important part of the rachitic symptoms is influenced by vitamin A.

**Rachitis and Growth.**—Ambrozic and Wengraf made experiments on white rats with vitamin-free food. They were able to demonstrate in the rats the disturbance in the deposition of calcium which is typical of rachitis. The slowing down of growth further resembled human rachitis.

**Liver Function Tests in Children.**—Hecht and Nobel tested the function of the liver in children. Galactose tests did not give reliable results. Synthesis of camphor-glycuronic acid was constant in six of the children (about 75 per cent.), although less than in adults if the dose was not too high. Three pathologic cases (icterus, liver stasis in pericarditis, and tuberculosis of serous membranes) gave low values.

**Spinal Phenomena in Diagnosis of Tuberculosis of Bronchial Glands of Children.**—Langer finds that testing for spinal pain is of no value in children. D'Espine's sign is instructive. He believes that percussion of the spine is important and valuable in the first years of life, especially if one looks also for dulness on the first three dorsal vertebrae as well as on the fifth.

**Stomach Function Tests in Healthy Infants.**—Demuth and Edelstein tested the effects of different components of milk and of added sugar on the stomach of infants. The time needed for disappearance of food from the stomach was determined chiefly by the amount of casein, both with human and cow's milk. There was no difference in the action of these substances on the acidity of the gastric juice in young infants. In older children, casein decreased, fat increased the acidity.

**Rachitis in Infants.**—Translation from *Lancet*, July 1, 1922.

**Amino-Acid Fraction of Infants' Urine.**—Goebel confirms the fact that infants excrete comparatively more amino-acids than adults. The proportion is still greater in prematurely born infants. Yet the amount of amino-acids in the blood is the same as in older children, and Goebel concludes that the increased elimination is due to a peculiarity of the kidneys. This theory is confirmed by the fact that the elimination of amino-acids in infants is increased by increasing the amount of urine. An increase in the amount of amino-acids may occur in alimentary intoxication, but it is not the rule.

**Epituberculous Infiltration of Lungs in Children.**—Langer observed in a tuberculous child, after the injection of tuberculin, fever and spreading of a previously resorbed infiltration of the lungs. The infiltration disappeared again. He considers it as a typical focal reaction, and believes that the benign infiltrates studied by Eliasberg and Neuland are specific, though he confirms the possibility of their disappearance.

**Food Requirement of Children.**—Chou studied sixty-nine children, aged from 2. to 14 years. Pirquet's formulas for infants proved to be correct even for older children.

**Eosinophilia in Children.**—Hahn attributes the frequency of eosinophilia (over 6 per cent.) in children chiefly to the great instability of their blood, and the frequency of the exudative diathesis, and of infections (including intestinal parasites). He found an increase in eosinophils in diphtheria, and attributes it to the injections of antitoxic serum.

**Clinical Aspect of Flea Bites.**—Hescheles studied the reaction of the skin to flea bites. Three quarters of the persons showed the usual maculo-hemorrhagic form, one quarter an urticarial type. This was due to the individual reaction, and not to differences in the fleas.

**Action of Diphtheria Antitoxin on the New-Born.**—Gröer and Progulski examined the action of specific antidiphtheric and nonspecific serums on eight new-born babes with a positive Schick test. They found that these babes react specifically and in the same way as adults.

**Metabolism in Case of Congenital Occlusion of the Common Bile Duct.**—Paul found in a case of aplasia of the gall-bladder and choledochus a very low excretion of ammonia and an increased excretion of amino-acids. Fats were well split, because of normal function of the pancreas, but their resorption was very small.

## Zeitschrift für Tuberkulose, Leipzig

November, 1922, 37, No. 2

- \*War Epidemiology of Tuberculosis. Redeker.—p. 89.
- Action of Poisons of Tuberculosis. E. Schulz.—p. 100.
- \*Leukocyte Formula in Tuberculous Children. C. J. Raffauf and Grimm.—p. 107.
- \*Staining of Tubercle Bacilli. R. Lommatzsch.—p. 112.
- Apparatus for Disinfection of Sputum in Homes. W. Block.—p. 126.
- Transactions of Thirteenth Yearly Convention of Association of Physicians in Tuberculosis Sanitariums.—p. 128.

**War Epidemiology of Tuberculosis.**—Redeker gives a very critical paper on the war statistics of tuberculosis. He believes that the increase in the mortality of children from tuberculosis in Germany is due to the increased frequency of infection, not to undernourishment. The latter makes the disease only more manifest.

**Differential Leukocyte Count in Tuberculosis of Bronchial Glands and Lungs in Children.**—Raffauf and Grimm examined the blood of sixty-five tuberculous children. They presented changes similar to those in adults. Lymphocytosis and eosinophilia are favorable signs.

**Staining of Tubercle Bacilli with Dyes for Fats.**—Lommatzsch gives a very extensive review of the staining of tubercle bacilli. He tried different lipoidophil dyes, but the results were negative except with a solution of aniline and Nile blue. This solution stained *Bacillus coli* equally well.

## Zentralblatt für Gynäkologie, Leipzig

Nov. 18, 1922, 46, No. 46

- Injection of Living Gonococci in Gonorrhea. A. Loeser.—p. 1825.
- Abdominal Pregnancy with Viable Child. E. Brugnattelli.—p. 1831.
- \*Protein Therapy in Febrile Abortion. W. Simon.—p. 1837.
- \*Atonic Hemorrhages in Cesarean Section. W. Sigwart.—p. 1840.
- Forceps in Relation to Child Mortality. F. Heinlein.—p. 1843.
- Time Required for Polypous Myomas to Develop. H. Becker.—p. 1847.
- \*Treatment of Dysmenorrhea. H. Gänssbauer.—p. 1849.

**Protein Therapy in Febrile Abortion.**—Simon reports the results of parenteral injections of protein in 30 cases of febrile abortion. There were no deaths. Nineteen were incomplete abortions with more than 38.4 C. rectal temperature, the beginning hemorrhage having occurred only three days previously. Only two patients had had fever for more than two days. In five other groups of 30 cases each the average number of days of fever was 4.2; 3.7; 6.1; 3.6 and 4.2, while in the group treated with the protein injections the average course of the fever was 3.1 days. He applied the protein therapy also in 26 cases of septic puerperal affections. There were 4 cases of transverse positions, 2 cases operated on elsewhere, 4 cases of vaginal cesarean section, one case of forceps delivery with eclampsia, 7 cases of fever after spontaneous birth, 2 induced premature births and 5 abortions with complications. Two cases resulted fatally, one case in which an operation had been performed elsewhere and one other case in which the fever had followed a spontaneous birth. His experience leads him to recommend injections of protein in sepsis and especially in febrile abortion.

**Use of Ether to Combat Atonic Hemorrhages in Cesarean Section.**—Sigwart reports that he has found ether efficacious in stimulating an atonic uterus and bringing about a normal contraction. The ether (50 c.c.) may be poured into the uterus or the surface of the uterus may be swabbed with the ether. He cites cases of interrupted pregnancy and cesarean section in which severe hemorrhage from inertia was promptly checked by the use of ether.

**Treatment of Dysmenorrhea.**—Gänssbauer describes Beckh's method of inducing prolonged dilatation of the cervix and the cavum uteri in the treatment of idiopathic dysmenorrhea, and in dysmenorrhea in nulliparas with abnormally small uterus. For the dilatation he uses glass rods 5 cm. in length which have the form and thickness of Hegar dilators Nos. 4 to 6. The dilatation is first effected with Hegar dilators, up to size No. 13, or at the most 14. The thickest glass rod is then introduced and held in place by tampons in the vagina. The glass rod remains for about a week. During the application of this technic, elevation of temperature was not observed and recurrences were very rare. He says that during the primary dilatation, before the introduction of the larger Hegar dilators, it is well to make shallow incisions in order to prevent deep laceration of the cervix.



# Casopis Lékaruv Ceskych, Prague

Nov. 25, 1922, 61, No. 47

- \*Turpentine in Treatment of Adnexa. J. Tuma.—p. 1121.
- \*Epituberculous Infiltration in Children. J. Mourek.—p. 1124.
- Diagnosis of Pituitary Tumors. J. Kurz.—p. 1126. Conc'n.
- Survey of Italian Otorhinolaryngology in First Half of 1922. K. Kunc.—p. 1131. Conc'n No. 48.

**Treatment of Adnexal Affections with Turpentine Oil.**—Tuma reports comparatively favorable results with injections of solutions of turpentine oil in olive oil under the glutei. The method proved useful in exudative and purulent affections of the adnexa.

**Epituberculous Infiltration in Children.**—Mourek discusses cases belonging to the group described by Eliasberg and Neuland in small children. The physical signs are an intensive dullness, usually over one upper lobe, and loud bronchial breathing, with few râles. The history and tuberculin reaction point to tuberculosis. Yet there are no tubercle bacilli in the sputum, the temperature is usually normal, and the children look well and gain in weight. After a time all symptoms disappear. Mourek discusses the process, and concludes that the affection is best considered as scrofulosis.

Dec. 2, 1922, 61, No. 48

- New Form of Supporting Tissue in Invertebrates. Z. Frankenberger.—p. 1145.
- Acute Retention of Urine with Hypertrophied Prostate. V. Janecek.—p. 1149.

Dec. 9, 1922, 61, No. 49

- \*Blood Picture in Treatment of Adnexitis. M. Premrou.—p. 1169.
- Congenital Metatarsus Varus. A. Sebek.—p. 1176.
- Hysteresis During Inanition. A. Svoboda.—p. 1179.

**The Blood Picture as Guide to Treatment of Adnexitis.**—Premrou finds that the best prognosis is in cases of neutrophil leukocytosis which disappears in two or three days, while the number of eosinophils increases. Absence of a marked leukocytosis and disappearance of eosinophils mark chronic cases which are not suitable for injections of turpentine oil.

# Naval Medical Association Bulletin, Tokyo, Japan

July, 1922, No. 36

- \*Acidosis Among Stokers in Tropics. B. Abe et al.—p. 5.
- Experimental Studies on Medication of Calcium Preparations. K. Wakatsuki.—p. 6.
- \*Three Cases of Appendicitis Caused by Ascaris. S. Hattori.—p. 7.
- Bacillary Dysentery on Board H. M. S. Yakumo. A. Tanaka.—p. 8.
- On Eighty-Nine Cases of Influenza in January, 1922. A. Tanaka.—p. 9.
- Studies on Size of Markers for Determination of Visual Field. H. Nakagawa.—p. 10.

**Acidosis Among Stokers.**—According to Abe, Fukui and Imai, acidosis among stokers may be prevented by administration of 1.0 gm. sodium bicarbonate after two hours' work.

**Appendicitis Caused by Ascaris.**—Among seventy-nine cases of appendicitis, Hattori found three cases (3.8 per cent.) due to the ascaris, which had wandered into the cavity of the appendix.

# Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Nov. 18, 1922, 2, No. 21

- \*Pseudo-Hermaphroditism as Cause of Sterility. Wesselink.—p. 2251.
- \*Influence of Spleen on Erythrocytes. Bolt and Heeres.—p. 2259.
- \*The Anemia with Sprue. C. Elders.—p. 2267.
- \*Diagnosis of Diseases for Which Anaphylaxis is Responsible. W. S. van Leeuwen et al.—p. 2276.
- Arterioesenteric Occlusion of the Intestines. H. L. Coopman.—p. 2280.
- Osteochondroma of Forefinger. J. F. O. Huese.—p. 2284.

**Pseudohermaphroditism as Cause of Sterility.**—Wesselink relates that as women of a masculine aspect are sought less in marriage, their tendency to sterility has not attracted attention hitherto. He describes eight cases, however, in which, when consulted on account of sterile wedlock, he found evidences of pseudohermaphroditism, with tardy and scanty menstruation, and a masculine growth of hair on the body.

**Influence of the Spleen on the Erythrocytes.**—Bolt and Heeres present evidence that the osmotic resistance of the erythrocytes is reduced in the spleen. The resistance to saponin is increased. They discuss the relation between these facts, and the ratio between cholesterol and phosphatids.

**Etiology of Pernicious Anemia.**—Elders' tabulated data of anemia in sprue confirm the pernicious type of the anemia

in these cases. They suggest that pernicious anemia can be explained better by the assumption that a deficiency factor rather than a toxic factor is mainly responsible.

**Diagnosis of Anaphylactic Nature of Diseases.**—Van Leeuwen, Bien and Varekamp noted that 67 per cent. of forty-nine patients with asthma responded positively to diagnostic tests with scales from the skin of horses; 53 per cent. of thirty reacted to dog hairs and 39 per cent. of thirty-six to rabbit hairs. Circumstances rendered it extremely improbable that all these persons reacting positively had actual contact with horse scales, dog hair or rabbit hair. Hence they concluded that the hypersensitivity was to skin in general. Tests based on this assumption were positive in 95 per cent. of asthma cases. They call attention to this as a simple, harmless and instructive means for detecting those whose asthma, migraine, epilepsy, etc., are traceable to abnormal sensitivity to some substance which does not affect normal persons. The test extract is made with dandruff scales, ground with ether. After evaporation of the ether, the scales are extracted by ten volumes of a solution containing 0.5 per cent. sodium chlorid and 0.4 per cent. sodium bicarbonate for two days under toluol. The extract is preserved with 0.5 per cent. phenol. Intracutaneous injection of salt solution containing 0.5 per cent. phenol serves as a control. Some extracts contain toxic substances and must be discarded. The test in the normal was constantly negative. They urge dermatologists and neurologists to apply this test extensively in skin diseases, epilepsy, etc. By its use cases can be detected in which desensitization may cure the disturbances. Tuberculin or parenteral injection of milk may accomplish the purpose. With the possible exception of hay-fever, it will probably be rarely necessary to resort to the specific protein involved.

Nov. 25, 1922, 2, No. 22

- Treatment of Abortion. J. A. van Dongen.—p. 2346.
- \*Experimental Compression of Heart. G. van Rijnberk.—p. 2355.
- \*Determination of Acidity of Stomach Content. H. Vos.—p. 2364.
- \*Research on Hypnosis. S. Koster.—p. 2370.
- Chronic Arsenic Poisoning. M. Elzas.—p. 2383.
- \*Death of Fetus. P. A. de Wilde.—p. 2386.
- Cancer and Heart Disease in Married and Unmarried Women at Rotterdam. D. E. Schouten.—p. 2406.

**Experimental Compression of the Heart.**—Van Rijnberk discusses the interpretation of the tracings and other findings obtained by connecting the interior of the dog pericardium with a recording drum. He then applied pressure with and without a metal plethysmograph.

**Estimation of Acidity of Stomach Content.**—This communication from the laboratory for physiologic chemistry in charge of Ringer, presents evidence that Günzburg's reagent is a reliable indicator of the free acid or hydrogen ions so long as the acidity is not below  $p_H$  2.1. The stomach content must not be filtered. Vos tabulates the findings with various methods of analysis in forty-eight solutions of hydrochloric acid and peptone of varying strengths.

**Research on Hypnosis.**—Koster tested with the ergometer the subject's muscular strength and then repeated the test after hypnotism and the suggestion of extreme strength. These and similar tests of the sense of touch during suggestion under, and subsequent to, hypnosis provided objective findings for estimating the effect of suggestion.

**Causes of Death of Fetus.**—De Wilde reports three cases which suggest that, when syphilis and kidney disease can be excluded, an abnormally long umbilical cord may be responsible for the death of the fetus.

Dec. 2, 1922, 2, No. 23, Pasteur Centennial Number

- \*The Netherlands' Tribute to Pasteur. J. J. van Loghem.—p. 2442.
- Pasteur Day in the Netherlands. P. Muntendam.—p. 2443.
- Pasteur's First Research. F. M. Jaeger.—p. 2447.
- Pasteur, the Founder of Microbiology. A. J. Kluyver.—p. 2457.
- Importance of Pasteur's Work for Medical Science. C. H. H. Spronck.—p. 2466.
- Influence of Pasteur's Work on Progress of Civilization. A. Calmette.—p. 2480.
- Louis Pasteur. 1822-1922. E. Cohen.—p. 2490.

**The Pasteur Centennial.**—The Netherlands Medical Association appointed a committee of twenty persons to arrange for celebration of the Pasteur centennial. The main celebra-



tion was at Amsterdam, and the addresses are reproduced in this Pasteur number. Calmette, subdirector of the Pasteur Institute at Paris, closed the list, and the committee presented him with an album recording the persons, institutions and societies that had participated in the "Pasteur day."

Dec. 9, 1922, 2, No. 24

- \*Dietetic Treatment of Diabetes. J. T. Peters.—p. 2568.
- \*Familial Splenomegaly. P. H. Kramer.—p. 2585.
- History of Collegium Medicum. A. J. van der Weyde.—p. 2600.
- A Seventeenth Century Dentist. G. H. Bisseling.—p. 2608.
- A Medieval Hospital. M. H. Cohen.—p. 2621.
- \*The Auenbrugger Bicentennial. M. Neuburger.—p. 2623.
- History of Medicine at Centennial of German Society for the Advancement of Science. Van Andel.—p. 2635.
- Prophylaxis of Influenza. H. A. Molema.—p. 2649.

**Dietetic Treatment of Diabetes.**—Peters suggests as a working hypothesis that diabetics have more reserve carbohydrates in their tissues than normal persons. Hence, during periods of fasting, these reserve carbohydrates can serve as antiketogenous substances. This would explain why diabetics excrete less ketonic acids in the urine during fasting than normal persons under similar conditions. Modern treatment limits the ration to about 30 calories to the kilogram. Peters tries to banish the glycosuria by merely reducing the intake of food, especially of fat. If the glycosuria does not subside in two days of this regimen, he reduces the intake still further, and after two days resorts to absolute fasting. Only in very severe cases, in comparatively strong patients, is it advisable to begin at once with the fasting. During this fasting, he allows weak coffee, weak tea and weak bouillon at will, and the patient is kept in bed or lying down. One woman had acetone and 8 per cent. of sugar in the urine. On restriction to 332 calories (no fat; carbohydrates 46, and protein 37), for two days, and then complete fasting for two days, the glycosuria disappeared and did not return when 118, 158 and 250 calories were allowed. At 740 calories, 1 per cent. sugar appeared. The carbohydrates were then reduced from 52 to 40, with 61 protein, and fat was increased from 32 to 155. The calories were then increased to 1,803, and there had been no return of the glycosuria or acetone on this diet two months later. This diet corresponded to 30 calories per kilogram.

**Familial Splenomegaly.**—Kramer remarks that the brothers and sisters of patients with splenomegaly should be examined. In the family he describes, splenomegaly in the women, aged 20 and 26, and in the boy, aged 14, had been known for nine to thirteen years. All gave a constantly high leukocyte count. In De Lange's case, the splenomegaly was pronounced in four of the seven children in the family. Two were treated by splenectomy in 1916, and have been free from disturbances since. Three persons treated by splenectomy in 1909 and 1912, in another Rotterdam family of eleven children, are also well. The indications with familial splenomegaly are to temporize, and to remove the spleen if the disturbances increase.

**The Auenbrugger Bicentennial.**—This issue of the *Tijdschrift* contains not only a number of historical articles, but most of the abstracts are from periodicals devoted to the history of medicine.

### Norsk Magazin for Lægevidenskaben, Christiania

December, 1922, 83, No. 12

- \*Treatment of Prolapse of the Uterus. H. Natvig.—p. 945.
- \*Traumatic Ossifying Myositis. P. Bull.—p. 992.
- \*Conjugal Pulmonary Tuberculosis. A. de Besche and Jørgensen.—p. 1000.
- \*Bronchial Spirochetosis. H. Engelsen.—p. 1016.
- \*Motor Symptoms. G. H. Monrad-Krohn.—p. 1018.

**Treatment of Extensive Genital Prolapse.**—Natvig gives an illustrated description of his method, which he calls antero-lateral hiatopexy with antesusension of the interposed body of the uterus. He uses a strong fold of mucous membrane in the vagina, which encloses a stout band of connective tissue, to sustain the uterus when brought up into the interposed position. The antesusension is accomplished by shortening the broad and round ligaments. The needle is passed through the tissues behind the descending ramus of the pubis, and through the body of the uterus. The suture thread thus embraces the stout fold of connective tissue, the *plica angularis vaginæ*.

**Traumatic Ossifying Myositis.**—The various stages of this affection are shown in the roentgenograms of Bull's four cases. The patients were two young men, one young woman and a boy, aged 14. The traumatism had occurred during a football game, skiing, snowballing and from knocking the arm against a door-knob. The interval which elapsed before the secondary changes developed from the traumatic hematoma and the subjects applied for treatment, was from three weeks to several months. In one case the bone had been fractured; in another some muscle fibers had been lacerated. Sarcoma had been diagnosed in three cases.

**Conjugal Pulmonary Tuberculosis.**—Only thirty-nine cases of pulmonary tuberculosis in both husband and wife were found among 742 married couples who had been reported as suffering from pulmonary tuberculosis (notification is compulsory in Norway). Analysis of these thirty-nine cases of conjugal tuberculosis showed that, in a large proportion, the parties had lived in a tuberculous environment before marriage and some had shown signs of tuberculosis before marriage. Only eleven instances were found in which the probabilities were in favor of the disease having been contracted in wedlock. These cases form 1.48 per cent. of the total.

**Bronchial Spirochetosis.**—The chronic bronchitis of three months' duration in a man, aged 26, had been supposed to be of tuberculous origin, until Castellani's spirochetes were found in the sputum. Under treatment with Fowler's solution, recovery was soon complete.

**Motor Symptoms.**—Monrad-Krohn reviews recent literature on movements and their disorders.

### Ugeskrift for Læger, Copenhagen

Dec. 7, 1922, 84, No. 49

- \*Rapid Test for Sugar in Blood. J. Christiansen.—p. 1703.
- \*Results of Tonsillectomy. F. Norsk.—p. 1708.
- Intussusception in Young Woman. H. Thorborg.—p. 1716.
- \*Hemoglobin-Corpuscle Ratio. A. Norgaard and H. C. Gram.—p. 1721.

**Rapid Test for Sugar Content of the Blood.**—Christiansen recommends the technic he describes as accurate enough for practical purposes in examining diabetics. His table of the findings in 100 cases shows that they parallel the findings with the Hagedorn test. He precipitates the albumin with the Folin technic, and then compares the reducing power for methylene blue with that of known solutions of glucose. A still more rapid method is to heat 5 c.c. of the Folin filtrate with 5 c.c. of 10 per cent. sodium hydroxid. In the presence of sugar, a yellow or brown tint appears. This test takes only five minutes. It was constantly negative in thirty non-diabetic subjects.

**Consequences of Tonsillectomy.**—Norsk has investigated the present condition of 229 adults whose tonsils had been removed between 1910 and 1919. He was able to reexamine personally 72 of them. The tendency to peritonsillar abscess did not persist after the tonsillectomy in 94 per cent., and was much reduced in 6 per cent.; the tendency to acute tonsillitis disappeared in 84 per cent. and was much reduced in 9 per cent. Fourteen patients with febrile rheumatism, probably of tonsil origin, have had no recurrence of the rheumatism. In 35 of 144 cases adenoid tissue developed anew in the tonsil region. The singing voice was modified in some and this suggests the need for caution with tonsillectomy in professional singers. Acute pharyngitis with a slight general reaction has occurred frequently in 40 of the patients. This tendency to pharyngitis had probably before been masked by the tonsillitis. One case confirms the liability for tonsillectomy to activate a latent infection. In this case the operation was followed by sepsis with joint and heart symptoms, which incapacitated the patient for several years. Similar cases have been recorded by others. Sepsis following tonsillectomy proved fatal in Mackenzie's case.

**Ratio Between Hemoglobin and Corpuscles.**—The investigation of ten healthy men and ten healthy women demonstrated that the ratio between hemoglobin and the number and size of the corpuscles was remarkably constant in both men and women. The quotient and index show no essential differences between the sexes.



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## TUMORS OF THE BREAST

A STUDY OF TWO HUNDRED AND FIFTY-FIVE  
CASES

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We have collected in our clinic for the eleven years ending Jan. 1, 1922, 255 histories of breast lesions.

In 1910 no benign tumors were operated on; in 1921, 50 per cent. of the breast tumors removed were non-malignant. This is a striking illustration of what education has done.

Many women apply for examination who have no lesion at all. This is due to improper palpation by the patient and sometimes by the examiner. Breast tissue, when picked up by the hand, gives an erroneous feel of a tumor; but when the breast is palpated by the tips of the extended fingers, it flattens out over the chest wall, and a lump can then offer definite resistance.

The average age of breast patients was 42.3 years. The youngest patient was a boy, aged 12, with a sarcoma of the left breast. A tumor had been in existence nine years, and involved the whole breast. There was metastasis in the mediastinum, as disclosed by the roentgen ray, and palpable secondary growths in the supraclavicular and infraclavicular glands. The case was inoperable. The oldest patient was a widow, aged 77; this case also was inoperable.

There were only ten males, and their average age was 41.2 years. The youngest patient was 12, the oldest, 59. The latter presented an enormous lipoma of the left breast which was first noticed eight years before. The tumor was about 6 inches (15 cm.) in diameter, and produced no pain except from its weight. The largest number of male patients came in the sixth decade.

The proportion of married women to single women was about four to one, which is the normal ratio.

Thirty-nine per cent. stated that they had had no injury or irritation, while 61 per cent. said that the affected breast had been subject to acute or chronic traumatism which might have accounted for the new growth.

The family history was positive for cancer in 29 per cent., and negative in 71 per cent. of the patients.

Table 1 will illustrate the various types of tumors found in this series.

There were 126 cases of malignancy, or 49.4 per cent. of all the patients, thus distributed: carcinoma, 120 cases; sarcoma, three cases; epithelioma, one case; malignant cysts, two cases.

The average age in the malignant cases was 49.2 years, which is about seven years more than the average age for the entire group including both types of disease. The youngest patient with carcinoma was a married woman, aged 27, with a small tumor about an inch (2.5 cm.) in diameter in the upper and inner quadrant of the right breast. It had been in existence six months. The tumor was apparently not growing, and was symptomless. The patient was treated by excision of the tumor, followed by roentgen-ray exposures. This patient is at present well, five years after the excision. Thus, from our study it is safe to say that a tumor in the breast of a woman under 27 is nonmalignant. If the lump occurs in a woman under 20 and is not growing, it is the only exception to immediate operation, but should be kept under competent and regular observation.

Nine of these patients with a condition diagnosed recurrent carcinoma had an average age of 44.1 years, five years below the average of the primary cases. This bears out the observation that the younger the patients having cancer, the harder they are to cure and the more likely it is to recur.

The malignant group included four males and 122 females. All three sarcomas occurred in males, and the fourth male was a physician with carcinoma of the right breast.

The incidence of cancer was about equally divided between the two breasts. In only one case were the two breasts involved simultaneously. In one third of the malignant cases there was a family history of cancer, and in two thirds there had never been a case of cancer in the family. This is fair evidence that heredity plays little part in the etiology of cancer.

The average duration of the malignant tumors before operation was thirty-three months, the shortest period of time being one week, and the longest forty-two years. The next longest was thirty years. Excluding these two unusually long cases, the average preoperative duration was twenty-six and one-half months. The average duration of the recurrent carcinomas before the original operation was forty-two months, which is about fifteen and one-half months longer than for the primary cases. The shortest duration was eight weeks, and the longest, twelve years.

One hundred and three patients were operated on for various types of malignancy. In nineteen others, or about one in five cases that came under our observation, the condition was considered inoperable. Three of these were recurrent. Three others were operated on elsewhere and came to us for irradiation. In one case the



type of treatment was not recorded in the history. In 20 per cent. there was no palpable metastasis; in 60 per cent. there was axillary metastasis only; in 20 per cent. there was axillary and other metastasis as well.

There were 108 operations done on 103 patients, of which eighty-seven were complete operations (routine axillary dissection). Five of these patients had recurrence in the opposite breast, and a radical operation was performed on the second breast, making a total of 108 operations. Of these five patients, one died in the hospital from cerebral embolus; two died within a year after the second operation; one could not be traced, and one remains well at the present time, fourteen months after the second operation.

Five amputations were done in very early cases in which there were no evidences of malignancy or of metastasis. There were no recurrences. Three others

rounds the cysts. There were four abscesses, or 3.1 per cent. of the benign lesions. There were two cases of primary tuberculosis of the breast, or 1.5 per cent. of the benign group. These presented chronic abscesses and multiple sinuses. There were fourteen intracanalicular growths, including two papillomas. Dermoid cyst of the breast occurred once. There was one case of chancre of the breast. The chancre developed near the nipple of the right breast in a married woman, aged 24. This mother had employed a colored woman to look after the child, who was 10 months old. The colored woman infected the child with syphilis, the baby developing a chancre of the lip. The mother allowed the child to nurse, and in this way became infected.

The patients with innocent breast lesions came for treatment at an average age of 36.1 years, which is thirteen years younger than the average among the malignant series. The youngest patient was a youth of 16 with mastitis of the left breast of one year's duration. No operation was performed in these cases. The oldest patient was a married woman, aged 60, who had had an intracanalicular fibro-adenoma of the left breast for about eight years, which was excised.

The average duration of the lesions was fourteen months, as against twenty-six and one-half months for malignant growths. Who can say how many of these benign lesions at fourteen months would have been malignant at twelve and one-half months later?

In the benign group the family history was positive for cancer in 73.8 per cent. of the cases, and negative in 26.2 per cent. This negatively proves that heredity plays little or no part in the occurrence of cancer. It is interpreted to mean that the fact that nearly three fourths of these patients knew of the occurrence and believed in heredity caused them to apply earlier for advice. Only about one third of the cancer patients knew of any heredity, and they delayed operation more than twice as long as the patients with benign growths.

Practically all women over 25 with single lumps in the breast are advised to have them removed. The frank, movable adenomas are generally removed under a local anesthetic. They present a typical appearance on section, and are encapsulated. The blue-dome cyst is easily recognized and always benign. These two groups fortunately comprise the majority of innocent tumors.

Nearly all nonencapsulated tumors are malignant, and if all such are submitted to the radical operation, Bloodgood estimates that only 15 per cent. will be found noncancerous.

Operations were performed on eighty-nine patients with benign lesions. In two patients, tumors were removed from both breasts at one sitting, and two other patients returned later with an innocent growth in the opposite breast, which was removed in a second operation. In all, then, there were ninety-three operations performed.

The radical operation for the removal of the breast was performed nine times for these benign pathologic conditions: chronic cystic mastitis, four times; fibroma (large as child's head), once; intracanalicular fibro-adenoma, once; tuberculosis, once; suppurative mastitis, once, and cyst (papillomatous), once.

The remaining forty patients were not operated on. The clinical diagnoses in the benign cases were: chronic cystic mastitis, 6; intracanalicular papilloma, 2; fibro-adenoma, 14; acute mastitis, 2; abscess, 1; chancre, 1; glandular enlargement, 1; no pathologic condition, 5;

TABLE 1.—TYPES OF TUMORS

	Number
Adenocarcinoma .....	83
Recurrent carcinoma .....	9
Scirrhus carcinoma .....	18
Encephaloid carcinoma .....	1
Medullary carcinoma .....	5
Mucous carcinoma .....	1
Large cell carcinoma .....	1
Beginning carcinoma .....	2
Precancerous .....	1
Epithelioma .....	1
Sarcoma .....	3
Recurrent sarcoma .....	1
Papillomatous cyst .....	1
Blue dome cyst .....	11
Malignant cyst .....	2
Chronic cystic mastitis .....	19
Acute mastitis .....	2
Suppurative mastitis .....	2
Fibro-adenoma .....	28
Adenoma .....	9
Fibroma .....	10
Neuroma .....	1
Lipoma .....	2
Scleroderma .....	1
Dermoid .....	1
Galactocele .....	6
Tuberculosis .....	2
Wart .....	1
Glandular enlargement .....	1
Bleeding from nipple .....	6
No tumor .....	5
Abscess .....	4
Intracanalicular fibroma .....	1
Intracanalicular fibro-adenoma .....	5
Intracanalicular myxofibroma .....	5
Intracanalicular myxo-adenofibroma .....	1
Intracanalicular papilloma .....	2
Chancre .....	1
Total .....	255

were done merely as a palliative measure, two of these three being recurrent cases. Three excisions were also performed in very early cases. The remaining three were palliative. Including nine radical amputations of the breast for benign lesions and five done for recurrences in the opposite breast, in the malignant cases, there were 101 complete operations. In two instances the pectoral muscles were not removed. In two instances the wound could not be closed and had to be treated with skin grafts. In two other instances the growth was ulcerated and infected to such an extent that the actual cautery was used for purposes of sterilization and excision. Both of these patients died within two years after the operation.

There were 129 benign lesions of the breast. There were eleven instances of blue dome cysts and one papillomatous cyst. Chronic cystic mastitis occurred nineteen times, acute mastitis twice, and suppurative mastitis twice. The cystic process is most frequent at or about the menopause, and gives a nodular or "cobblestone" feeling, caused by the fibrous tissue that sur-



dermoid, 1; scleroderma, 1, and bleeding from the nipples, 6.

In the six cases of bleeding nipples, operation was not performed because there was no tumor and no ulceration; but these patients were kept under surveillance until the discharge ceased with or without treatment.

On the other hand, a number of cases of tumor, symptomless except for a bloody discharge from the nipple, proved to be cancer, and operation was performed.

The clinical diagnosis of the malignant or nonmalignant nature of the breast tumor is not always possible in the early cases. In this series there were thirteen patients with all the clinical signs of benign tumor. In each of these cases the tumor was excised under local anesthesia for microscopic examination, and proved to be cancer. Eleven of these tumors were excised in our clinic, and two operated on elsewhere and referred to us for the radical operation. All of them had the radical amputation performed except one patient, who refused to submit to any further surgical effort. The longest period of time elapsing between the local excision and the radical operation was five and one-half months, and the shortest was one day. Only nine patients submitted to radical surgery on the day set by the surgeon, which was, on an average, four days after the local excision. Of these thirteen patients, two are now dead. One patient lived three years following her Halstead operation, and died of a recurrence. The other survived two years, and died of cancer of the stomach. Eleven patients are now living and well. Four of them have survived one year; two have remained well for two years; two for four years; one for six years; one for nine years, and one for ten years.

The two-stage operation is not advised. Immediate radical removal after exploratory incision confirms the malignant nature of the growth and is undoubtedly the ideal method. At the present time a frozen section is done on all questionable neoplasms, and a report made within two or three minutes as to the malignant or nonmalignant nature of the tumor. If malignant, the radical operation is proceeded with at once.

When the surgeon cannot be certain, and a trained pathologist is not immediately available, our experience shows that wide excision of the growth, followed by microscopic study and early secondary operation, is not as dangerous as we have been led to believe.

The patients who presented unmistakable signs clinically of cancer are too advanced for an assured expectancy of permanent cure. By the external or clinical signs of malignant tumors is meant such evidence as skin involvement manifested by bulging and dimpling of the skin, retraction of the nipple, fixing of the skin over the tumor, a "pigskin" appearance and, in the more pronounced cases, breaking down and ulceration. Immobilization of the tumor, an unusual degree of firmness to the touch, and nonencapsulation associated with immobilization are clinical evidences of malignancy. Not only must the diagnosis be made, but the operation must be performed before such manifestations appear in order to bring about a permanent cure. To reach a conclusion while the tumor is most amenable to surgery, microscopic evidence alone is of diagnostic importance. It has been shown that malignancy exists in tumors that are small, encapsulated and movable, in tumors without any of the external clinical evidences of malignancy.

The laboratory diagnosis was incorrect in four cases in the entire group. Three malignant cases were reported benign, and a benign tumor in a lactating breast was reported malignant.

The malignant series of cases constituted a group in which the pathologic changes were very far advanced. A great many of these cases were well nigh desperate, and in some, perhaps, operation should not have been performed. A frail, wizened woman with a withered, malignant breast firmly fixed to the chest wall will live longer at that stage if not operated on. A study of the group as a whole brings this out in the following manner:

Nineteen were inoperable.

Four others were recurrent.

Ten were ulcerating.

Two patients had local excision elsewhere and came to the clinic for radical operation after undue delay.

Two patients who had undergone local excision in the clinic wilfully and knowingly delayed the radical operation, in one instance one month and in the other five and one-half months.

Three cases were in lactating breasts, which decreases the chances for cure almost to the vanishing point.

Two cases occurred in diabetics.

Two patients had edema of the arm from large metastatic growths in the axilla.

There were no deaths among the eighty-nine patients operated on for benign conditions, and no known recurrences among the 129 patients of the nonmalignant

TABLE 2.—END-RESULTS IN CASES CONSIDERED  
SURGICAL AND IN WHICH OPERATION  
WAS PERFORMED

	Per Cent.
1910-1916—5 to 11 year cures.....	45.7
1917 —4 year cures.....	50
1918 —3 year cures.....	58.3
1919 —2 year cures.....	61.5
1920 —1 year cures.....	64.2

group. There were, however, five deaths in the hospital following operations for malignancy, a primary mortality of 4.2 per cent. One patient died of diabetic coma on the fourth day, after two weeks of the Allen treatment had rendered the urine sugar-free. One died of infection on the fifth day, one of pneumonia on the sixth day, and two of embolus, one on the second day and one at the end of two weeks. Thus, only one patient died of a preventable surgical complication, which would make the actual surgical mortality 0.8 per cent.

Of the 126 patients with malignant disease, 111 were traced. Of the total number, there are living 47.7 per cent. This, however, includes some of the inoperable cases of recent date. Of the patients operated on and living, three are known to have recurrences.

Patients who were operated on and who died, lived on an average a little more than twenty months.

Patients whose conditions were considered inoperable lived, on an average, nine months after their consultation. Two of these patients had palliative operations and an average postoperative life of only two months, or an existence seven months shorter than those who were left alone. The entire course of the disease from beginning to death, in the untreated cases, covered an average period of twenty-five and one-half months, which is shorter than the preoperative duration given by those patients treated surgically, thus showing the relative virulence of the rapidly growing inoperable tumors.



## SUMMARY

1. No malignant tumor of the breast occurred in a woman under 27.
2. The average age of patients with cancer of the breast was 49.2 years.
3. In cases of recurrent carcinoma, the patients were five years younger than in the primary cases.
4. All sarcomas occurred in males, and constituted 2.3 per cent. of the malignant cases.
5. In only one third of the malignant cases was there a family history of cancer.
6. In two thirds of the cases in which the lesions were benign, the patients gave a positive family history for cancer which probably caused them to apply for examination even though their lesions were benign.
7. The average duration of cancer before operation was twenty-six and one-half months.
8. One case in five was inoperable.
9. Patients with benign lesions had an average age of 36.1 years, which was thirteen years younger than in the malignant cases.
10. The average duration was fourteen months, as against twenty-six and eight-tenths months for carcinoma cases.
11. From five to ten year cures in 111 traced cases of operations for cancer of the breast occurred in 45.7 per cent.
12. The preventable surgical mortality was 0.8 per cent.

706 Church Street.

## THE EARLY TREATMENT OF CANCER\*

HARRY C. SALTZSTEIN, M.D.

DETROIT

An important phase of any discussion of cancer is the campaign of education, which aims to make progress by wider utilization of the facts already at hand regarding the disease rather than by relying on the development of new procedures to increase the number of our cures. We already have sufficient knowledge to alleviate the suffering of many times the number of victims that we help at the present time, yet how much cancer do we cure? How soon does the average case become hopeless? How late are we when we ordinarily attack the disease, and therefore how much or how little chance will a given individual have? These are pertinent questions, unfortunately susceptible of only indirect answers; but they indicate the extent of the problem before us and, as such, should demand our attention.

The cancer problem of a community is not how many operative cures have been reported from various surgical centers, but how late cases receive treatment, and the results of treatment, in that particular community. With this point in view, an exhibit was attempted bearing on the treatment of the disease at Harper Hospital, as a cross section of an average situation.

As we had no figures of final three or five year cures, data were compiled for some of the commoner cancers, showing the percentage of total admissions for cancer in which radical treatment at the time of operation could be given, and how many patients survived operation; that is, the number of patients in whom treatment offered a chance of cure. A rough estimate

of cures could then be made, based on the reports from the Mayo Clinic<sup>1</sup> of the percentage of resections in which patients remained cured five years. Figures were also available regarding the length of time symptoms were noted, and from these some of the difficulties of early diagnosis can be discussed. The data are from Harper Hospital records, chiefly 1918-1921, and will be presented arranged for stomach, colon, rectum and breast.

## STOMACH

Thirteen of the eighty-two gastric carcinomas observed at Harper Hospital during the years 1918-1921<sup>2</sup> were available for radical resection; i. e., 16 per cent. of the cases were operable (Table 1). Five of these, or 6 per cent. of the total, survived the operation. Estimating that in 25 per cent. of gastric resections the patients survive five years, we have cured less than 2 per cent. of patients with stomach cancers presenting themselves during the last four years. At Receiving Hospital,<sup>3</sup> the city institution, which draws its clientele from the indigent and those persons less able to afford medical service, during the same time there was no case in which radical resection could be attempted. In two thirds of the cases, gastro-enterostomy was impossible because of the extent of the growth. At Henry Ford Hospital, during the same period, there were twelve carcinomas of the stomach. One patient refused operation, five cases were found inoperable at exploratory incision, and five patients had a gastro-enterostomy performed; only one case was suitable for radical resection, and this patient did not survive operation.

Getting stomach cancers early enough to hope for a cure will always be a difficult problem. Lymphatic drainage from the stomach is profuse, as contrasted with the colon, and the lymph glands are accessible for only a short distance, as contrasted with the breast. Hence, cancer of the stomach is operable for a much shorter space of time than is cancer of the colon or breast, or, for that matter, than cancer in most other organs. The average duration of symptoms (Harper Hospital) before operation was 6.7 months—in less than seven months the disease was almost hopeless. This figure agrees with Smithies'<sup>4</sup> statistics. In his series, patients who were in perfect health prior to onset had symptoms for seven months, and those who had antecedent dyspepsia had a cancer symptom period of 6.3 months.

Clinically, there were two types of gastric cancer history: the one with years of antecedent ulcer indigestion, and the one which started suddenly from previous good health. The former type constituted only 24 per cent. (it might have been larger, had more detailed histories been available), the latter 76 per cent. In Smithies' careful analysis of a thousand cases, 47 per cent. showed years of antecedent indigestion, and 32 per cent. had had perfect health prior to the onset of symptoms.

It is significant that a definite time of onset was always stated, as five months or six months. The statement never was "gradual onset," "slowly began to notice." The patients had suddenly noticed that they were not well. Most of the antecedent ulcer histories

1. Mayo, W. J.: Operative Results in Cancer of the Gastro-Intestinal Tract, Collected Papers of the Mayo Clinic, 1912, p. 135.

2. Data for gastric carcinomas include the first six months of 1922.

3. For the data from Receiving Hospital I am indebted to Dr. C. F. Vale; for that from Henry Ford Hospital, to Dr. John K. Ormond.

4. Smithies, Frank: Cancer of the Stomach, Philadelphia, W. B. Saunders Company, 1916.

\* From the Surgical Service of Dr. Max Ballin, Harper Hospital.

\* Read before the Surgical Section of the Michigan State Medical Society, June 9, 1922.



gave a definite period when the picture changed: dyspepsia became continuous, there was loss of weight, or some other abnormality was observed. The lesson is, persistent indigestion past middle life is suspicious—the slogan the American Society for Control of Cancer is trying to spread broadcast. Many mild indigestions will have to be thoroughly analyzed to find a few early cases. For the last two years, all the hospitals in Detroit have held special free cancer diagnosis clinics during national cancer week. In 1921, twenty-six gastric cases were examined, and two early cancers found. In 1922, a much larger number were examined, but no stomach cancers found. This may represent the average rewards of effort; but how else will carcinoma of the stomach be detected during the first three months? In six months the disease is hopeless in a large majority of cases.

The indigestion was often mild, and was more continuous and associated more frequently with flatulence and food aversion than is the chronic ulcer dyspepsia, and there was rapid loss of weight. There were a sufficiently large number of cases, however, in which the history was indistinguishable from ulcer to enjoin a heavy responsibility on the continued medicinal treatment of ulcer in middle life.

Every textbook describes carcinoma of the stomach as associated with persistent vomiting of food eaten one, two or three days before, of lactic acid, coffee grounds,

descending colon is reached that obstruction is prominent, for in this region the contents are becoming solid. Here the attacks of obstipation are intermittent, often associated with diarrhea (fermentation or putrefaction). The first portion of the bowel to show classical gradually increasing obstruction is the sigmoid. Gross bleeding first makes its appearance with tumors of the rectosigmoid junction. Thus, the symptoms of cancer of the colon are not obstruction, vomiting and blood in the stools. On the right side they are vague cramps and distention. On the left, gradually increasing obstruction. Only near the rectum is hemorrhage prominent. Again the early signs do not correspond to the classical textbook cancer.

#### RECTUM

The average duration of symptoms in cancer of the rectum before operation was eight months, a shorter period than in colon, longer than in stomach cancer. Radical operation was possible in sixteen cases, or 26 per cent.; and three quarters of these patients, or 20 per cent. of the total—much higher than in cancer of the colon—recovered. These figures are a bit obscured, however, by the fact that operative indications apparently differed, and the reliance placed on radium differed: where some operators would do extensive resections, others believed in more limited excision and heavy radium therapy.

TABLE 1.—OPERATIVE RESULTS ON APPLICANTS FOR CURE OF CANCER AT HARPER HOSPITAL

Organ	Year	Number of Applicants	Average Duration of Symptoms Before Operation, Months	Per Cent. Operable	Radical Operations			Applicants Recovering from Operation,* per Cent.	Cures 5 Years, Mayo Clinic, per Cent.	Estimated Total Cures of Applicants, per Cent.
					Number	Deaths	Recoveries			
Stomach.....	1918 to June, 1922	82	6.7	16	13	8	5	6.1	25	1.5
Colon.....	1918-21	47	11.5	28	13	6	7	15.0	40	6.0
Rectum.....	1918-21	62	8.0	26	16	4	12	19.0	30	5.7

\* This refers to the number of operation recoveries for each hundred applicants

etc. In only 15 per cent. of the cases was vomiting noted as a prominent symptom, and many of these had long ulcer-like histories. Long before obstruction develops, the disease is incurable. Rarely was there coffee ground vomitus; bleeding was not a prominent symptom. Medical education must stress the early symptoms, even though vague, rather than the later ones, if we intend to operate on stomach cancer early.

#### COLON

The average duration of symptoms in cancer of the colon before operation was eleven and one-half months. Of the total number, thirteen, or 28 per cent., were available for radical operation, and only seven patients recovered. That is, in 15 per cent. of the total number of cases there was a chance for cure (Table 1). On the supposition that in 40 per cent. of colon resections the patients were alive after five years, we may estimate that 9.2 per cent. of the patients presenting themselves at the hospital with cancer of the colon may have been cured.

The histories in this group were not detailed enough to classify symptoms. Homans,<sup>5</sup> in a careful analysis of the symptoms of cancer of the colon, notes that the contents of the proximal half of the intestine (cecum, ascending colon, half of the transverse colon) are fluid. Here, early symptoms are intermittent appendicitis-like cramps, and gaseous distention. It is only when the

Mayo Clinic figures show 30 per cent. of patients who have had rectal resection alive after five years; therefore, 6 per cent. of our patients may have been cured.

Fourteen per cent. of the cases had a note in the history that hemorrhoids had been diagnosed; often treatment (such as salves or hemorrhoidectomy) had been previously given. Hemorrhoids are a frequent complication of cancer of the rectum, because of the increased vascularity. The impression gained by a perusal of the charts was that the early recognition of cancer of the rectum depends more on the attending physician than on the patient. It seemed that people were more likely to consult a physician for bleeding from the rectum than for constipation, dyspepsia or similar conditions. There were more patients who had noticed symptoms only a short while than in either of the other groups, and the larger number of early operations is perhaps explained by the fact that some of these patients had the proper advice. Routine high rectal examination will probably cure more cancer of the rectum than will popular propaganda.

#### BREAST

Because most breast cancers can be available for operation, estimates such as given for the stomach, colon or rectum cannot be stated. However, a rough approximation can be given: When the axilla is free from disease, the prognosis has been stated to be 80 per cent. of cures (Table 2). When the axilla is invaded,

5. Homans, J.: Symptomatology of Carcinoma of the Large Intestine, S. Clinics N. America 1:739 (June) 1921.



published figures show that the chance of cure is from 10 to 25 per cent. Of the patients coming to Harper Hospital from 1914 to 1920, 80 per cent. had metastases in the axilla; in only 20 per cent. was the axilla clinically free. That is, in four fifths of the patients, the chance of cure was 25 per cent.; in one fifth it was 75 per cent. (Table 2).

How early the axillary glands are involved, it is difficult to say. In twelve months they are uniformly infected.

It is easier to get breast cancer early than internal carcinoma, and it is certain that women are coming sooner for operation in this form than they did a few years ago. In 1914, the average duration of the tumor before operation was sixteen and one-half months. In 1920, it was ten months (Table 2).

Other figures are striking in this regard, and constitute an ardent testimonial to the efficacy of popular education. At Johns Hopkins<sup>6</sup> during thirty years, the percentage of benign lesions of the breast had changed from 32 to 59 per cent. of the total tumors of the breast,

months). Our problem, therefore, is proper therapy certainly before six months, preferably before three months.

POPULAR EDUCATION

It is not the purpose here to discuss the means of popular propaganda, but two items in the experience of the free hospital clinics held in Detroit during cancer week in 1921 and 1922 may be briefly detailed. "Come early; in the early treatment lies the hope of cure" must be given to vast audiences, and must be periodically repeated. Interest in the subject must often be created, and it is not always easy to present it properly; but these two difficulties are diminishing as the ball of publicity gains impetus in its rolling.

More stress must be laid on the symptoms of the commoner cancers than on the rarer forms. Thus, cancer of the stomach comprises more than one third of all malignancies; cancer of the skin, only 3 per cent. To instruct an audience to beware of rodent ulcers, irritated papules, and the like, will not make for as much control as instructing them to beware of suddenly

TABLE 2.—AVERAGE DURATION OF TUMOR BEFORE OPERATION, AND PROGNOSIS, IN CANCER OF THE BREAST

Duration, Harper Hospital			Prognosis	
Year	Months		Axilla Uninvolved	Axilla Involved
1914	16.5	Axilla involved, 80% Axilla uninvolved, 20%	Johns Hopkins Hospital..... 85% cured (5 yrs.) Rodman Hospital..... 80% cured (5 yrs.) Crile Hospital..... 80% cured (5 yrs.) Massachusetts General Hospital.....	25% cured 25% cured 12-14% cured 12-14% cured
1915	13.4			
1916	17.0			
1917	15.0			
1918	14.0			
1919	13.0			
1920	10.0			

TABLE 3.—PERCENTAGE OF CANCER DISCOVERED AT DETROIT FREE DIAGNOSIS CLINICS IN RESPONSE TO PUBLICITY (CANCER WEEK, 1922)

Hospital	Harper	Ford	Grace	St. Mary's	Providence	Receiving	Highland Park	Deaconess	Total	Pittsburgh Clinic
Total cases.....	98	78	27	38	27	28	12	13	321	122
Cancer cases.....	11	8	1	4	4	2	0	1	31*	12
Per cent. cancer .....	11.2	10.3	4	10.5	15	7.1	0	8	9.6	10

\* Cancer of skin, eleven; cancer of breast, ten; cancer of uterus, seven; cancer of mouth, three.

and the progression has been steadily accompanied by a shortening in the duration of the disease.

The first operative procedure in acute appendicitis was a stab into the edematous fluctuating abdominal wall just as the pulse was beginning to flicker and respirations were becoming labored. Cures were few, and the operation was in disrepute. That is where these figures place the surgical cure of gastric carcinoma. Many good internists today doubt that gastric cancer is ever cured with enough frequency to be called a possible outcome in a given case. The next stage in appendicitis therapy was incision into the edematous wall before fluctuation developed. Cancers of the rectum and colon may be said to stand in about this stage—from 20 to 15 per cent., respectively, surviving operation, and from 9 to 6 per cent. perhaps being cured. In breast cancer, we are perhaps operating in the stage of early abscess formation (to continue the appendicitis simile). The operation is here done from the fifth to the twelfth day, and our patients have some reasonable chance of cure. The clean early appendectomy, in which no worry is given to the prognosis, is, in this series, nowhere in sight. It might be noted that most cancers come for operation between the sixth and twelfth month (stomach, six and one-half months; colon, eleven and one-half months; rectum, eight

appearing indigestion. Furthermore, it is easier to deliver the message for external cancers than for internal, just as it is easier to diagnose external than internal cancers. This was noted in the results of the free cancer diagnosis clinics held during cancer week (Table 3). Twenty-eight per cent. of persons applying for examination in 1921, and 22 per cent. in 1922, came because the publicity made them suspicious of skin lesions—respectively, nine and seven times the normal ratio of incidence. Seventeen and 27 per cent. were suspicious of stomach cancers—one half and two thirds, respectively, of the normal ratio of incidence. Lesions of the colon and rectum show figures similar to those of the stomach, and breast and pelvic lesions occupy a middle position between external and internal growths.

The 321 patients of 1922 clinics were examined in eight different hospitals. Of these patients 9.6 per cent. were found to have cancer. It is curious to note how closely different groups of examiners found the same proportion of positive results. Thus, ninety-eight cases in one hospital showed eleven cancers; seventy-eight cases in another showed eight cancers; thirteen cases showed one cancer. In Pittsburgh,<sup>7</sup> in a similar clinic, of 121 patients examined, twelve were found to have cancers, as indicated in the accompanying chart.

7. The Pittsburgh figures I have through the courtesy of Dr. J. E. Rush of the American Society for the Control of Cancer.

6. Bloodgood, J. C.: Binnie Regional Surgery 1.



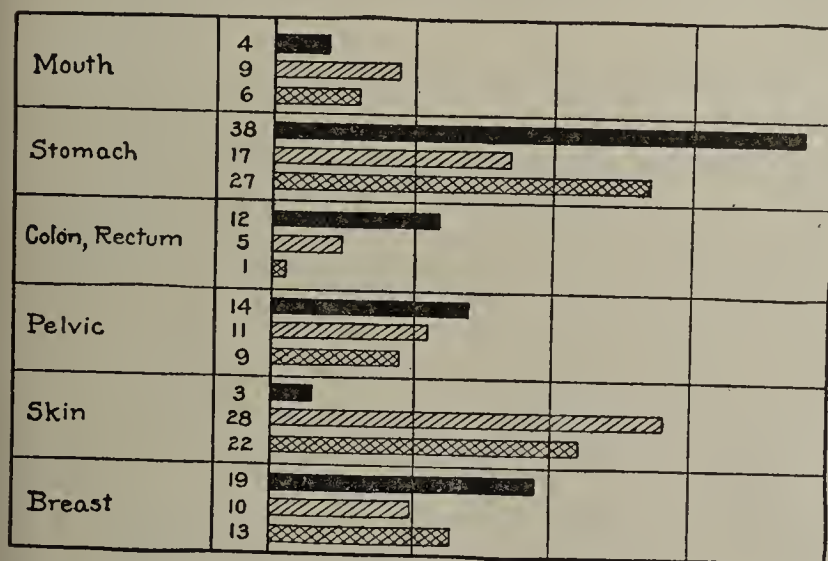
Perhaps further data will establish the fact that 10 per cent. of persons applying for examination in response to such publicity have cancer. Another 12.4 per cent. of these persons in Detroit had precancerous lesions (such as oral irritation, leukoplakia, benign tumors and pigmented mole), making the total cancer and precancerous conditions 22 per cent. In Pittsburgh, 13 per cent. had precancerous lesions, a total of 23 per cent.

## CONCLUSIONS

1. The cancer problem of a community should be stated in terms of the lateness of adequate treatment, and results of treatment in that particular community.

2. When thus stated, in the group of cases analyzed, probable cures did not exceed 1.5 per cent. of total hospital admissions for stomach cancer; 6 per cent. for colon, and 6 per cent. for rectum. In 80 per cent. of breast cases there was already involvement of the axilla, with the probable prognosis of from 15 to 25 per cent. of cures.

3. Early rather than classical symptoms must be stressed in considering gastro-intestinal cancer, if cases are to be adequately treated earlier.



Comparison of normal incidence of cancer with response to publicity: black, percentage of incidence of cancer of different body organs (U. S. mortality statistics); shaded, percentage of distribution of lesions (not necessarily cancer) in patients brought to Detroit hospitals by cancer week; diagonal shading, 1921, 162 patients; cross-hatching, 1922, 321 patients.

4. As it is more difficult to diagnose gastro-intestinal cancer, it is likewise more difficult for the public to respond to warnings for gastro-intestinal cancer than for external growths.

5. Ten per cent. of the patients examined at several different clinics in response to cancer week publicity had cancer. Another 12 or 13 per cent. had precancerous lesions.

269 Rowena Street.

**Normal Development of the Child.**—The way the child functions probably is one of the most important ways in which to determine whether a child is really normal or not. That is a field in which the nurse has peculiar opportunities, perhaps far more in her public health work than has the physician. By the general appearance of the child, the brightness of his eyes, the redness of his lips, the plumpness and rosininess of his cheeks, the way he stands, the way he walks, runs and plays, how soon he is fatigued, how he sleeps, how he eats, how he functions throughout the day and night, these are all points of observation, and also points of fact which have a great bearing on whether a child is really normal or abnormal.—W. P. Lucas, *Hospital Social Service* 7:5 (Jan.) 1923.

INCIDENCE OF HOOKWORM DISEASE  
AMONG PERSONS WHO WERE  
CURED FIVE YEARS AGO \*

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NEW YORK

This paper reports certain results obtained during a resurvey of an area on the island of Antigua, British West Indies, in which measures for the relief and control of hookworm disease were terminated five years ago. Both the treatment campaign, extending from September, 1915, to June, 1917, and the resurvey, made during April and May, 1922, were conducted under the auspices of the International Health Board of the Rockefeller Foundation. The paper is of interest primarily because it records the results of a careful study of hookworm infection among persons whom microscopic examination had previously shown to be cured of the disease. The findings which it presents are in complete accord with observations made by Smillie<sup>1</sup> under analogous circumstances in Brazil. It demonstrates certain fallacies in campaign procedure, and emphasizes the need for definite measures in order that permanent hookworm control may be attained.

## PHYSICAL FEATURES OF THE ISLAND

Antigua is one of the Leeward Islands of the British West Indies. It is located in latitude 17° 5' north and longitude 61° 50' west, thus lying within the tropics. The island is 12 miles long, 9½ miles wide, and 70 miles in circumference. Its area is 108 square miles, or about 69,275 acres. Roughly speaking, there are three geologic areas: the limestone area, comprising the northeastern third of the island; the volcanic area, occupying the southwestern third, and, between the two, a broad, flat area called the Central Plain, which is undoubtedly an old sea bottom. This report deals with the entire southwestern third of the island, including practically all of the volcanic area and about half of the Central Plain. All previous hookworm studies indicated that the infection was heaviest in this section of the island, and it was therefore chosen for the resurvey. Without going into burdensome detail, it may be said that the conditions of soil, rainfall and drainage, as well as the physical characteristics of this region, are more conducive to the spread of hookworm disease than are those of other sections.

## WORK OF THE ORIGINAL CAMPAIGN

During the treatment campaign of 1915-1917, 7,477 persons were examined in the area which was later resurveyed. Of these, 2,229, or 29.8 per cent., were found infected with hookworm disease. Of the infected persons, 1,972 were cured, so far as this could be determined by the microscope. The anthelmintic used was thymol, exclusively; the maximum dose given was 40 grains (2.6 gm.). Each person was treated until no hookworm ova could be found in the stools. The microscopic technic employed consisted of the examination of four fecal smears on 1½ by 3 inch glass slides; two such preparations were examined before, and two after, centrifuging. If hookworm ova were found on any of the four slides, the specimen was called negative. At the completion of the control cam-

\* The studies and observations on which this paper is based were conducted with the support and under the auspices of the International Health Board of the Rockefeller Foundation.

1. Smillie, W. G.: The Results of Hookworm Disease Prophylaxis in Brazil, *Am. J. Hyg.* 2: 77 (Jan.) 1922.



paign, all treatment ceased, as no organization was left to carry on the work.

When the treatment campaign was practically finished, the authorities of Antigua built pit latrines throughout the resurveyed area and appointed part-time sanitary inspectors to see that these were properly maintained. No latrines have been constructed since February, 1920, and no organized hookworm-control measures have been in force since June, 1917.

#### RESURVEY FINDINGS

In April, 1922, a sanitary study of the resurveyed area disclosed certain facts bearing on the hookworm incidence. The region was a rural district, which,

TABLE 1.—INCIDENCE OF HOOKWORM DISEASE IN RELATION TO AGE AND SEX OF THE 1,234 PERSONS REEXAMINED IN 1922

Age, Years	Total			Male			Female		
	Exam-ined	Infec-ted	Per-centage	Exam-ined	Infec-ted	Per-centage	Exam-ined	Infec-ted	Per-centage
6 to 18	243	44	18.1	121	28	23.1	122	16	13.1
19 to 40	503	116	23.1	191	51	26.7	312	65	20.8
41 to 60	340	65	19.1	147	21	14.3	193	44	22.8
Over 60	148	37	25.0	70	17	24.3	78	20	25.6

except for domestic gardens, was given over entirely to the raising of sugar cane. The population, which numbered 7,166, was made up entirely of negroes of the agricultural laboring class. The water supply, purely of surface origin, was entirely inadequate and was subject to surface contamination of all sorts, especially pollution with human fecal material. Undoubtedly, it plays a part in the dissemination of hookworm disease. Rural sanitation and hygiene were of a very primitive type. One hundred and forty-one latrines, all badly in need of repair, were found; this was one latrine for every fifty people. Of these latrines, ninety-one were built by government and fifty were the result of private initiative. No latrines were discovered in the fields. Overcrowding and the financial limitations of the health department are other factors disclosed by the sanitary survey which have relation to the incidence of hookworm disease.

During the resurvey, 1,234 (62.6 per cent.) of the 1,972 persons cured in 1915-1917 were reexamined for the presence of hookworm ova. Of the remaining 738 persons, 184 were dead, 279 had left the island, 141 lived in places that were inaccessible during the time available, 34 could not be found, 100 refused to submit specimens, and 66 had failed to return their specimen containers when the survey was terminated. In order that the results might be comparable, identically the same method of examining the specimens was followed in 1922 as in 1915-1917.

In 1915-1917, the general mass rate of infection in the resurveyed area was 29.8 per cent. In 1922, 1,234 of the 1,972 persons who had been freed of hookworm in 1915-1917 were reexamined, and 262, or 21.2 per cent., of them were found infected. All the persons examined in 1922, however, were known to have harbored hookworms five years previously, and it was, therefore, thought probable that some of the infection was continued infection rather than reinfection. In view of this fact, a group of 300 persons was examined who were known to have been free from hookworms in 1915-1917. Of these, 16.3 per cent. were infected. Thus, although the number of persons examined in these two groups is far from equal, it is perhaps permissible to conclude that at least 4.9 per

cent. of the infection found in 1922 among those cured in 1915-1917 is continued infection rather than reinfection. This figure is in keeping with results reported by Darling and Smillie,<sup>2</sup> who show clearly that it is futile to expect to eradicate *all* the worms by treatment, and that the microscope is not an infallible index of cure. Of the persons who were cured in 1915-1917, 78.8 per cent. showed no evidence of ova in the stools five years later. In view of the sanitary facilities available and living conditions in general, this cannot be said to be an unfavorable result.

#### REINFECTION IN RELATION TO AGE AND SEX

The infection rate in relation to age and sex among the 1,234 persons reexamined in 1922 is shown in Table 1. No similar data were collected in 1915-1917, so that a comparison cannot be made. It will be noted that no particular age group or sex shows an outstanding tendency to reinfection; the incidence of the disease is fairly evenly distributed throughout all the groups, although girls from 6 to 18 years of age show less tendency to reinfection than other groups. The great reservoir of present infection, in relation to the number examined, seems to lie in the group from 19 to 40 years of age. This is especially noticeable in the male group of this age.

#### OCCUPATIONAL INCIDENCE OF REINFECTION

Of the 1,234 persons reexamined in 1922, 894 were field laborers, sixty-three worked indoors, chiefly in sugar factories, fifty were housewives, and 227, who were under 18 years of age, were classed as children. The infection rates within these groups are presented in Table 2. Similar data for 1915-1917 are not available for comparison.

The large majority of the persons examined were field workers, and most of those included in the "housewife" and "children" groups spend considerable time in the fields. It is not surprising, therefore, to find the heaviest infection rates within these groups. But soil pollution is extensive, and there is ample possibility of "dooryard" infection for housewives and children. It

TABLE 2.—INCIDENCE OF HOOKWORM DISEASE IN RELATION TO THE OCCUPATION OF 1,234 PERSONS REEXAMINED IN 1922

Occupation	Examined	Infected	
		Number	Per Cent.
Field.....	894	210	23.5
Indoor.....	63	2	3.2
Housewife.....	50	11	22.0
Children.....	227	39	17.2

is interesting to note that only two of the sixty-three persons who were cured in 1915-1917 and have since worked indoors were reinfected.

#### SHOE-WEARING A PROTECTION AGAINST INFECTION

The data concerning the infection rate in relation to the wearing of shoes show that of 960 persons who did not wear shoes at all, 214 (22.2 per cent.) were infected; of 245 who wore shoes part of the time, forty-four (17.9 per cent.) were infected; and of twenty-nine who wore shoes constantly, four (13.7 per cent.) were infected. As would be expected, the infection rate was higher among persons who did not wear shoes at all.

2. Darling, S. T., and Smillie, W. G.: Studies on Hookworm Infection in Brazil, Monograph 14, Rockefeller Institute for Medical Research, Feb. 1, 1921.



## RELATION BETWEEN INFECTION AND HEMOGLOBIN INDEX

Tallqvist hemoglobin determinations were made by the field men; but as it was not possible to rule out all causes of anemia other than hookworm disease, the hemoglobin must be interpreted only as a very rough index of the intensity of infection. The results of these observations are recorded in Table 3.

Only 1.1 per cent. of the infected persons had hemoglobin readings below 60 per cent., and in these cases the low index may have been due to causes other than hookworm disease. It will be seen also that 24.4 per cent. of the infected persons had hemoglobin readings

TABLE 3.—HEMOGLOBIN (TALLQVIST) PERCENTAGES IN RELATION TO INFECTION WITH HOOKWORM DISEASE AMONG 1,197 OF THE PERSONS RE-EXAMINED IN 1922 \*

Hemoglobin, per Cent.	Number Not Infected	Number Infected	Total Number Infected, per Cent.
0-9.....	...	...	...
10-29.....	...	...	...
30-49.....	4	3	1.1
50-69.....	229	64	24.4
70-89.....	559	149	56.9
90-100.....	143	46	17.6

\*Thirty-seven of the 1,234 persons reexamined refused the hemoglobin test.

between 50 and 69 per cent. (no reading was below 60 per cent.), but that 229 (23.5 per cent.) of the noninfected persons had the same values; and 149, or 56.8 per cent., of the infected persons and 559, or 57.5 per cent., of the noninfected persons had hemoglobin readings between 70 and 89 per cent. Of the 251 persons who are known to have been free from hookworm in 1915-1917 and also in 1922, sixty-five, or 25.8 per cent., had hemoglobin readings between 60 and 69 per cent., while 172, or 64.1 per cent., had readings between 70 and 89 per cent. (Four of the 251 persons refused to allow the test.) Forty-six (17.5 per cent.) of the infected persons and 143 (14.7 per cent.) of the noninfected persons had hemoglobin values above 90 per cent. Thus, it is seen that the degree of anemia in infected persons was no greater than in noninfected persons; which is in keeping with the fact that it was almost impossible to differentiate clinically between infected and noninfected persons. This is undoubtedly explained by the brilliant work of Smillie in Brazil, who found that the infection rate was almost exactly the same after four years of hookworm disease prophylaxis as it was before, but the actual number of hookworms harbored by the treated persons averaged only fourteen, a number too small to cause symptoms. He therefore draws a definite distinction between hookworm *infection* and hookworm *disease*, feeling that the disease has been eradicated and that the remaining harmless infection will soon disappear owing to its self-limited nature.

## CORRELATION BETWEEN NUMBER OF TREATMENTS RECEIVED AND REINFECTION

In 1915-1917, the only drug used in treatment was thymol. The number of treatments necessary before a "cure" was effected varied from one to seventeen. Table 4 shows the infection rate in 1922 in relation to the number of treatments given the same persons in 1915-1917 before they were pronounced cured.

It is interesting to note that, in the case of only three of the 1,234 persons reexamined in 1922, had hookworms been eradicated in 1915-1917 by one treatment

of thymol, and none of these were reinfected. In general, as the number of treatments received in 1915-1917 increases, the rate of reinfection in 1922 increases, especially up to the eighth treatment. Darling and Smillie<sup>2</sup> have shown that the microscope is not a reliable index of cure, and that in persons harboring from five to twenty hookworms the ova may not be discovered in the stools. It is highly probable that many of these apparent reinfections, especially after the fifth or sixth treatment in 1915-1917, were continued infections.

## INCIDENCE OF PARASITES OTHER THAN HOOKWORM

Table 5 shows the number and percentage of persons who in 1922 were found infected with intestinal parasites other than hookworm. The incidence of parasites in persons who were cured in 1915-1917 is contrasted with the incidence in persons who were not examined and not treated in 1915-1917. These data, however, do not represent an exhaustive search for parasites other than hookworm, but merely record the ova which were found during examination of specimens for hookworm ova. As soon as the latter were found, the specimen was discarded, and no further search was made for other parasites. In general, the persons who were treated and cured in 1915-1917 did not, in 1922, show a markedly decreased incidence of intestinal parasites other than hookworm, as compared with persons who were not treated in 1915-1917. The percentage of infection with *Ascaris lumbricoides* was less by 10.3 per cent., and with *Trichuris trichiura*, by 7.7 per cent., among those persons who were treated in 1915-1917. In 21.6 per cent. of the persons who were cured in 1915-1917, no parasites were discovered in 1922; while 19.7 per cent. of the persons who were not previously

TABLE 4.—INFECTION WITH HOOKWORM DISEASE IN 1922 IN RELATION TO THE NUMBER OF TREATMENTS GIVEN IN 1915-1917 BEFORE A "CURE" WAS OBTAINED

Number of Treatments, 1915-1917	Results of Examination of the Same Persons in 1922		
	Number Examined	Number Infected	Per Cent. Infected
1.....	3	0	...
2.....	491	71	14.4
3.....	229	49	21.4
4.....	162	42	25.9
5.....	118	33	28.0
6.....	72	15	20.8
7.....	46	14	30.4
8.....	37	17	45.9
9.....	20	3	15.0
10.....	12	5	41.7
11.....	13	2	15.4
12.....	5	2	40.0
13.....	6	2	33.3
14.....	3	1	33.3
15.....	2	1	50.0
16.....	1	1	100.0
17.....	2	1	50.0
Not stated.....	9	3	33.3

treated had no intestinal parasites in 1922. Five years after treatment for hookworm disease in an inadequately sanitized area, very little change had occurred in the parasitic content of the intestines of treated persons.

## EFFECT OF SANITATION ON RATE OF INFECTION

During the treatment campaign of 1915-1917, there were no latrines in the resurveyed area. In 1922, in the same area, there were 141 latrines and 1,966 inhabited houses, so that 7.1 per cent. of the homes had latrine accommodations. In 1915-1917, the infection rate was 29.8 per cent., and, in 1922, 21.2 per cent. In



other words, with an increase of 7.1 per cent. in the latrine accommodations, there was a fall in the infection rate of 8.7 per cent.

Table 6 is a brief summary of information obtained regarding the use of latrines by 1,234 persons who were cured in 1915-1917 and reexamined in 1922. Of these, it will be seen, thirty-three (2.6 per cent.) said they used latrines, and four of the thirty-three were infected; 1,201 (97.3 per cent.) said they did not use latrines, and 258 were infected. The table also shows that 98.5 per cent. of the reinfection occurred among persons who did not use latrines.

The decrease of 8.6 per cent. in the hookworm infection rate in 1922 cannot be attributed entirely to the treatment and sanitation work of 1915-1917. As already shown, 97.3 per cent. of the people examined did not use latrines; so it does not seem that sanitation could be responsible for much of the decrease. For ten months immediately preceding the resurvey of 1922, the average monthly rainfall in the resurveyed area was 31.2 per cent. less than it was during a similar period immediately preceding the treatment campaign of 1915-1917. Also, during the 1922 observations, the monthly rainfall was 64.9 per cent. less than it was during the 1915-1917 observations. Diminished rainfall and resultant surface conditions nonconducive to the development of hookworm larvae may account for much of the diminished infection rate in 1922. Approximately one-sixth as many persons were examined in 1922 as in 1915-1917, a fact which must also be considered in explaining the lower infection rate found in 1922. For all practical purposes, infection with intestinal parasites among the persons who were cured of hookworm disease five years ago may be said to have reverted to the same incidence existing before any treatments were given.

MEASURES NECESSARY FOR PERMANENT HOOKWORM CONTROL

The foregoing observations emphasize the obvious requirements for permanent results in hookworm control. It is evident that no treatment work should be

TABLE 5.—PARASITES OTHER THAN HOOKWORM WHICH WERE FOUND IN PERSONS REEXAMINED IN 1922

Parasites Harbored	Type of Case Examined	Infected	
		Number	Per Cent.
Asearis lumbricoides.....	Cured*	592	48.0
	New†	175	58.3
Trichuris trichiura.....	Cured	543	44.0
	New	155	51.7
Strongyloides.....	Cured	307	24.9
	New	59	19.7
Schistosoma mansoni.....	Cured	72	5.8
	New	2	0.7
Balantidium coli.....	Cured	2	0.2
	New	..	....
No parasite.....	Cured	266	21.6
	New	59	19.7

\* Cases of 1,234 persons who were "cured" in 1915-1917.  
† Cases of 300 persons who were not examined and not treated in 1915-1917.

started in an area which has not been previously sanitized. Varying opinions obtain as to the length of time that should elapse between sanitation and treatment, but a conservative estimate is six months. It is held by some that sanitation should accompany or follow the treatment campaign; but it seems logical to reduce the possibilities of reinfection to a minimum before treatment is undertaken. In a well-organized campaign, sanitation in a given district can always be completed during treatment operations in other districts.

If this plan is followed, however, the sanitation campaign must be accompanied by much more educational propaganda than is necessary when it follows the treatment campaign, a measure which in itself is of considerable value to the community. Latrines should be built not only at the homes of the laborers but also in the fields where they work, for it is in the latter places that most of the infection occurs. The skin of the feet and legs should be protected from contact with infested

TABLE 6.—INFECTION RATE IN 1922 IN RELATION TO THE USE OF LATRINES

Population of the area.....	7,166
Number of latrines.....	141
Average number of persons using each latrine.....	50.8
Number of persons examined.....	1,234
Number found infected.....	262
Persons stating that they use latrines.....	33
Number infected among persons claiming to use latrines..	4
Per cent. infected of number claiming to use latrines.....	12.1
Per cent. of total number infected.....	1.5
Persons stating they did not use latrines.....	1,201
Number infected among persons not using latrines.....	258
Per cent. infected of number not using latrines.....	21.5
Per cent. of total number infected.....	98.5

earth by shoes or other covering. Intensive treatment work should not be discontinued until an organization competent to continue control operations is functioning. The construction of latrines is only the beginning of sanitation. Public health education is the power that keeps in motion the machinery of sanitation. An organization competent to maintain unrelaxed public health education, sanitation and treatment is essential to the maintenance of the results of hookworm-disease prophylaxis.

SUDDEN DEATH IN SCARLET FEVER

REPORT OF TWO CASES \*

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During a period of nine years (1913-1921), 2,322 patients with scarlet fever were treated at the Durand Hospital, with a total mortality of eighty-five, or 3.7 per cent. In two instances, death occurred suddenly and unexpectedly with only slight premonitory signs, and when each patient appeared to be on the road to convalescence.

REPORT OF CASES

CASE 1.<sup>1</sup>—A previously healthy woman, aged 23, complained of sore throat, March 16, 1914, followed in six hours by a chill, headache, backache, nausea, a temperature of 103 F., a pulse of 110, and respirations numbering 24. The following day a typical scarlet fever rash appeared on the chest and rapidly spread over the body. There was a whitish exudate on the tonsils from which no diphtheria bacilli could be cultivated. The temperature ranged from 102.8 to 104.4 F., and the pulse from 110 to 120. March 18, the fever and pulse were about the same as on the previous day. There was a trace of albumin in the urine, with many leukocytes but no casts. Though next day the fever and pulse continued about the same, a few granular casts appeared in the urine, and the leukocytes in the blood numbered 26,350, of which 85 per cent. were polymorphonuclears. March 20, the temperature was from 101.5 to 102.8 F., the pulse 88 to 120. The cardiac apex was beneath the fifth rib, 2 cm. to the left of the midclavicular line, and hard to localize. As determined by percussion, the cardiac border was beneath the third rib about 3 cm. to the left of the midclavicular line on the left,

\* From the Durand Hospital of the John McCormick Institute for Infectious Diseases.  
1. This case was referred to by Rosenbaum (Arch. Int. Med. 26: 424 [Oct.] 1920).



and at the right sternal edge on the right. No murmurs or friction sounds were heard. On the morning of March 21, the sixth day of the illness, the patient felt and appeared better. The temperature ranged from 101.7 to 102 F., and the pulse from 110 to 114. The administration of an enema of 1,000 c.c. of salt solution was completed at 11:30 a. m., and it was expelled ten minutes later. At 11:45 a. m., with no exertion other than the expelling of the enema, the patient became cyanotic, pulseless, gasped a few times, and was dead at 11:50, in spite of stimulation and artificial respiration. No necropsy could be obtained.

CASE 2.—A woman, aged 34, was taken suddenly sick with a sore throat, fever and general aching, Sept. 28, 1921. She continued to have fever, headache and diarrhea, and on October 2, a rash appeared on the neck and chest and rapidly spread over the body. October 3, she was admitted to the Durand Hospital. The trunk and extremities were covered by a pronounced typical scarlet fever rash. The throat was very red, with a thin, grayish white exudate covering both tonsils and extending to the velum palati, from which no diphtheria bacilli could be cultivated, but yielding abundant colonies of hemolyzing streptococci on blood agar plates. The tongue was coated with prominent papillae. There were 25,300 leukocytes in the blood, of which 92 per cent. were polymorphonuclears, 5 per cent. large mononuclears and 3 per cent. small mononuclears. During the day the temperature ranged from 101 to 103.2 F., and the pulse from 110 to 116. Aside from the increased rapidity of the beat, nothing abnormal was found in the heart. October 4, the seventh day of illness, there was pain in the right shoulder and wrist joints, and in the left wrist. The patient seemed better, and the rash was fading. The temperature ranged from 101 to 103.4 F., and the pulse from 100 to 104; the pulse was regular and of good quality. At 9:45 p. m., the patient was made comfortable by her nurse, and said she felt much better and thought she could sleep. At 10 p. m., she was found dead. She had not moved from the position she occupied when last seen by her nurse, and the bed covers were undisturbed.

A necropsy was performed, October 5. The anatomic diagnosis was scarlet fever, fading exanthem, early desquamation about the neck; hyperemia and edema of the larynx and fauces; ulcerative and exudative tonsillitis; cervical adenitis; acute dilatation of the heart, with marked acute degenerative changes; petechiae of the myocardium; passive congestion and cloudy swelling of the liver, kidneys and spleen; splenic tumor, passive congestion and petechiae of the stomach and intestines; old healed pulmonary tuberculosis, with fibrous obliteration of both pleural cavities; chronic interstitial nephritis.

The heart weighed 425 gm., and was dilated, soft and flabby, filling the entire pericardial sac. The foramen ovale was closed. The endocardium was smooth and shiny; the valves were unchanged. The myocardium was red-yellow, and the cut surfaces showed many petechiae throughout. The wall of the left ventricle was 1 cm. across; the right, from 4 to 5 mm.; the interventricular septum, 1.2 cm. The aorta was unchanged save for a few scattered calcareous plaques. Histologic sections from the wall of the right and left ventricle, the interventricular septum, through the bundle region, and near the apex showed marked fragmentation of the muscle fibers, loss of striations, with faint staining nuclei, and congestion of the small blood vessels with hemorrhage. There was no round cell infiltration.

#### COMMENT

In each of these instances, death occurred very suddenly on the sixth and seventh day of sickness, and on the fourth and third day after the appearance of the eruption.

In the first case the patient suddenly became very cyanotic and pulseless, with gasping and infrequent respirations, and in spite of stimulants and artificial respiration died within five minutes after the first alarming symptoms appeared. In the second case, death occurred without the slightest warning.

Nothnagel<sup>2</sup> says that "sudden cessation of cardiac action preceded by no warning has been observed in scarlet fever very rarely, and not nearly so often as in diphtheria." Trousseau,<sup>3</sup> in his clinics, emphasizes that "of all the exanthematic fevers, scarlatina is the one in which it is least possible to foresee the danger; it presents complications usually unexpected, which the most experienced practitioner cannot foresee, even when they are imminent," and "there is no disease so disconcerting to the physician or in which his previsions so often prove erroneous."

Gouget and Deschaux<sup>4</sup> report a case of a youth, aged 19, who had dull heart tones, bigeminate pulse, and arrhythmia at times, almost from the beginning, the pulse varying from 70 to 142 a minute. This continued irrespective of treatment. The night of the third day the patient got out of bed. The next morning he felt weak but better, when suddenly he threw back his head and became cyanotic, the pupils dilated, and respiration became noisy, irregular and ceased in a few minutes. At postmortem the heart was hypertrophied, especially the left ventricle, which was rather firm, while the right was flabby and little hypertrophied. The myocardium was red-yellow, streaked with yellow. Around the base there was a fresh pericarditis; along the anterior coronary arteries, petechiae were seen. Histologically, there was a myocarditis with round cell infiltration, chiefly perivascular, and also pushing the fibers aside. Near the external surface, particularly, there was a fragmentation of muscle fibers, their nuclei staining faintly, and there was a loss of striations. The other organs were negative. Gouget and Deschaux attribute the cause of the sudden death to an acute myocarditis. They also state that "there usually are no pathologic findings that would account for death; sometimes the tissues are normal, and in others there are lesions which could not account for death, as the histologic findings bear out."

Weil and Mouriquand<sup>5</sup> report a case of sudden death in a girl, aged 18 months. One month before, she was supposed to have diphtheria, but all cultures were negative. On the thirteenth day following a typical onset of a moderately severe case of scarlet fever, she seemed much better; her temperature and pulse were normal. That evening she was found dead in bed. At necropsy the heart was soft, yellow-red, but otherwise unchanged. Histologic diagnosis was acute myocarditis, with perivascular and interstitial round cell infiltration, and also fragmentation of the muscle fibers. Weil and Mouriquand believe that death was due to acute myocarditis with no clinical manifestations; that myocarditis occurs more often in convalescent scarlet fever than one thinks, and that while they do not deny that in some instances sudden death may be due to lesions of the suprarenals, it is absolutely necessary to examine the myocardium, for often one finds there the cause without having to look elsewhere. There are also cases, such as those reported by Goldschmidt<sup>6</sup> and by Roger,<sup>7</sup> in which death came on from three to seven hours after the appearance of grave symptoms. Gouget and Deschaux<sup>8</sup> believe that these mark the transition between the classical cases of malignant scarlet fever

2. Nothnagel: *Encyclopaedia of Practical Medicine*, 1902, p. 561.

3. Trousseau, quoted by Gouget and Deschaux: *Internat. Clin.* 3: 204, 1909.

4. Gouget and Deschaux: *Presse méd.* 19: 17, 1911.

5. Weil and Mouriquand: *Presse méd.* 19: 641, 1911.

6. Goldschmidt: *Bull. et mém. Soc. méd. d. hôp. de Paris* 22: 521, 1905.

7. Roger, H.: *Rev. de méd.* 21: 369, 1901.

8. Gouget and Deschaux: *Internat. Clin.* 3: 204, 1909.



and those in which death occurs in an unforeseen and sudden manner.

Gouget and Deschaux, in their own cases and in those compiled by Duclos<sup>9</sup> and others from the literature, point out the striking similarity in their histories. "It is always on the fourth or fifth day that the symptoms appear, and in a very short space of time the patient passes from a relatively satisfactory state of health to one of utmost seriousness. The temperature rises abruptly, the pulse can no longer be counted, and in from two to four hours, perhaps a little longer, everything is over." In short, "it is the tableau of a case of malignant scarlet fever reduced to its final phase, and suddenly grafted on a case which up to that time followed normal evolution. Less commonly it may occur later when the disease is beginning to decline." In their cases in which postmortem examinations were made, they were unable to explain the cause of death.

#### CONCLUSIONS

1. The virus or toxins of scarlet fever seem to have an especially deleterious effect on the heart in some cases, as Welch and Schamberg<sup>10</sup> point out. In those reported by Gouget and Deschaux, by Weil and Mouriquand, and also in ours, direct action on the myocardium is apparent. Broadbent<sup>11</sup> is inclined to believe that it has its action on the heart ganglions. No evidence was found in our case to bear out this view.

2. Since grave myocardial lesions may not be apparent clinically, and since in many of these cases death has followed some slight physical exertion, it would seem that absolute rest in bed is indicated in all cases of scarlet fever, especially during the acute stages, and more particularly in those in which one may suspect myocardial lesions.

### DIPHTHERIA PREVENTION AMONG CHILDREN OF PRESCHOOL AGE

IN THE BOROUGH OF MANHATTAN AND THE  
BRONX IN NEW YORK \*

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Statistics on diphtheria verify the clinical experience as regards the high morbidity and mortality from the disease in young children. From 80 to 85 per cent. of all cases of diphtheria and all deaths from the disease occur in children under the age of 5 years. This group, therefore, represents the most important part of the population that has to be protected against diphtheria, and the most suitable for immunization.

In proportion to its importance are the difficulties that have to be met and overcome. These young children are scattered in the individual homes, and cannot be reached as readily as schoolchildren in large groups.

9. Duclos: *Rev. gén. de clin. et de therap.* 9: 33 (Part 2) 1895.

10. Welch and Schamberg: *Acute Infectious Diseases*, Philadelphia, 1905, p. 443.

11. Broadbent: *Jahrb. f. Kinderh.* 30: 491, 1914.

\* Read before the Section on Pediatrics of the New York Academy of Medicine, Nov. 9, 1922.

\* This article is abbreviated in THE JOURNAL by the omission of several forms. The complete article will appear in the author's reprints.

\* The diphtheria prevention work in New York City, which is under the general direction of Dr. William H. Park, is carried out by two different groups of workers. The boroughs of Manhattan and the Bronx are assigned to the supervision of the author, and those of Brooklyn, Queens and Richmond to Dr. C. M. Schroder. The methods used by the two groups are in most respects the same, but they differ in certain details because of local conditions or the opinions of the immediate supervisors.

The parents have to be seen and convinced before they will consent to the immunization of their children. All this requires considerable effort and time on part of the health officer, the public health nurse, and others.

The diphtheria prevention work in the schools is a valuable preliminary step to any attempt to immunize the children of preschool age. Through the schools, the parents will soon learn to appreciate the value and the harmlessness of these newer measures of diphtheria

BABY HEALTH STATION	
Important Official Notice	
DIPHTHERIA PREVENTION	
Department of Health	City of New York
Protect your young children against Diphtheria! Next week the doctor will vaccinate against Diphtheria the children of the Baby Health Station and also all those who are too young to go to school. Be sure to ask the nurse about this wonderful opportunity as soon as you receive this card. She will give you all the information you need. Also tell your neighbors who have young children about it. These injections may save your children's lives!	
This is a special opportunity which the Department of Health offers to you. Will you not take advantage of it?	
The doctor will give the protective injections on..... during the month of.....	

Fig. 2.—Folded mailing card.

prevention. Many homes can thus be reached in a short time. The consent blanks and other literature taken home by the children tell the parents all about the work. The prestige of the school is behind this work, and the parents have to take a definite action by either giving consent or refusing to do so. We found in our school work that the wholehearted cooperation of the principal and teachers was of greatest importance to obtain successful results in a school. In some of the schools we were thus able to obtain consent from fully 60 to 80 per cent. of the parents.

The campaign of last summer to reach the children of preschool age, therefore, was a logical sequence to the extensive work that was carried out in the public schools of New York City. More than 800,000 homes had been reached with the literature on diphtheria prevention. In the boroughs of Manhattan and the Bronx alone over 150,000 schoolchildren were given the Schick test. Those showing a positive reaction received the injections of toxin-antitoxin. An almost equal number were tested in Brooklyn and Queens. Repeated newspaper publicity had also been of some value. In most of the homes where there are children, the parents knew what modern diphtheria prevention meant. Many of them asked us where they could take their younger children to have them immunized against diphtheria.

The work among children of preschool age, including those between 6 months and 6 years of age, was started July 1, and carried out during the months of July and August and the first two weeks of September. In Manhattan and the Bronx, the injections were given in all the baby health stations of the department of health, in five similar stations of the New York Diet Kitchen Association, and in many of the mothers and babies' playgrounds located during the summer in the play yards of the public schools.

#### CIRCULARIZATION OF THE HOMES

(a) The first step was to notify the parents that they now had the opportunity to have their children who were too young to go to school immunized against



diphtheria. A carefully worded circular emphasizing the dangers of diphtheria for young children was distributed through the schools just before the summer vacation. This circular was printed in English, Italian and Jewish, and gave a list of the baby health stations.

Of these circulars, 150,000 were distributed through the public schools of Manhattan and the Bronx. The cooperation of the principals and teachers was solicited in asking the children to take the circulars home to their

DEPARTMENT OF HEALTH—CITY OF NEW YORK	
DIPHTHERIA VACCINATION CERTIFICATE	
This is to certify that..... Age.....	
residing at.....has received the three protective	
injections of toxin-antitoxin against DIPHTHERIA. The final DIPH-	
THERIA PROTECTION CERTIFICATE will be issued when the child	
is given a Schick test after admission to school and shows a nega-	
tive Schick reaction.	
ISSUED BY.....M.D.,	
Medical Inspector.	ROYAL S. COPELAND, M.D.,
DATE.....	Commissioner.

Fig. 4.—Temporary diphtheria vaccination certificate.

parents and notify them on what days during the month the physician would give the injections at a neighboring baby health station. Fifty thousand additional circulars were distributed through the nurses at the baby health stations, and also through the nurses of the bureau of preventable diseases, the Henry Street Settlement, the Society for Improving the Condition of the Poor, the Charities Aid Organization and the American Red Cross. Ten thousand circulars were also distributed by private physicians among their patients.

(b) An important and effective method of reaching many parents was through a folded mailing card, which was sent to all those mothers whose babies had been registered at the baby health stations during 1920 and 1921, and in some instances also during 1918 and 1919.

Forty-five thousand of these cards, printed in English, Italian and Jewish, were sent out.

Five thousand cards and 10,000 circulars were posted in the hallways of tenement houses, windows of stores, and other available places.

(c) We were greatly hampered in our work by the fact that the injections of toxin-antitoxin had to be given in the afternoons, when the baby health stations are ordinarily closed, rather than in the mornings, when the parents come for milk and bring their children to be seen by the physician. This was necessary, however, to avoid overcrowding the stations in the mornings. We utilized the clinic in the morning by assigning to the station a nurse from our group, whose duty it was to speak to parents, notifying them when to come to the stations for the injections, and to distribute circulars and special tickets for each child.

(d) A baby health contest in the Bronx and gatherings of groups of parents at the schools also afforded an opportunity for propaganda work.

#### OUTLINE OF THE WORK

*Organization of the Personnel.*—In the group working in the boroughs of Manhattan and the Bronx, there were seven part-time physicians, four nurses, and three laboratory assistants. These were divided into seven teams, each team consisting of a physician and a nurse or a laboratory assistant. Four teams were assigned to the baby health stations, and three teams to the mothers

and babies' playgrounds. The schedule was so arranged that each team was assigned to a different station during the six days of the week, returning to the stations on the same days during the entire month. In this way, the physicians came back to each station during four or five afternoons in one month.

A printed schedule of the baby health stations was distributed to all the nurses of the department and to the various organizations assisting in this campaign. This helped considerably in coordinating the work.

During the month of July, the injections were given in twenty-four baby health stations and fifteen playgrounds. A similar number of stations and playgrounds were visited during the month of August, the work in these stations being continued through the first two weeks in September.

In the mothers and babies' playgrounds, the preliminary propaganda work was done partly by the teachers in charge of the play yards, and partly by the physicians and nurses of the different teams. Since many of the parents usually left their younger children in charge of the older ones, it was necessary to send home consent blanks, which had to be signed by the parents before the injections could be given.

*Toxin-Antitoxin Injections With or Without the Schick Test.*—Each child was given the Schick test. The control test was omitted, as children under 5 or 6 years of age seldom show pseudoreactions.

Although each child received the Schick test, we did not guide ourselves by its results in giving the injections of toxin-antitoxin. The first injection was given at the same time as the Schick test, the second injection a week later and the third injection two weeks later. In giving the toxin-antitoxin injections to all children irrespective of the results of the Schick test, we wished to emphasize the advisability of immunizing all children between 6 months and 6 years of age with three injections of toxin-antitoxin.

It is always permissible and frequently advisable to omit the Schick test and give the injections of toxin-antitoxin to all children of preschool age for two important reasons: (1) the high percentage of positive Schick

DEPARTMENT OF HEALTH—CITY OF NEW YORK	
DIPHTHERIA PROTECTION CERTIFICATE	
This is to certify that..... Age.....	
residing at.....has received protective injection	
against DIPHTHERIA and is protected against the disease, as shown	
by the Schick Test performed on.....192.. at Public	
School No.....	
Issued by.....	
Medical Officer.	ROYAL S. COPELAND, M.D.,
DATE.....	Commissioner.

Fig. 5.—Final Diphtheria protection certificate.

reactions among children under 6 years of age and the high death rate from diphtheria in this age group show how important it is to protect as promptly as possible all young children against diphtheria; and yet many physicians do not give the toxin-antitoxin injections because they hesitate to use the Schick test; (2) in all young children, only a very mild local and constitutional reaction is produced as a result of the injections.

After the injections of toxin-antitoxin, a child should not be pronounced immune to diphtheria until it gives a negative Schick reaction. This test can be made at any time after six months or more following the injections,



or when the child begins to go to school. Sometimes two or three additional injections of toxin-antitoxin are necessary before the child becomes immune to diphtheria.

It is important to remember that the technic of the test and the interpretation of the reactions are easily acquired and that every physician should be capable of utilizing accurately this reliable and excellent clinical test.

*Local and Constitutional Reactions After Toxin-Antitoxin.*—These reactions were very mild in the young children. In a few children of school age who were also injected with toxin-antitoxin, the reactions were more marked.

*Diphtheria Vaccination Certificate.*—To each child receiving the full series of three injections of toxin-antitoxin the temporary diphtheria vaccination certificate was issued. The final diphtheria protection certificate is never issued until a child gives a negative Schick reaction.

*Records of the Schick Test and Toxin-Antitoxin Injections.*—These records were kept for convenience on cards.

SUMMARY OF INJECTIONS

It is interesting to note that in the baby health stations nearly two thirds of the children were brought back for the full series of three injections of toxin-antitoxin. In the playgrounds, where the work was carried out under greater difficulties, a little more than one third received the full series of three injections.

Diphtheria vaccination certificates were issued to those receiving the three injections of toxin-antitoxin.

It is interesting to note in Table 2 the high percentage of positive Schick reactions in the age group between 6 months and 6 years. The percentage of positive reactions diminished rapidly after the age of 7 years. The percentages in the groups from 7 to 14 years correspond closely with those noted in the schools located in the poorer and more congested sections of this city.

TABLE 1.—NUMBER OF CHILDREN GIVEN SCHICK TEST AND INJECTED WITH TOXIN-ANTITOXIN

Station	Total Number Receiving			Schick Test Only	Total
	3 Injections of Toxin-Antitoxin	2 Injections of Toxin-Antitoxin	1 Injection of Toxin-Antitoxin		
Baby health stations.....	2,785	929	1,261	169	5,144
Mothers' and Babies' playgrounds.....	576	250	498	212	1,536
Total.....	3,361	1,179	1,759	381	6,680

Frequent exposures and repeated mild infections with the Klebs-Loeffler bacillus are important factors in the development of natural immunity in growing children. The corresponding age groups among children of the more well-to-do, who are kept more segregated from other children, show a very much higher percentage of susceptible individuals. Such large percentages of nonimmunes are also found among children living in small communities and in rural sections, where frequent contact exposure is also less common.

RESULTS OF SCHICK TESTS BY FAMILIES

The testing of the children in the baby health stations afforded us an opportunity of studying the response of several children in the same family to the Schick test.

The parents brought not only the younger children of preschool age but also the older ones for the test. A grouping of these families by the number of children and the type of Schick reactions gave interesting data.

Table 3 shows that in seventy-seven families all the children gave negative Schick reactions, and in 103 families all gave positive reactions. In 204 families, there were both positive and negative reactions in each family. By considering the age sequence of the children in each family, we found that in 152 families the reactions were in regular order, the younger children showing positive, the older ones negative reactions.

TABLE 2.—RESULTS OF SCHICK TEST IN BABY HEALTH STATIONS AND VACATION PLAYGROUNDS (MANHATTAN AND THE BRONX)

Age	Total	Schick Positive	Schick Negative	Schick Positive, per Cent.
From 6 to 7 months.....	53	30	23	56.6
From 7 to 8 months.....	41	26	15	63.4
From 8 to 9 months.....	62	52	10	83.8
From 9 to 10 months.....	58	54	4	93.1
From 10 to 11 months.....	61	53	8	87.0
From 11 to 12 months.....	34	31	3	91.1
From 1 to 3 years.....	1,727	1,438	289	83.2
From 4 to 6 years.....	1,328	779	549	58.6
From 7 to 10 years.....	903	330	573	36.5
From 11 to 14 years.....	235	53	182	22.5
Total.....	4,502	2,846	1,656	

In only fifty-two families did we find an irregular sequence, the older children giving positive and the younger ones negative Schick reactions. Out of a total of 384 families, therefore, in 332, or 86.4 per cent., the children gave all negative, all positive or regular mixed negative and positive reactions.

Table 4 gives a graphic presentation of the various types of Schick reactions in different families.

In one of our earliest publications<sup>1</sup> on this subject, we drew attention to the striking tendency toward similar Schick reactions, positive or negative, among the children of a family. When the two types of reactions were present in one family, it was the rule to find young children with positive, older ones with negative reactions. This does not apply to children under 6 months of age, who frequently show a temporary negative Schick reaction as a result of antitoxin passively transmitted through the placenta from mother to offspring.

The tendency to develop early a natural immunity was marked in certain families, in which the children gave a negative Schick reaction as soon as they reached 1 or 2 years of age. In other families, this tendency was delayed for a few years. In still other families, there was little or no tendency toward development of a natural immunity, as the children failed to give a negative reaction even when they reached the age of 15 or 16 years. When an older child gave a positive Schick reaction, the younger ones as a rule also gave positive reactions. It is important to remember this fact, as the presence of diphtheria in an older child generally indicates that the younger children in the same family are also susceptible. To wait for the result of the Schick test may not be advisable under such conditions, and the immediate administration of a prophylactic dose of antitoxin is indicated.

The tendency noted in some families for all the children to give a negative Schick reaction may be an indi-

1. Park, W. H.; Zingher, Abraham, and Serota, H. M.: The Schick Reaction and Its Practical Applications, Arch. Pediat. 31: 481, 1914.



cation that there has been repeated exposure to infection with the diphtheria bacillus as a result of the children living under the same conditions of environment. We have found, however, that the children of families living under very similar conditions gave positive reactions. While our previous results<sup>2</sup> in testing large numbers of public school children have shown us that exposure to infection with the diphtheria bacillus is a most important factor in the development of natural immunity, we must assume that a second factor also comes into play in the form of an inherited family tendency, as a result of which the tissue cells of certain individuals respond either readily and well or slowly and poorly to the same amount of antigenic impulse.

#### PRIVATE PHYSICIANS AND DIPHTHERIA IMMUNIZATION AMONG CHILDREN OF PRESCHOOL AGE

The important part that the general practitioner plays in the prevention of disease among the young children in his private practice indicates that the ultimate success of the work in diphtheria prevention will depend on the successful cooperation that the health officers can obtain from the family physician. He is the one who will have to be depended on to persuade the parents to have their children protected against diphtheria, just as they are having them protected now by vaccination against smallpox.

We felt that it would be an important phase of the campaign to enlist the aid of the medical profession in the city in the distribution of literature and in giving the injections of toxin-antitoxin to the young children in their private practice. A circular letter was sent to each of the 6,000 physicians in Manhattan and the Bronx, enclosing copies of the circular and the diphtheria vaccination certificate, and offering to send them a supply of these forms on request. A list of the department of health stations where the toxin-antitoxin could be obtained free of charge was also sent to each

TABLE 3.—RESULTS OF SCHICK TEST BY FAMILIES (BABY HEALTH STATIONS AND VACATION PLAYGROUNDS IN MANHATTAN AND THE BRONX)

Family Consisting of	Number of Families			
	All Negative	All Positive	Regular Mixed, Negative and Positive	Irregular Mixed, Negative and Positive
3 children.....	54	88	101	24
4 children.....	19	7	29	18
5 children.....	3	7	20	6
6 children.....	1	1	1	3
7 children.....	..	..	1	1
Total.....	77	103	152	52
Grand total.....	332 (86.4%)			

physician. More than 200 physicians requested the literature. It is hoped that many more will avail themselves of this opportunity to begin a form of prevention work among their patients which depends for its ultimate success so much on their efforts.

#### COMMENT

The diphtheria prevention work that was carried out this summer in the baby health stations and in the mothers and babies' vacation playgrounds has shown the usual difficulties encountered in any attempt to reach the scattered children of preschool age. These very difficulties indicate the necessity for close coopera-

tion on the part of the general practitioner in such a campaign. He is the one to whose advice the parents will listen most readily. When the parents are too poor to afford the services of a private physician, the injections should be given free of charge by physicians connected with the health department. When we consider the financial burden that sickness and death from a case of diphtheria place on the family and the community, we realize that the expense connected with the immunization with toxin-antitoxin is relatively small.

The results obtained with the Schick test this summer show that the children between 6 months and 6 years

TABLE 4.—THE SCHICK REACTION IN FAMILIES; TYPES OF FAMILY REACTIONS

Type	Ages of Children in One Family				
	6 Months	2 Years	5 Years	8 Years	12 Years
All positive.....	— or +	+	+	+	+
All negative.....	— or +	—	—	—	—
Regular mixed positive and negative:					
(a) Early natural immunity.	— or +	+	—	—	—
(b) Late natural immunity..	— or +	+	+	+	—
Irregular mixed positive and negative.....	— or +	+	—	—	+
Irregular mixed positive and negative.....	— or +	—	+	+	—

of age are very susceptible to diphtheria, even among those classes that live in the poorer and more congested sections of the city. This high degree of susceptibility indicates that the injections of toxin-antitoxin should be given either with or without the preliminary Schick test to all children in this age group.

The immunity curve begins to rise fairly rapidly in this class of children after they have passed the seventh year. This does not hold true for the children of the more well-to-do and for those who live relatively isolated or in small communities, among whom we previously found a high percentage of susceptible individuals even up to adult age. Frequent exposure to infection with the diphtheria bacillus among the children of the poorer class who live in the larger cities in such congested neighborhoods most probably explains this interesting phenomenon.

Thorough propaganda work by the health department is an important feature in reaching the preschool age groups. It could be started at birth, when the birth certificates are sent to the parents, by enclosing a circular on the new methods of diphtheria prevention. This circular should draw the attention of the parents to the special dangers from diphtheria for all children as soon as they reach their first year. The parents should be urged to take young children to their private physician so that he can immunize them against diphtheria.

The problem of diphtheria control would be much nearer solution if an ordinance could be passed making it compulsory that children on entering school should be given the Schick test and, if they give a positive reaction, immunized with toxin-antitoxin. If this seemed wise to the health department and the board of education, and could be brought about, no doubt most of the children would be Schick tested and immunized against diphtheria long before the time for entering school. This has proved true in the case of smallpox vaccination, and will probably also be true in the case of diphtheria prevention.

Such compulsory legislation would be most desirable, but its passage will depend on the enlightenment

2. Zingher, Abraham: Diphtheria Prevention Work in the Public Schools of New York City, J. A. M. A. 77: 835-841 (Sept. 10) 1921.



of the community with respect to disease prevention. It is here that the health officer and the health department can accomplish much good by giving expression to the crystallized opinion of the medical profession in the community. These two outstanding facts should be emphasized: The morbidity and mortality from diphtheria were on the increase throughout the country until very recently, and we are now able to avail ourselves of measures that will ultimately stamp out this disease.

#### CONCLUSIONS

1. The active immunization with toxin-antitoxin of all children of preschool age (from 6 months to 6 years) is of fundamental importance in any general campaign of diphtheria prevention and control.
2. To reach these young children, the health officer can utilize, in larger cities, the baby health stations, day nurseries, mothers and babies' playgrounds, infant asylums, clinics for children, and similar agencies.
3. It is of even greater importance to have private physicians take up this work among the young children in their private practice.
4. Preliminary work in the schools will help by spreading in the homes the knowledge of these newer methods of diphtheria prevention.
5. The high percentage of positive Schick reactions among children of preschool age indicates, under many conditions, the advisability of simplifying the procedure of immunization by omitting the preliminary Schick test in this group and giving the toxin-antitoxin injections to all children between 6 months and 6 years of age. These children should not be pronounced immune to diphtheria after the injections of toxin-antitoxin until they show a negative Schick reaction. This test might be carried out conveniently by the school physician when the children begin to go to school.
6. The injections of toxin-antitoxin produce very little local or constitutional disturbance in young children.

### AN IMPROVED PROCEDURE FOR THE STAINING OF ACID-FAST ORGANISMS IN TISSUE\*

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Investigators familiar with the demonstration of the bacilli of tuberculosis in tissue are aware of the difficulties attending the customary procedure of section staining, particularly in retaining the counterstain as the tissue is passed through the various dehydrating preparations, or resulting from the failure thoroughly to dehydrate the stained tissue by omitting those dehydrating solutions which attack the counterstain. Satisfactory results are even more uncertain in frozen sections than in sections embedded in paraffin or celloidin. The method described here affords a rapid and simple technic for demonstration of *Bacillus leprae* and *Bacillus tuberculosis* in tissues. Excellent results are also obtained in paraffin sections.

#### TECHNIC

Fresh tissue, having been hardened in a 10 per cent. dilution of liquor formaldehydi for at least fifteen hours, is frozen and sectioned. The thinner the section, the more satisfactory is the stain, and the finding of the organism is likewise facilitated. The cut sections are floated in distilled water and mounted on clean slides by means of a small glass elevator. They are then dehydrated by being flooded with 95 per cent. alcohol, after which they are fixed to the slide with celloidin. The superfluous celloidin adhering to the slide is wiped away, and slides are placed in a glass of distilled water. They are now ready for staining. (Care must be taken that the celloidin solution is free from water; otherwise, the section will not adhere to the slide.)

The old, orthodox teaching of heating or steaming in carbolfuchsin has been abandoned. Apparently, there is nothing gained by working with a hot solution, cold carbolfuchsin solution serving just as well, as was brought out by Keilty.<sup>1</sup>

#### STAINING PROCESS

1. The slide is placed in a vessel containing cold carbolfuchsin, and stained for from five to ten minutes.
2. It is washed in tap water and decolorized for from one to two minutes with 25 per cent. hydrochloric acid (aqueous solution). If some color returns after washing in tap water, the process of decolorizing is repeated, and the slide is washed again in tap water. It is then blotted between filter papers.
3. Counterstaining is done with Loeffler's methylene blue for from one to two minutes. The choice of counterstain is an individual matter. Those in general use, such as malachite green, Bismarck brown, picric acid and methylene blue, give good results.
4. The excess stain is washed off with distilled water, and the slide is blotted between filter papers.
5. Several drops of pure anilin are quickly dropped on. The color of the section should be watched. When the desired blue is obtained, the slide is immersed in a clearing mixture of one part of anilin and two parts of xylene. The slide is lifted out of the anilin mixture from time to time, and the degree of clearing and also the intensity of the blue are observed. Ordinarily, the slide is not left in the mixture longer than three minutes, but this depends on the intensity of the blue desired and the thickness of the section. The anilin and xylene dissolve the counterstain slowly, so that care must be taken not to leave the slide in the mixture too long. When the desired tint of blue appears, the section is transferred to pure xylene, in which it remains until completely cleared. It is then mounted in balsam in the usual manner.

Pure anilin dissolves the dye quite readily, as well as clears it, and care is necessary in removing the excess counterstain not to continue the process too long. With a little practice, the whole section can be run through in from ten to fifteen minutes.

1. Keilty, R. A.: Hydrochloric Acid as a Decolorizing Agent for the Tubercle Bacillus, J. A. M. A. **66**: 1619-1620 (May 20) 1916.

**Mountains of Carbon.**—The carbonic acid gas exhaled by a man in twenty-four hours is estimated at about 450 liters, which would represent 240 gm. of burnt carbon and 450 liters of oxygen taken from the air to effect this combustion. At this rate the carbonic acid gas produced in a year by the whole human family would amount to about 160 billion cubic meters, which represents 86,270,000 kg. of burnt carbon. Piled in one heap, this carbon would make a mountain a league around at its base and from 400 to 500 meters high. Such is the quality of fuel required for the maintenance of man's natural heat. All of us together eat carbon to this extent, and in the course of a year we breathe it out, a breath at a time, in the form of carbonic acid gas. Then we start on the consumption of another pile of the same size. How many mountains of carbon, then since the world began, must mankind have breathed out into the atmosphere.—Fabre: The Wonder Book of Chemistry.

\* From the Section on Surgical Pathology.



## VENTRICULOSCOPY AND INTRAVENTRICULAR PHOTOGRAPHY IN INTERNAL HYDROCEPHALUS

REPORT OF CASE \*

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AND

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In an attempt to find a means of relief in cases of hydrocephalus in children, some interesting observations have been recorded relative to the appearance of the functioning ventricle in the living subject.

With the object of establishing an outlet through the corpus callosum for the relief of the acute internal hydrocephalus presented in the case reported below, an approach through the dilated ventricle with an operating cystoscope was suggested. An opening through the thinned cortex in a silent area of the brain was planned, as being a far safer procedure than the more formidable midline approach between the hemispheres.<sup>1</sup>



Fig. 1.—Appearance of patient on admission, showing marked enlargement of the head and expanse of the forehead.

delivery, and there was a slight mark on the infant's forehead that was said to have been caused by the application of forceps. The mother had been married for two years. There was a history of a miscarriage at the end of the third month. Both father and mother were in excellent health. The blood Wassermann reaction on each was negative.

Four months after the child's birth, the mother had first noted that his head was larger than normal, and, for the last six months, it had been gradually increasing in size (Figs. 1, 2 and 3).

The head measured 64 cm. in circumference, and 42 cm. from the glabella to the inion. The forehead was massive, compared with the size of the body. The fontanels were wide and fluctuating. The child weighed 20 pounds, 8 ounces (9,298.6 gm.). The face was small. There was no ocular

## REPORT OF CASE

A baby boy, aged 10 months, Italian, was brought to the neurosurgical clinic, Nov. 5, 1922, by his mother, who requested that something be done to check the progressive growth of the baby's head. The child's birth had been difficult, labor having continued for three days before the infant was finally delivered by means of forceps. The mother had been torn at the time of

palsy, and no paralysis of the extremities. The general physical condition was excellent. The blood and spinal Wassermann reaction were negative. The child had never been sick. The appetite had been good, and the child had taken all of its feedings regularly. There had been nothing to suggest meningitis.

November 9, under light ether anesthesia, a small trephine opening was made through the skull, on the right side, in the postparietal region. Through a small dural slit, a Cotton cannula was passed into the ventricle, which proved to be only 1 cm. below the cortex. Clear fluid escaped under considerable pressure. The cannula was re-



Fig. 2.—Appearance of patient after third ventriculostomy, which resulted in his being somewhat brighter, following relief of pressure.

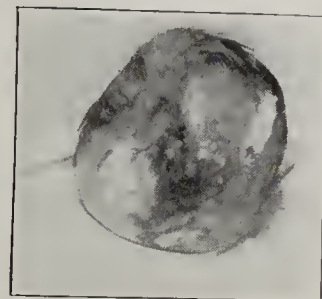


Fig. 3.—The enlarged head when viewed from above eclipses the entire body in size. Two small collodion dressings mark the two areas of approach.

moved, and a small No. 12 cystoscope was inserted, affording a clear view of the ventricular walls. Sketches were made at this time, and the structures were noted with especial reference to the medial wall, which appeared to be quite free from large vessels near the colossal pathways (Figs. 4 and 5).

The wound was closed after enough fluid had been allowed to escape to relieve the increased pressure. There was no cortical or ventricular hemorrhage. The dura was closely closed by a button-hole stitch, and the skin edges were closely



Fig. 4.—Peculiar appearance of the veins that stand out from the ventricular walls.

approximated. The child was returned to the ward in good condition, and, after a slight reaction, returned to the normal in a few days.

This procedure disclosed several things of importance:

1. Ventriculostomy can be performed with little risk and with slight reaction.
2. A satisfactory view of the lateral ventricle can be obtained and the proposed field of future operation carefully inspected.

\* From the Neuro-Surgical Clinic of Dr. Charles H. Frazier, University Hospital.

1. This paper is a preliminary report of work being done on the problem of internal hydrocephalus. The condition is by no means rare. It is a frequent sequel of meningitis, and possibly of trauma sustained at birth. Schuchard reports one case in every 743 births, as a complication of pregnancy. Lachapelle and Duges found it once in every 2,903 births, and Merriman once in every 900. In September, 1921, various means and methods of approach were outlined, and experimental work in the laboratory was undertaken to determine the technic for the midline approach between the hemispheres. The results of this work are rapidly nearing completion and will be presented in the near future. The use of ventriculostomy for inspection as a means of determining the pathologic condition existing in the ventricles and the employment of the photographic cystoscope to record the observation so made, was proposed in September, 1921. Since the inception of this problem, Dandy (Bull. Johns Hopkins Hosp. 33:189 [May] 1922) records a case in which he has employed ventriculostomy but not photography.



3. Some interesting structures may be noted in their normal relationship.

4. Direct ventriculoscapy is of diagnostic value in localizing those subcortical lesions which may cause ventricular distortions and which are often difficult to localize, and for tumors within the lateral ventricles.



Fig. 5.—Appearance of posterior horn of the lateral ventricle, viewed from above. The choroid lying in the foreground has a rich reddish brown appearance, similar to that of a thick velvet rug.

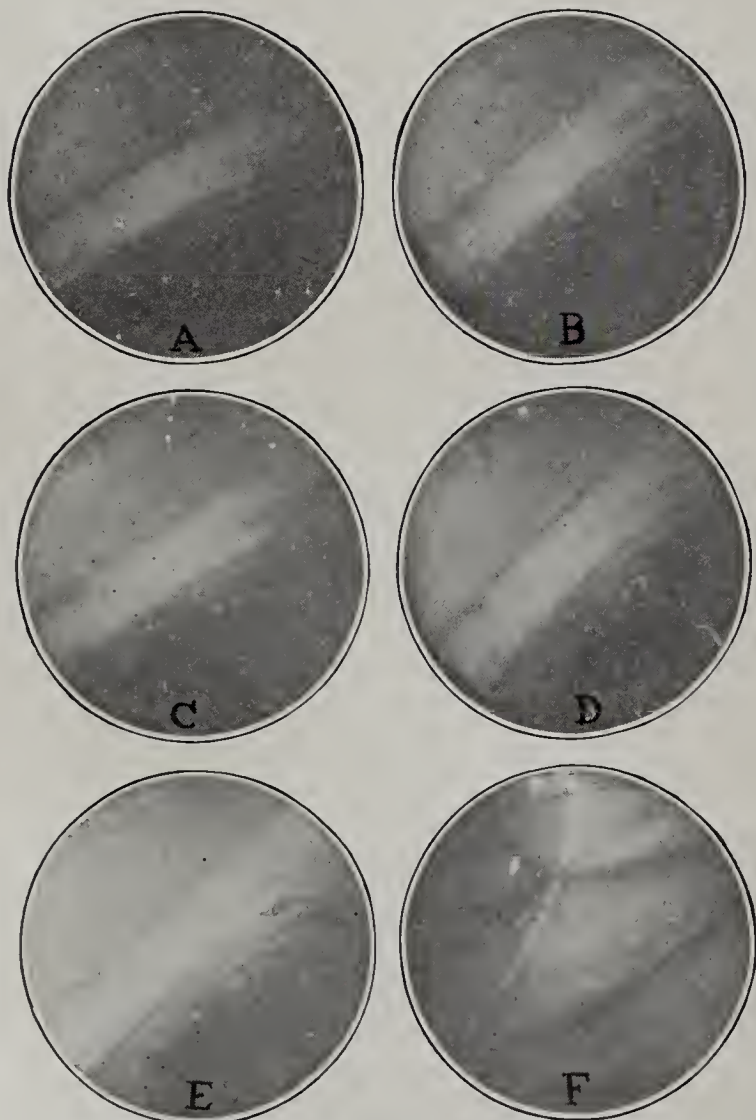


Fig. 6.—Exposures made within the ventricle, showing the choroid as a dark mass along the floor, with the light ventricular wall above. The parallel distribution of the veins is of interest: A, exposure for ninety seconds; B, exposure for seventy-five seconds; C, exposure for sixty seconds; D, exposure for forty-five seconds; E, exposure for thirty seconds; F, appearance of some of the veins on the surface of the septum lucidum, exposure for forty seconds.

Two weeks later, a second exploration was performed, this time on the left side, the posterior horn of the ventricle being entered from the parietal occipital lobe. A photographic

cystoscope was used on this occasion, and six exposures were made of structures seen within the ventricle (Fig. 6).

As these photographs were the first of their kind, to our knowledge, the problem of time and the duration of the exposure had to be determined. The presence of the ventricular fluid and the fact that the head was slightly moved with each respiration of the patient also added difficulties to the procedure. Figure 6 illustrates the same view under exposures varying from one and one-half minutes to thirty seconds. When the cystoscope was inserted, a clear view of the ventricles was obtained, and the instrument was focused on an area that showed the choroid plexus and a series of small veins running off to the walls of the posterior horn. This field was chosen because it exhibited the contrast between the dark choroid and the pearly white surface of the ventricular wall. The cystoscope was clamped in place by a fixture attached to the table, and the exposures were made in rapid succession.

After the wound had been carefully closed the patient was returned to the ward in excellent condition. The child showed only a slight reaction following the second operation. This was probably due to the fact that only a small amount of cerebrospinal fluid escaped during the whole operation, the



Fig. 7.—Peculiar vein emerging from the lateral wall and passing out again toward the cortical surface.

pressure having been relieved before. The reaction was not more than would be expected in a 10 months old child following any ether anesthesia.

One week later, the child was again operated on, this time with the object of using an operating cystoscope and creating a permanent fistula through the corpus callosum to permit escape of the ventricular fluid into the subarachnoid space. A "high light" cystoscope was first used, and an entry made through the former opening into the posterior horn so as to familiarize the operator with the field of operation. Two interesting sketches (Figs. 7 and 8) were made at this time. It was found that the instrument which was to be used for cutting through the corpus callosum was defective, so the attempt had to be abandoned. The child was returned to the ward in excellent condition, and had very little reaction following the operation. A favorable opportunity is being awaited for the completion of the final stage of this operation.

#### CONCLUSIONS

1. Intraventricular photography and ventriculoscapy are possible in the presence of dilated ventricles.
2. Little or no reaction follows such procedure when properly conducted.
3. The diagnostic value of direct inspection of the ventricular cavities may prove of considerable impor-



tance in determining the location and the extent of growth of subcortical lesions causing deformities of the ventricles.

4. A satisfactory approach with regard to area and the extent of opening desired may be made through a

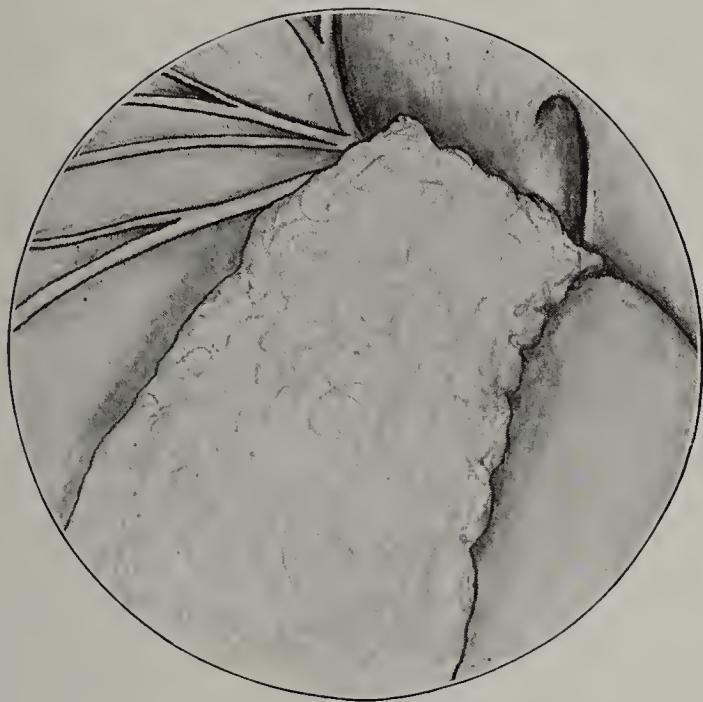


Fig. 8.—Lateral ventricle viewed from behind, showing a large portion of choroid in the foreground, and, in the anterior, inner wall, the enlarged and comma-shaped foramen of Monro, connecting the two anterior horns.

dilated ventricle in order to permit callosal puncture under direct observation.

5. Photography for the purpose of reproducing the appearance of structures or lesions within the ventricles requires at least forty seconds exposure.

#### A METHOD FOR THE CONCENTRATION OF CELLS AND BACTERIA IN PROSTATIC SECRETION\*

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NEW ORLEANS

In the routine examination of prostatic secretion for the presence or absence of bacteria, and particularly gonococci, it is of the greatest importance to examine the cytoplasm of large numbers of pus cells. The small amount of pus that may be present is often so diluted with prostatic secretion that direct smears of the material are so thin as to make the finding of any number of pus cells a difficult task. The thicker parts of films dry slowly with consequent shrinking of the cytoplasm to a mere band surrounding the nucleus, within which it is almost impossible to recognize the morphologic appearance of organisms that may be present. The normal fluid itself also stains, making the examination of very thick areas impossible. After many attempts to devise a practical method of concentration of the cellular elements in prostatic secretion, the technic here described, which consists essentially of the use of proper size centrifuge tubes, has been found very satisfactory. This method has been in use for some time and has seemed to fill all requirements.

#### TECHNIC

A length of glass tubing of about one-fourth inch (5 mm.) outside diameter is moistened and wiped dry by a cotton

plug pushed through it. It is then cut into lengths of 4 or 5 inches, and the ends are held in the flame, to round the sharp edges. A half inch of the middle is heated while the tube is being rotated in the flame of a small Bunsen burner until it is very pliable. The tube is removed from the flame and pulled into a large-lumen capillary about 5 inches long by slow traction on both ends. It is held taut for a moment until the glass chills. The glass is nicked lightly at *a* and *b*, as shown in Figure 1. (A very small file is used, or a glass cutter made from an old pocket knife by heating the blade to cherry-red and tempering by plunging in cold water. It is sharpened on a coarse grained emory wheel.)

The patient is instructed to wash the glans with soap and water, dry thoroughly, and to empty the bladder. Prostatic massage is then carried out in the usual manner, the fluid being collected as expelled into a medicine glass or small beaker. The short end of the glass tubing is now broken off and fitted with a good rubber bulb (Wright's red rubber bulbs as supplied by laboratory dealers). With the thumb resting partly on the glass tubing as shown at 2 in Figure 1, by rotating this member slightly, just enough vacuum is produced to take up several drops of secretion. With a little practice one soon learns the trick of allowing just sufficient suction to take up the desired quantity of fluid to fill the pipet, with the suction from the bulb diminishing to nil as the pipet fills. A small drop of the fluid for a control is squeezed out on the left hand end of a slide (5, Fig. 1) and spread out with the tip of the pipet. Pressure is now released and the fluid runs up, leaving the tip of the pipet empty so that it may be sealed, without spluttering, by holding it against the side of a Bunsen flame. The tip is removed from the flame, and the bulb is gently squeezed to see whether the tip is well sealed.

The bulb is removed and the tube is dropped in a centrifuge shield which has a good rubber plug in the bottom. It is cen-

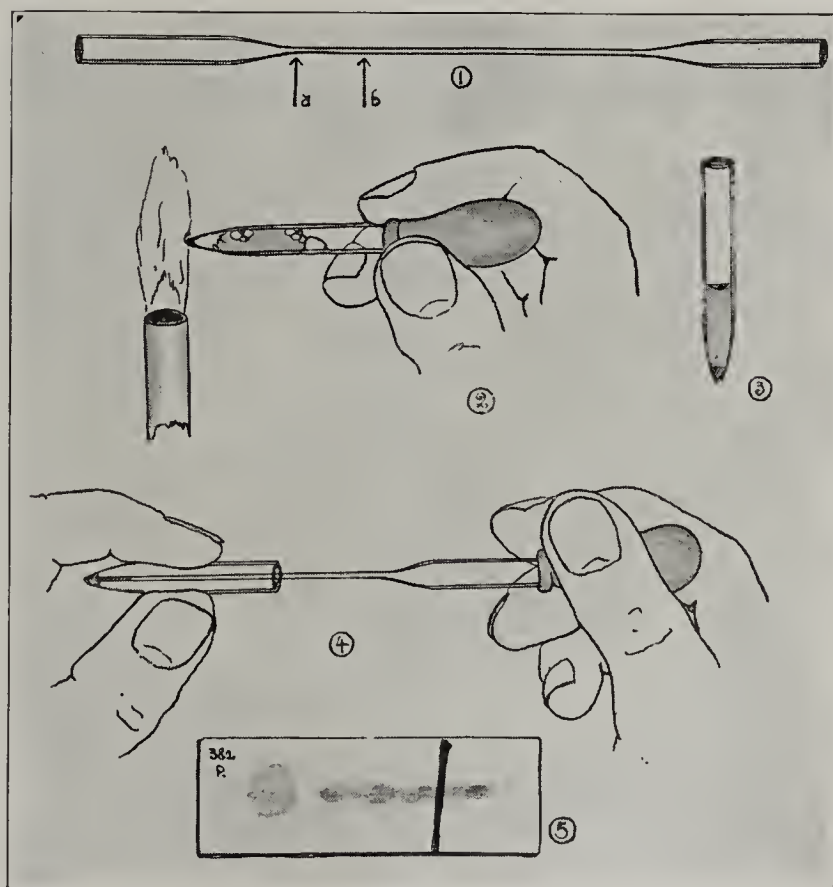


Fig. 1.—Details of technic.

trifuged at 1,500 revolutions a minute (with the usual radius from the spindle) for about one minute.

The centrifugal force exerted on a half inch layer swung at this speed and distance from the motor shaft is sufficient to throw down all cells and most of the free bacteria from the most viscid secretions encountered (3, Fig. 1). Care must be taken that the point *a* at which the tube was broken shall be just at the termination of the taper. With too narrow a point, a plug of mucus may adhere and keep the cells

\* From the Laboratory of Clinical Medicine, Tulane University School of Medicine.



from packing at the bottom. Slow centrifuging is not entirely compensated for by a longer time. The hand centrifuge cannot be successfully used for this purpose.

The bulb is now attached to the capillary pipet. The supernatant fluid is pipetted off and discarded. The sediment is taken up (4, Fig. 1) and transferred to the middle of the slide and spread out in a long undulating wave of thick and thin places by means of the end of the pipet (5, Fig. 1).

The smear dries quickly. It is fixed with gentle heat. A mark is struck across one end of the concentrated smear with a grease pencil. The short end is stained with carbolfuchsin "on and off." It is washed and counterstained with Löffler's methylene blue from twenty to thirty seconds, and dried. A field of proper thickness is selected with a low dry lens, and examined with an oil immersion lens. When bacteria are found and their morphology and cell relationship have

## PNEUMOPERITONEUM AS AN AID IN THE DIAGNOSIS OF SUBDIAPHRAGMATIC CONDITIONS \*

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ST. LOUIS

Since the advent of pneumoperitoneum, or air inserted into the abdominal cavity, as an aid in roentgen-ray diagnosis, much has been done to simplify the technic, and a great deal of investigation has been carried out to determine the full range of possibilities of this method.

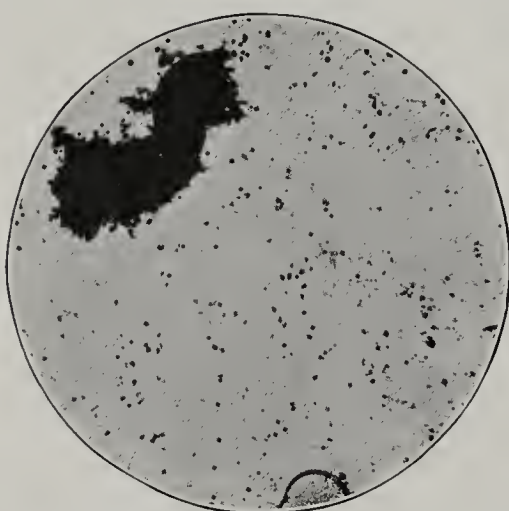


Fig. 2.—Plain prostatic fluid from posterior urethritis two weeks after cessation of the usual course of treatment; low dry lens.

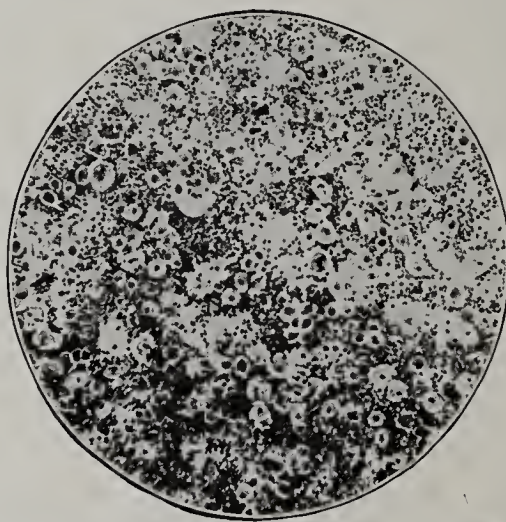


Fig. 3.—The same fluid after concentration; low dry lens.

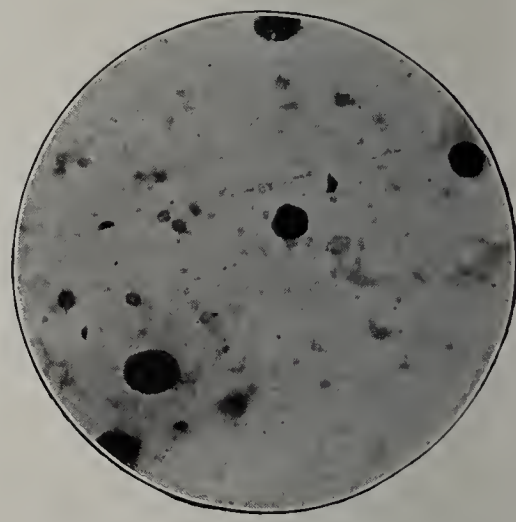


Fig. 4.—A typical field of the unconcentrated fluid under the oil immersion lens.

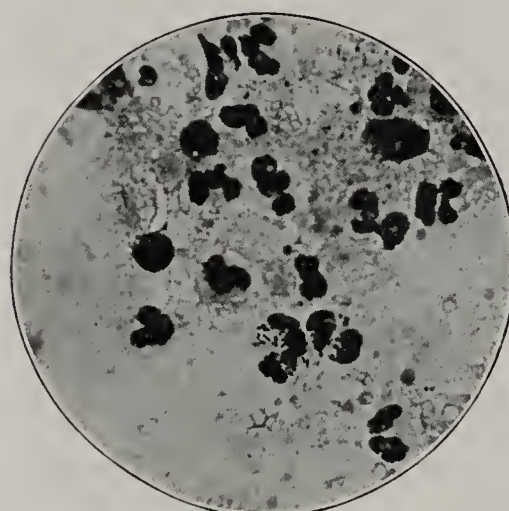


Fig. 5.—Concentrated preparation under oil immersion lens; to be noted are the distinct cytoplasm and nuclei of pus cells and the morphology of intracellular organisms.

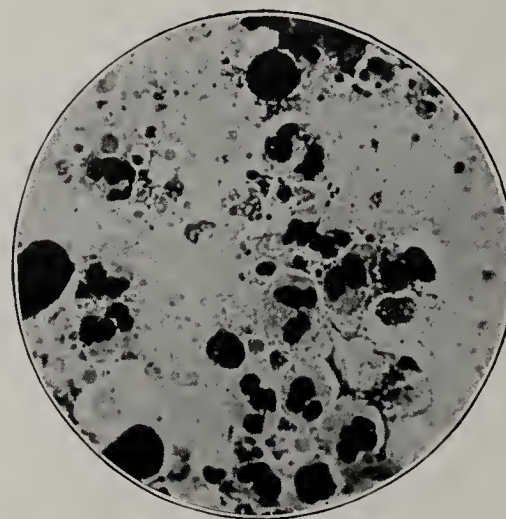


Fig. 6.—Other concentrated preparations; extracellular forms.

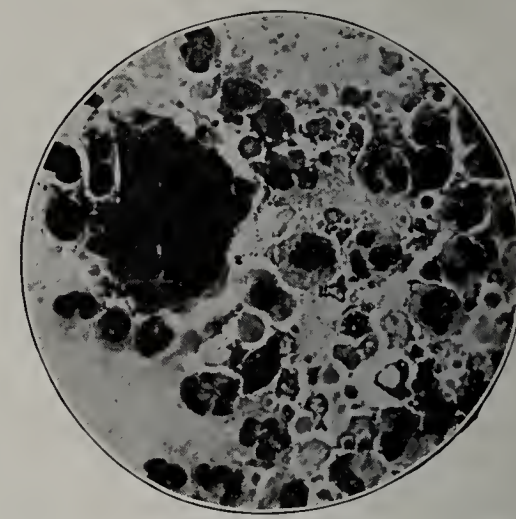


Fig. 7.—Other concentrated preparations; extracellular forms.

been determined, the remainder of the smear may be stained with Gram's method for further differentiation.

### COMMENT

While just a little more technical ability is required here than in centrifuging urine, I am convinced that the facility and certainty with which the presence or absence of bacteria may be determined will place the microscopy of prostatic secretions on a parallel plane with the indispensable urethral smear. The description as given above seems rather tedious and much longer than it really is, but the success of any method lies in the observance of the small details.

Gonococci disintegrate very quickly. Prostatic secretion should never be allowed to stand many minutes before smears are made.

Early in our experience with pneumoperitoneum, it was pointed out that this method should prove of great avail in the diagnosis of subdiaphragmatic lesions. The full value of the method was not appreciated, however, until opportunity was afforded for its practical application. Pneumoperitoneum has been of such great aid to us on several occasions, in clearing up doubtful diagnoses, that a brief consideration of its use in these lesions seems advisable. While its application in subdiaphragmatic conditions is not as wide as in some of the other regions of the abdomen, because of the limited range of subdiaphragmatic lesions, the information that it gives is occasionally of such value as to be decisive.

\* Read before the Tulsa County Medical Society, Tulsa, Okla., April 26, 1922.



We have found the method of so much value in examination of acute infectious involvement of the subphrenic space that it seems advisable to call attention to this special phase of pneumoperitoneum work. Very little air is necessary in the examination of this region, and, if inflation is carried on with the patient in a recumbent position under the fluoroscope, any involvement of

definite connection between the perinephritic abscess and the effusion in the chest.

The information gained by the surgeon in this instance, prior to operation, guided him in the surgical procedure and enabled him to perform a much less formidable operation than might otherwise have been the case.

In a similar instance, illustrated by Figure 2, an unsuspected inflammatory process was discovered in the subdiaphragmatic region. Pneumoperitoneum was undertaken for an entirely different lesion, and the subdiaphragmatic condition was unsuspected. At least six similar cases have occurred in which pneumoperitoneum was the decisive factor in the diagnosis.

Other conditions which occur in this region and in which pneumoperitoneum is occasionally of decisive aid are cardiospasm of the lower end of the esophagus, which must be differentiated from an organic lesion in this region; adhesions of the viscera to the diaphragm, and hernia of the hollow viscera through the diaphragm. The diagnosis of cardiospasm by the aid of pneumoperitoneum has been previously referred to by Iglauer,<sup>1</sup> and its aid in this respect is undoubtedly of great benefit in certain cases. When cardiospasm alone exists, the esophageal constriction occurs at the diaphragm, and the regular dilated sac appears above. There is no evidence of involvement of the region between the diaphragm and the cardiac orifice of the stomach, a condition clearly shown by this method, and

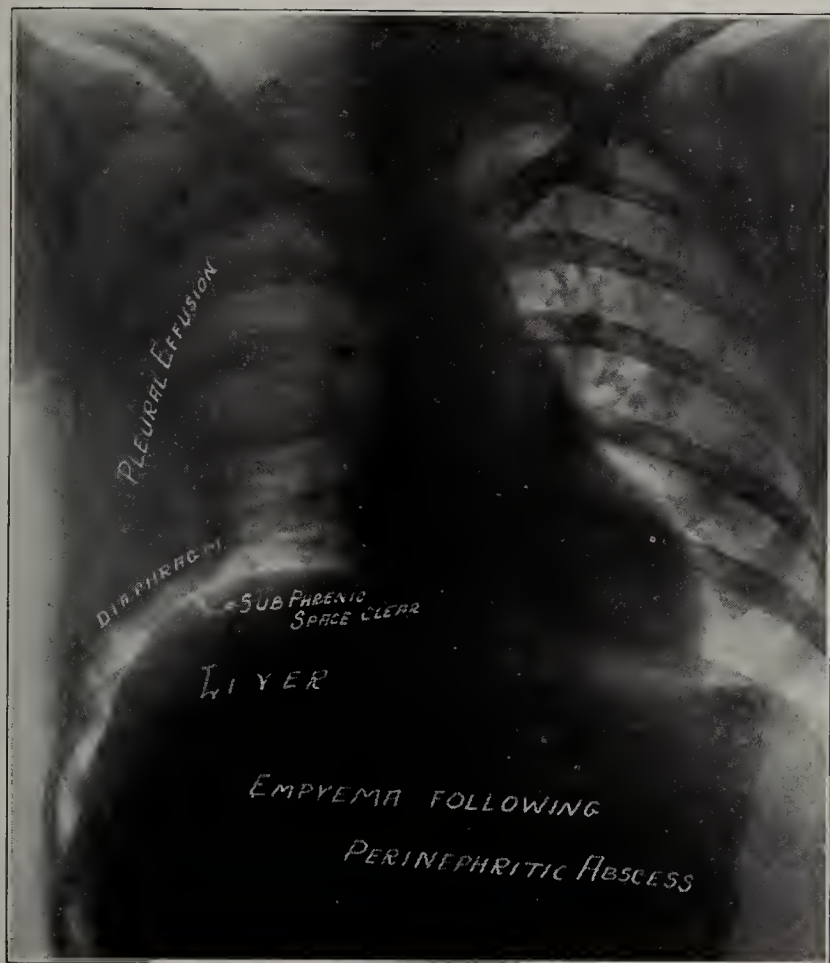


Fig. 1.—Pneumoperitoneum in determining the involvement or freedom of the subdiaphragmatic space in suspected acute infections of this region, as an extension from the pleural cavity or otherwise. In this instance, the subphrenic space is free from involvement, the infectious process being confined to the chest.

this space can be at once detected, and the inflation discontinued. If the procedure is carried out in this fashion, there need be little fear of breaking any existing adhesion walling off an infectious process, no matter how delicate or recently formed. Information gained in this manner, either establishing the presence of a subdiaphragmatic abscess or excluding its possibility, is of the utmost value in the prognosis and treatment of the condition. This is especially true since the accepted method of surgical procedure for drainage of such abscesses is very extensive and necessarily involves vital structures. A case in point, illustrated by Figure 1, may be of interest:

A young man was admitted to the hospital with chills, high temperature and pain in the back. Physical examination revealed a perinephritic abscess, which was incised and drained. The temperature fell to normal, and the patient felt quite well. Drainage continued to decrease until, at the end of the seventh day, little if any was present. On the seventh day, however, the temperature again rose suddenly, and there were chills and profuse perspiration. Both physical and roentgenographic examinations revealed a moderate collection of pleural fluid, and there was immobilization of the diaphragm on the affected side. Pus was aspirated from the chest. At this time, hiccup commenced, persisting for several days. This, with high temperature and pain in the abdomen, suggested possible involvement of the subdiaphragmatic space. Examination by pneumoperitoneum revealed that the subdiaphragmatic space was not involved, and simple thoracotomy resulted in cure. Pneumoperitoneum disclosed no



Fig. 2.—Beginning involvement of the subdiaphragmatic space on the right side by an infectious process during a peritoneum examination for another purpose. The subdiaphragmatic area on the right is in contrast with the clear, uninvolved area on the left.

confirming an observation previously made by Chevalier Jackson<sup>2</sup> that cardiospasm is due to the "pinchcock action of the diaphragm." When a carcinomatous

1. Iglauer, Samuel: Pneumoperitoneum as an Aid in the Diagnosis of Cardiospasm, *New York M. J.* 115:745 (June) 1921.  
2. Jackson, Chevalier: Diaphragmatic "Pinchcock" in So-Called Cardiospasm, *Laryngoscope* 32:139-142 (Feb.) 1922.



involvement is present, a definite tumor mass can be seen. Barium meal examination reveals the presence of an irregularity and constriction of the esophagus, but does not show the extent of the pathologic growth. On several occasions, complete adhesion of the liver or spleen to the diaphragm has been encountered. Dense adhesions of the spleen necessarily preclude operative removal, and pneumoperitoneum should therefore be performed before any attempt at splenectomy.

The diagnosis of diaphragmatic hernia of the hollow viscera should be readily confirmed by this method.

## A SKIN CANCER FOLLOWING EXPOSURE TO RADIUM\*

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AND

GEORGE S. WILLIS, M.D.

NEW YORK

The patient, G. S. W.,<sup>1</sup> who was born, Oct. 12, 1876, had attained the age of 46 years in 1922. His father, a physician, died in 1898 at the age of 64, from prostatic hypertrophy complicated by a mitral regurgitation and nephritis. His mother died in 1918 at the age of 70 years, from angina pectoris. The patient is married and has one daughter, aged 21.

The patient has practiced medicine since 1899, and he first began working with roentgen rays in 1905, employing a Wagner static machine with attachment for fluoroscopy. He habitually used his left hand as a test object. In 1909 he became acquainted with Dr. Walter Dodd, and for several summers he worked with Dr. Dodd in the Massachusetts General Hospital. He was, therefore, fully cognizant of the

sequelae of roentgen-ray burns. During 1911 and 1912 he used roentgen rays daily with the fluoroscope for examination of the stomach. In this work the palms of the hands were exposed to the rays, but always with lead glove protection. Roentgen-ray work was continued on a small scale up to 1915, and since 1917 the patient has not employed roentgen rays at all.

His radium work began in 1912 with the use of radioactive water. In 1913 and 1914 he began to handle radium bromid,

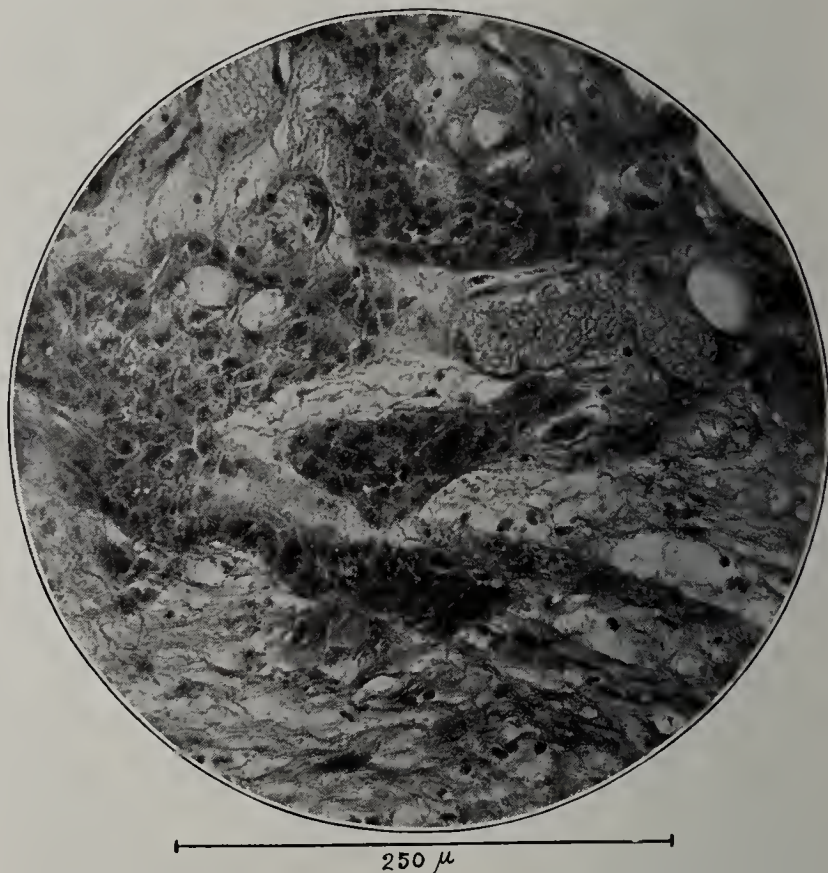


Fig. 2.—Second specimen, removed November 2: portion of vascular granulation tissues containing irregular nests of atypical epithelial cells in close relation to thin-walled blood vessels; near the center, a large cell in mitosis.



Fig. 1.—Section of the first specimen, removed Oct. 28, 1922: irregular whorls of squamous epithelium, largely necrotic; marked inflammatory infiltration.

danger of roentgen-ray burns because of Dr. Dodd's experience, the latter having undergone no less than forty-six surgical operations before he eventually succumbed to the

radium sulphate and mesothorium in glass tubes, having at his disposal about 50 mg. in all. These preparations were handled daily and very freely without protection. In 1915, much larger amounts were obtained, and he employed about 200 mg. daily, sometimes more. He habitually picked up the glass tubes to place them in metal boxes before applying the radium to the patient. In January, 1919, he obtained 365 mg. of radium in one glass tube. This he handled personally with but little precaution, from three to five times a day, in addition to smaller units in other tubes. The tubes were seized between the thumb and finger tips. This personal handling of the radium continued until 1920. Since June, 1920, he has handled radium very little, and then only with forceps. He is right handed.

The patient observed a curious numbness in the ends of all his fingers late in the year 1918, while continuing his radium work in the army. Along with this he noted a weakness of the left arm, so that he was compelled to give up boxing, a favorite exercise. Sometimes he could not even lift a drinking glass with his left hand. This numbness has persisted up to the present time. In July, 1919, he was discharged from the Army Medical Corps and came to the New York Post-Graduate Medical School and Hospital, where he has continued his radium work. At about this time an acquaintance called his attention to the roughness of his hands, to which he had previously paid very little attention. In the following winter, about January, 1920, more serious troubles began, and ever since the hands have been a constant care. The skin became tender and sore. There was a burning sensation, sometimes an ache and often a neuralgic pain. The skin has remained rough and harsh, and fissures have been almost constantly present. Bathing the hands in hot soda solution, nightly dressing with oil and occasional treatment by exposure to the sun's rays have been a regular part of his life since early in 1920.

\* Read before the New York Pathological Society, Jan. 10, 1923.

\* From the Department of Pathology and Bacteriology and the Radium Division of the Department of Surgery, New York Post-Graduate Medical School and Hospital.

1. Dr. George S. Willis, one of the authors of this report.



About April 1, 1921, two very troublesome fissures appeared, one on the left thumb and the other on the middle finger of the left hand. At that time the hands were bathed in 5 per cent. phenol (carbolic acid) solution, and the fissures were then treated with solutions of brilliant green and gentian violet for one day. At the end of the day there was considerable redundant granulation tissue which was extremely sensitive. The next day the pain in these fissures was agonizing. Orthoform ointment was applied. At a consultation, possible malignancy was considered, but a diagnosis of infectious granuloma was made. April 10, a culture revealed numerous hemolytic streptococci in the lesions. The patient was confined to bed for three weeks, and suffered indescribable pain. The lesions were treated by exposure to sunlight, to red light and by bathing with iodine lotion. They healed in July. After that hydrous wool fat (lanolin) was applied every night.

Early in January, 1922, daily massage treatment was begun, and was continued for about two months. Later in the month a fissure appeared through the middle of a hyperkeratosis on the ball of the right thumb. From January to June this fissure remained open continuously, and it was protected with adhesive plaster or by a bandage. Various ointments and lotions were tried. Phenol seemed to afford most relief.

In July, a fissure appeared on the middle finger of the left hand at the site of the earlier serious lesion. This was exposed to 7.5 mg. of radium in a platinum-iridium needle for twenty minutes, and it healed about August 1. At this time he applied a similar 7.5 mg. needle of radium to the old fissure in the right thumb for twenty minutes. This was not so successful, and the fissure persisted unhealed. About August 20, this lesion suddenly became much more painful, keeping him awake at night using a bath of phenol every hour. The fissure remained the same size, but the surrounding tissue became more prominent. The patient went to the seashore, September 1, where he soaked his hands in the sea water all the forenoon and exposed them, especially the



Fig. 3.—Second specimen: small artery almost surrounded by nests of tumor cells; arterial wall thickened, and the lymph spaces in the media distended; this change corresponds to the vacuolizing degeneration of Gassmann, described by him (Fortschr. a. d. Geb. d. Röntgenstrahlen 2:199, 1898-1899) as a characteristic arterial lesion in roentgen-ray dermatitis; the close relation of the new growth to a vessel of this size is significant of the deep infiltration which has taken place.

sore thumb, to direct sunlight all the afternoon. At night he put on a dressing wet with a solution of sodium hypochlorite (hyclorite), which seemed to relieve the burning. This was continued for the first two weeks of September,

during which time the lesion became transformed to a flat ulcer about 10 mm. square, much larger than before and just about as painful.

September 14, he returned to New York. A dram of scarlet red ointment mixed with an ounce of olive oil was applied for twenty-four hours. The pain at once became worse, and overproduction of granulation tissue appeared.

This treatment was stopped after one day. The pain was now so severe that the patient walked the floor every night,



Fig. 4.—Second specimen: skin at extreme edge of specimen; surgical incision is the left border; the carcinoma evidently infiltrates beneath the cutaneous epithelium to the surgical incision.

and was compelled to keep the hand elevated all the time.

The protrusion of granulations continued, and the lesion progressively enlarged until nearly the whole ball of the thumb was involved. Clinically, it resembled the lesions on the left thumb and middle finger of the previous year, lesions which healed. The clinical diagnosis was infectious granuloma.

Excision of the central portion of the lesion was performed by Dr. J. J. Moorhead, October 28. The remainder of the lesion was excised, November 2, and the thumb was amputated by Dr. John F. Erdmann and Dr. J. J. Moorhead at the carpometacarpal joint, November 4. After the third operation there was great relief from discomfort, and the surgical wound healed with reasonable promptness.

At present (December, 1922), the skin over the backs of the hands appears almost normal except over the distal phalanges, where the epidermis is thin, smooth, dry and translucent so that the color is red. The palmar skin of all fingers is markedly altered, rough and hard, and harsh to the touch. On the left hand this alteration extends over the palm back to the wrist. On the right hand the palm is distinctly softer. There is a thick keratosis under the nail of the left thumb, with a healed fissure running through it, and a thick keratosis along the thumb side of the left middle finger. All the nails show exaggerated longitudinal striping, more marked on the left hand.

#### PATHOLOGIC REPORTS

*First Specimen.*—This tissue, removed, Oct. 28, 1922, was designated by the surgeon as "ball of right thumb, chronic inflammation of repeated radium irritation."

Gross: One piece measured 22 by 10 by 3 mm. It was mottled yellow, white and gray on one surface, and appeared to be largely necrotic. The tissue beneath was white and firmer than the surface, and showed hemorrhagic and gray markings.



The second piece measured 12 by 10 by 3 mm. This resembled the deeper parts of the first piece. It was generally soft.

Microscopic: Sections revealed the tissue to be necrotic for the most part. In it, however, one could recognize numer-

division figures were moderately numerous, as many as four being found in one oil-immersion field. The specimen did not present any normal tissue, so that the relationship between the normal and the abnormal could not be seen.

The appearance was highly suggestive of disintegrating squamous-cell carcinoma, but one would not be justified in making such a diagnosis without a more satisfactory specimen. It was suggested that a section including the border of the lesion, together with some of the adjacent more normal tissue, be submitted for microscopic examination.

Diagnosis: This was: Inflamed and necrotic papilloma, suggestive of squamous-cell carcinoma. (Specimen unsatisfactory.)

*Second Specimen.*—This, removed, November 2, included the entire visible lesion and a margin of surrounding tissue.

Gross: The specimen measured 25 by 18 by 12 mm. It presented a gray, mottled, necrotic surface with underlying soft parts. The superficial portion appeared to be more dense than the deeper part.

Microscopic: Sections from various portions of the specimen showed extensive necrosis and infiltration with pus. Everywhere the connective tissue stroma was invaded by irregular nests and columns of squamous epithelial cells,

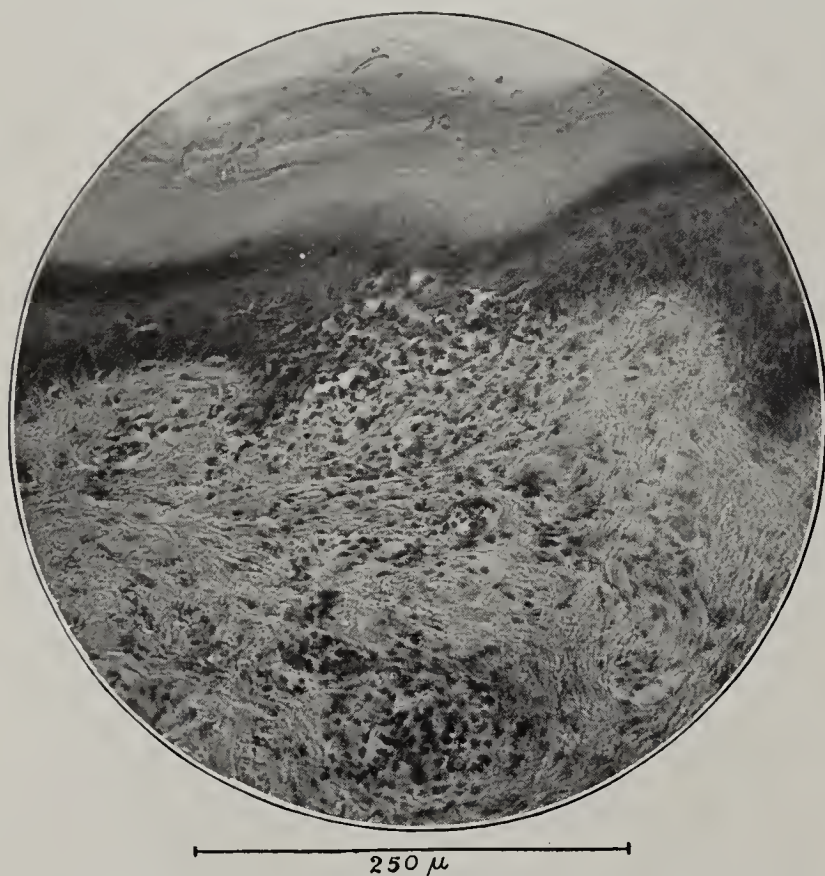


Fig. 5.—Third specimen, removed November 4; from edge of amputation incision at base of thumb; there is general hyperkeratosis, and near the center an edematous area infiltrated with round cells and plasma cells; this area includes the malpighian layer of the epidermis and the underlying dermis; it bears a suggestive resemblance to similar lesions described and figured by Unna in chronic roentgen-ray dermatitis.

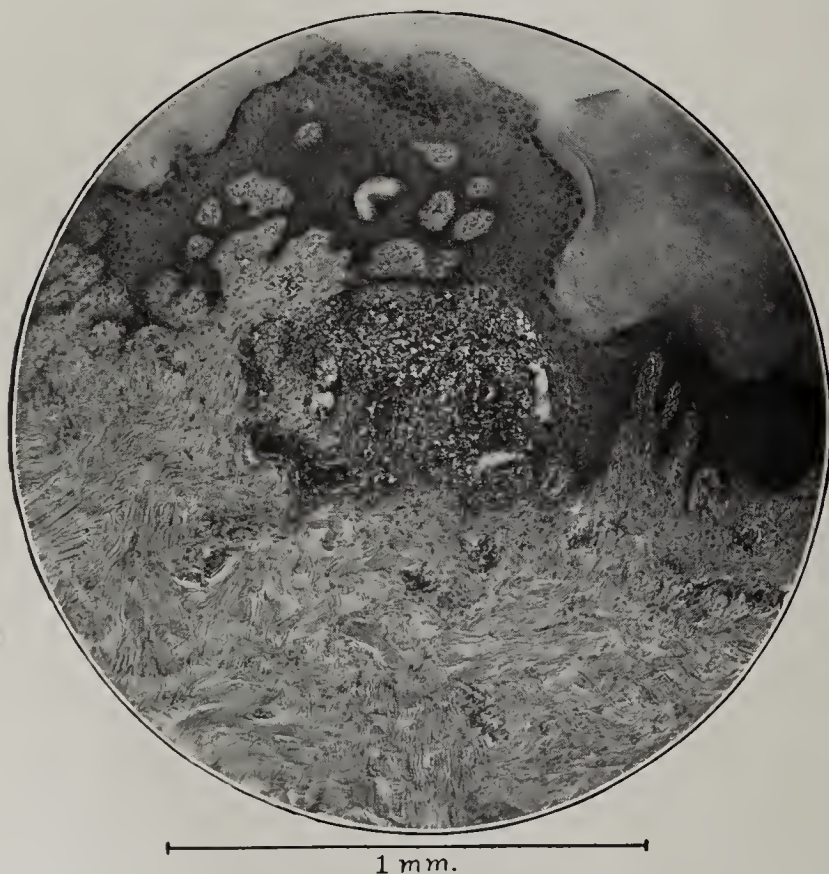


Fig. 6.—Third specimen: from the vicinity of amputation incision; the changes are of a more severe grade than shown in the preceding picture; hyperkeratosis and parakeratosis of the epithelium and exaggeration of the interpapillary epithelial ledges are distinct; near the center is a large edematous area, infiltrated with round cells and plasma cells, and involving the malpighian layer as well as the dermis; such a picture explains in part the roughness and harsh texture of the skin, and suggests a possible point for initiation of malignant activity.

ous irregular whorls of squamous epithelium. One small bit of tissue, which was viable, was made up of squamous epithelium with atypical cornification. In some places mitotic



Fig. 7.—Third specimen: in upper part, sections of nerve; the fibrous sheaths are thickened; the changes have not yet been studied in detail, but it appears possible that the numbness of the skin may be related to such alterations in the nerves.

many of which showed cornified centers. Groups of these cells were found infiltrating the lymph spaces close to the large blood vessels. Mitotic division figures were present in moderate numbers, and in some places as many as four could be found in an oil-immersion field. The epithelial new growth extended to the limit of the specimen in all the sections examined.

The extensive necrosis and the great irregularity in form, size and staining qualities of the epithelial cells, as well as their arrangement, all indicated a malignant activity.

Diagnosis: This was: Disintegrating squamous-cell carcinoma extending beyond the limits of the specimen submitted.

On microscopic examination of the sections from this specimen, Dr. James Ewing was consulted, and immediate amputation of the thumb was advised, November 3. This amputation was performed early on the following day.

*Third Specimen.*—This was the thumb of the right hand, amputated at the metacarpocarpal joint.

Gross: The ball of the thumb had been cut away over an area 37 by 23 mm. In the distal portion, under the nail, the



surface was mottled gray and dark brown, and was evidently extensively necrotic.

Microscopic: Sections from the floor of the wound cavity and from various places at its margin showed general inflammatory infiltration, and in several places small groups of the atypical squamous cells of the new growth.

Sections from the skin margin of the amputation wound disclosed that the skin was free from recognizable tumor cells. Even here, however, there was a definite excess of round cells in the lymphatic spaces about the subcutaneous blood vessels. There was also marked hyperkeratosis and parakeratosis of the epithelium.

Diagnosis: This was: Squamous-cell carcinoma of the distal phalanx of the right thumb, extending to the base of this phalanx. Mild inflammatory reaction at the site of the amputation incision at the level of the base of the first phalanx. Hyperkeratosis and parakeratosis of the cutaneous epithelium, even at the edge of the amputation incision.

#### COMMENT

It will be noted that the skin at a distance from the malignant lesion showed peculiar changes which bear a remarkable resemblance to some of those that have been described by Unna<sup>2</sup> in roentgen-ray dermatitis. The detailed consideration of these changes is beyond the intended scope of the present communication. We believe, however, that they are, in this case, related to radium exposure rather than to exposure to roentgen rays.

The accompanying illustrations are sufficiently explained by their legends. They are photomicrographs, not retouched.

We are willing to admit that the earlier work with roentgen rays throws some doubt on the causal relation of the radium to the lesions in this case. On the other hand, it is also evident that the exposure to roentgen rays was slight and somewhat remote in time in comparison with the more recent intensive exposure to large amounts of radium rays. It is at least clear that this exposure to radium has not sufficed to prevent the development of the carcinoma even if we would deny it any part in the causation. We are strongly inclined to the opinion that radium may, when exposure has been sufficient, give rise to changes in the skin predisposing to development of malignant new growth, much in the same way as roentgen rays are now generally known to do, and that radium has had precisely this effect in the instance before us. The reputation for harmlessness in this respect enjoyed by radium may after all depend on the fact that, so far, not very many persons have been exposed to large amounts of radium by daily handling over long periods. With the use of larger quantities of radium there is good reason to fear that neglect of precautions may result in serious injury to the radium workers themselves. For this reason the present case report has been presented.

#### SUMMARY

1. The patient worked with roentgen rays in his practice from 1905 to 1917 but not since then. Precautions for self-protection were carefully employed.

2. From 1912 to June, 1920, he handled radium, without precautions for self-protection, in small amounts up to 1915, but in quite large amounts from 1915 to 1920, from 200 to 365 mg. in individual tubes, taken between the right thumb and forefinger almost every day.

3. Various changes, which may be ascribed to the exposure to radium, began to be observed late in 1918,

and since early in 1920 the skin changes have required constant care.

4. In September, 1922, a fissure on the ball of the right thumb manifested a peculiar and extremely painful alteration in character, and on excision in October this lesion proved to be a squamous-cell carcinoma.

### Clinical Notes, Suggestions, and New Instruments

#### FRACTURE OF THE HEAD OF THE FEMUR, WITH DIS- LOCATION ON THE DORSUM OF THE ILIUM

GUY HINSDALE, M.D., HOT SPRINGS, VA.

The great rarity of fracture of the femoral head makes this case worthy of record. It occurred in a woman, aged 55, whose weight was about 160 pounds (72.5 kg.). She fell in attempting to jump from a motorboat to a wharf; she had reached forward to take a hand offered to her, and in jumping tripped over the gunwale of the boat and fell on the wharf, striking her left hip. She was immediately conscious of a severe injury, and stated that she had dislocated the right hip joint. She was unable to rise or move the limb, and was carried a short distance to her home.

I saw her at the landing, and took her to her room, where an examination disclosed the thigh partly flexed; the foot inverted; the limb shortened, and a slight crepitus on effort at rotation. The deformity was typical of dislocation on the dorsum ilii. On rotating the femur with the leg flexed, I could easily feel the rotation of the trochanter. Dr. B. Farquhar Curtis of New York was kind enough to see the patient shortly afterward, and under ether both of us made ineffectual efforts to reduce the dislocation. On a long radius adduction and rotation in the usual manner to effect reduction of the dislocation, it was not possible to effect a permanent reduction. The head could be placed opposite the acetabulum, but would not enter. We thought that some ligament or the capsule intervened. Crepitus was felt in these attempts. The shortening was about 3 inches.

The following morning the patient was taken 30 miles to Portland, Maine, where a roentgenogram revealed a fracture of the femur with the fragment lying on the lower margin of the acetabulum. There was a posterior dislocation of the femur on the dorsum of the ilium. Dr. E. G. Abbott, to whose care the patient was consigned, operated the same morning, and after opening the joint removed the fragment and effected reduction of the luxation. The wound was closed and a Buck's extension applied to the limb.

The fragment comprised about one-third the head of the femur. It measured 15 by 35 by 30 mm., and included the insertion of the ligamentum teres. The roentgenogram showed this fragment plainly on the lip of the acetabulum.

Recovery was prompt and satisfactory. The extension was removed in three weeks and motion instituted at the joint. The patient walked in two months, and in four months was perfectly well.

As to causation, is it not possible that the catching of the foot on the side of boat turned the head of the bone out on the edge of the acetabulum, and in the fall the patient struck the trochanter or fell with bent knee on the lower end of the femur? In either case a violent shock to the femur, driving the head against the brim of the acetabulum, might have split the head, part of it breaking off, while the bulk of it slipped out of the joint, producing a posterior dislocation. Fracture of the head of the femur is so rare that Keen<sup>1</sup> says that only three positive cases have been reported. Cotton<sup>2</sup> states that the only cases he has seen have been associated with dislocation: "The last one was associated with a dislocation, now quite complete, occurring in a Charcot joint then in the early

2. Unna, P. G.: Die chronische Roentgendermatitis der Radiologen, Fortschr. a. d. Geb. d. Röntgenstrahlen 8: 67-91, 1904-1905.

1. Keen: Surgery, Philadelphia, W. B. Saunders Company 2: 226, 1914.

2. Cotton, F. J.: Personal communication to the author.



stage." Of course, epiphyseal separations occur in children, but these are not what we are considering at present.

Keen refers to a case reported by Riedel and quoted by Hoffa which "resembled a backward dislocation of the hip, the operation revealing a splitting of the neck and head longitudinally."

In the case I have described, the strain exerted was comparatively slight, a misstep and fall; but the strain was exerted during an extreme position of the limb.

#### POSTINFLUENZAL HERPES ZOSTER

LESTER HOLLANDER, M.D., PITTSBURGH

The case here recorded presents a number of interesting points, in particular the after-effects of the recent influenza epidemic.

#### REPORT OF CASE

Mrs. W. D. W., aged 63, American born, a widow, seen, March 2, 1922, presented a marked vesicular eruption along the entire course of the eleventh dorsal nerve, beginning in the median line of the back and extending under the breast to the midclavicular line. The diagnosis of herpes zoster was unquestionable. The patient had been in perfect health during her entire life. There had been one pregnancy.

In March, 1919, she suffered a slight attack of influenza, which kept her in bed for three days. Her symptoms were mild and of the respiratory type. After getting up, she could not go through her daily routine as before, and she felt tired. Occasionally, she experienced vague pains, which her physician attributed to a gastro-intestinal toxemia, although there were no other symptoms except occasional lassitude, early exhaustion and vague pains.

After about a year, the patient was taken to a hospital, where a thorough search for a focus of infection or a manifestation of a metabolic disorder was made. As nothing was found, she was discharged.

In the fall of 1920, the vague pains, which continued, became localized about the sacro-iliac region, running down the left iliac fossa and about the thigh. This was considered from the angle of renal calculi, stricture of the ureter, sciatica and retrocecal appendicitis. The pains and discomfort remained the same for a few months. After a severe coryza, the symptoms became more marked, and they were accompanied by a vesicular eruption along the course of the sciatic nerve of the left side. No diagnosis was made; but the subsequent examination of the scars, their unilateral character, and the previous history stamps the condition as herpes zoster.

She was fairly comfortable from October, 1921, until January, 1922, when she again suffered pain and discomfort, in the right upper abdomen and right lower costal region. Examination, which was made for pleurisy, chronic appendicitis, gallstones, cholecystitis and duodenal ulcer, was without results.

About the middle of February, the patient had an attack of grip, and shortly afterward the pain about the chest became much more severe. It was followed by a herpetic eruption, which diagnosed as stated. A protective dressing controlled the eruption, which lasted about six weeks, drying off very slowly and leaving the skin highly sensitive to pressure, cold or heat. As the patient said, the skin felt "like cigaret paper."

Internally, large doses of neocinchophen were given, and eliminative measures were carried out. The pain, though less acute after the disappearance of the eruption, continued until July.

In June, the patient could not use her right arm on account of pain and discomfort. Shortly, she developed a brachial neuritis (neurologist's report). This increased in severity for about six weeks, and resulted in an ankylosis of the right shoulder, through disuse.

Although a fair amount of motion returned, the patient is at present (Jan. 3, 1923) still suffering with pain in her right arm and shoulder, the motion of which is greatly impaired.

#### COMMENT

This case presents several points of interest:

1. The history of a mild attack of influenza, with slow recovery.

2. Two attacks of herpes zoster, with a protracted and insidious onset, precipitated in each instance after an intercurrent infection.

3. The appearance of a brachial neuritis, which may again be shown, as on two previous occasions, to be a herpetic manifestation.

4. The apparent continuity and ascent of the involvement of the posterior root ganglions, sacral, dorsal and cervical.

The explanation which suggests itself is that, after the slight systemic influenzal attack, the infection became dormant in the posterior root ganglions and made its appearance as a chronic infection, with exacerbation at a time when the patient's resistance was lessened by an intercurrent infection.

625 Jenkins Building.

#### CASE OF CEREBRAL NEOPLASM SIMULATING DEMENTIA PARALYTICA, WITH OPERATION AND COMPLETE NEUROLOGIC AND MENTAL RECOVERY

CHARLES ROSENHECK, M.D., NEW YORK  
Neurologist, Hospital for Joint Diseases

That intracranial growths are often responsible for varied psychotic disturbances is well known to neuropsychiatrists. These mental changes may vary from mild alterations to grave psychic defects. Nor is the location of the tumor mass indicative or diagnostic of the psychosis which may be part of the clinical picture. In other words, it would be absurd to attempt localization of an intracranial mass on the evidence furnished by the psychic alterations. One has to depend entirely on the disturbances in neurologic functions for localizing data. Some modifications of these recognized observations may be made, however, in growths involving the frontal lobes. In this area, a fairly well defined psychotic picture unfolds itself, so that, in association with other neurologic signs, one may safely venture a positive localizing diagnosis.

The case here reported presented the neurologic signs and the psychiatric picture in a manner so vivid and clear cut that the diagnosis and localization were a matter of comparative ease. Since the mortality in brain tumors still remains discouragingly high, and this patient survived the operative procedures and made a complete mental and neurologic recovery, one is warranted in giving the sequence of events in an interesting neuropsychiatric syndrome.

#### REPORT OF CASE

*History.*—A man, aged 50, a butcher, gave a history that was uneventful until fifteen years ago, when he was struck on the right side of the head with a glass bowl. He was not rendered unconscious, and the scalp wound healed readily. Apparently, there were no disturbing factors until, within a few months after the injury, an insidious headache developed which, as the years went by, became increasingly worse. The pain was little abated by the ingestion of headache remedies in large amounts, taken over a period of fourteen years. The headache was more or less continuous and was worse at night. Although there was some remission in its severity, it was never entirely absent. The idea of suicide was often entertained by the patient as a relief from his miserable condition. Two years ago, he showed for the first time a decided personality change. He neglected and mismanaged his business, indulged in fantastic financial transactions, became unduly generous to friends and strangers, and thus managed to rid himself of all his money and business. Marked irritability of temper also became manifest, and memory defects, particularly for recent events. No gross conduct anomalies intruded themselves in the clinical picture, but an inordinate sense of well-being, particularly noticed by his relatives, became increasingly evident. Defects in the psychic and

\* Presented before the Section on Neurology and Psychiatry of the New York Academy of Medicine, Dec. 12, 1922.



emotional sphere now became obvious by the development of alternating periods of depression and elation, indulgence in silly witticisms—the “witzelsucht” of the Germans—and minor infractions of conduct. At this time, a diagnosis of paralytica dementia was seriously entertained by his medical advisors. About one year ago, his vision became affected, and diplopia was complained of a number of times. There was no vomiting, vertigo or gait disturbance at any time during the course of the affection. The constitutional state remained excellent, the digestive system functioning in a normal manner. In spite of his condition, a steady gain in weight was noted. Sleep was disturbed on account of the headaches. Convulsive phenomena were present twice, six weeks before the operative procedure was undertaken. There was complete loss of consciousness both times, recovery being complete without residual phenomena of any type.

*Examination.*—There were no abnormal attitudes of the voluntary motor system. Gait and station were entirely normal. All coordinative tests were correctly performed. All skilled test acts showed no deviation from the normal. There was no dysmetria or other disturbances of dyssynergia.

The deep reflexes of the upper and lower extremities showed a greater activity on the left side than on the right side.

The superficial reflexes showed normal responses, with the exception of the left abdominal, which were elicited with difficulty and at best responded feebly. A suggestive pathologic extension of the great toe was present on the left side. There were no abnormal involuntary movements or demonstrable abnormal associated movements. The peripheral neural apparatus showed no pathologic alterations or impairment in its behavior.

The general sensory examination revealed no demonstrable deviations from the normal.

*Cranial nerves:* The pupils reacted promptly to light and accommodation. The fundi oculi showed marked narrowing of the arteries, engorged and tortuous veins, retinal hemorrhages, and edema around the nerve heads, with an elevation of 4 diopters in the right eye and 6 diopters in the left eye. The seventh nerve on the left side showed a central type of palsy, which manifested itself in voluntary efforts and emotional behavior. The rest of the cranial nerves showed complete functional integrity.

Serologic examination of the blood and spinal fluid was entirely negative.

*Comment.*—Thus, we have a history of trauma (a not uncommon provocative factor in brain tumors), headaches extending over a period of many years, grave psychic changes, which simulated paralytica dementia quite faithfully, and finally the development of left sided hemiplegic phenomena plus marked double choked disks.

*Diagnosis.*—In view of these findings, a diagnosis of right frontal lobe neoplasm was ventured and the patient was referred to Dr. Elsberg for operation.

*Operation and Result.*—A large growth occupied the right frontoparietal area, extending from the dura to the base of the frontal fossa, and displacing the brain mass in all directions for a considerable distance. It was readily removed, and proved to be an endothelioma, which had evidently taken its origin from the dura mater.

The patient showed no ill effects from the operation and no disturbing incidents marred his convalescence. There were no further headaches; the mental condition cleared up amazingly within a short time after the operation, and the elevation of the disks receded to normal, although some haziness of the nerve head with slight blurring of the edges still remains as the sole residual of the preexisting papilledema. The hemiplegic phenomena have disappeared, a very slight increase in the reflexes being still discernible as evidence of a former involvement.

At present, a little more than six months since the removal of the tumor, the patient is actively engaged in business and is apparently in excellent physical and mental condition.

370 Central Park West.

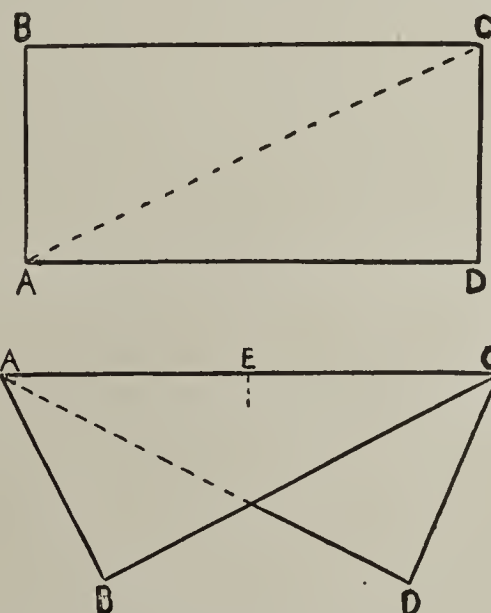
## A DOUBLE TRIANGLE TOWEL SHOULDER-CAP

GEORGE DAVID CUTLER, M.D., BOSTON

I have found the folded towel shoulder-cap here described useful to retain dressings on wounds of the shoulder, the axillary region and the groin. It has been used successfully as a shoulder-cap in combination with a swathe following operations on the breast, especially to complete the dressing of the operation wound following amputation of the breast and dissection of the axilla.

A sterile towel measuring 18 by 36 inches is folded along the line *AC*. The folded towel is then placed over the shoulder so that the corner *B* falls back of the arm, and *D*, in front. *A* is tucked under the swathe posteriorly, and *C*, anteriorly. Safety pins are employed for fastening along the line of union of the shoulder-cap and the swathe. Corners *B* and *D* are then overlapped under the arm and pinned, finishing the dressing.

A towel so folded has also been found useful as a head bandage, for which use it varies only slightly from the triangular bandage. In this connection, it may be used as an operating cap. It is valuable for retaining dressings at the groin, as well as in the axilla. In the first instance, the



Double triangle towel shoulder-cap: method of folding.

points *A* and *C* are pinned beneath the opposite axilla. *B* and *D* are pinned under the arm on the affected side, with additional pinning at other points as required, especially in making a dart at *E*. For use at the groin, the points *A* and *C* are pinned together above the opposite hip and *B* and *D* at the inner side of the diseased or wounded thigh.

Its advantages over the triangular bandage are apparent only in the vicinity of the flexures of the body.

270 Commonwealth Avenue.

## A CASE OF RENAL GLYCOSURIA

WILLIAM ALLAN, M.D., CHARLOTTE, N. C.

In defining renal glycosuria, Strouse<sup>1</sup> gives four points of differentiation from diabetes mellitus: (1) glycosuria without hyperglycemia; (2) glycosuria almost entirely independent of carbohydrate intake; (3) absence of diabetic symptoms, and (4) no subsequent development of diabetes mellitus. Paullin<sup>2</sup> has added a fifth characteristic in this condition, that sugar shall be constantly present in the urine.

That renal glycosuria shall not later become diabetes mellitus necessitates a prolonged observation of such patients, and this is the reason for reporting a case in which glycosuria was discovered eighteen years ago, the patient having been employed in a hospital for the sake of supervision for the

1. Strouse, Solomon: Renal Glycosuria, Arch. Int. Med. **26**: 768 (Dec.) 1920.

2. Paullin, J. E.: Renal Glycosuria, J. A. M. A. **75**: 214 (July 24) 1920.



last nine years. Bailey<sup>3</sup> has reported a case in which glycosuria has been known for ten years, and says, "The patient's history points strongly to this being a congenital condition." Strouse has observed a case for eight years, Garrod<sup>4</sup> and Bonninger<sup>5</sup> each one for six years, Goto<sup>6</sup> one for five years, and Paullin one for four years. Johnsson<sup>7</sup> has recently reported two cases of ten and sixteen years' duration, respectively.

## REPORT OF CASE

*History.*—A white woman, aged 35, single, who had been sent to a clinic because of infected sinuses, was referred to me, Jan. 25, 1922, with glycosuria. For the preceding six weeks she had fever, headache and stopped nose, with infected left antrum and ethmoids; ten days before I saw her the nose "abscessed again," and the antrum had been washed the day before.

The mother died of heart trouble and cancer of the uterus at 50; the father was healthy at 80. The patient had four brothers, one with asthma, one with lung trouble, one with indigestion, and with some sort of kidney trouble. She lost a sister from chronic interstitial nephritis following childbirth. Two sisters were living, one healthy, one with ulcerated bowels. A third cousin died with diabetes mellitus.

The patient had had pertussis, measles, chickenpox and scarlet fever, but not typhoid or malaria. She had grip in 1912, and her sinus troubles date from this sickness; in 1919 she had influenza. At the age of 12 she had severe colic all one night, and again four years later; she had diarrhea with these attacks, but did not remember having either fever or vomiting. The pain was in the middle of the abdomen. In 1918 she had severe colic across the upper abdomen, requiring morphin. She had had a good deal of colic and constipation all her life. The menstrual history had been normal. At the age of 18 she was weak, nervous and short of breath; she had pruritus vulvae, and sugar was found in the urine. She did not remember having had at any time unusual hunger, thirst or polyuria. Her weight when 18 was 108 pounds (49 kg.); during the last seventeen years it had varied from 85 to 100 pounds (38.5 to 45 kg.). During the first nine years after glycosuria was discovered she took medicine intermittently, and once restricted her diet for a short time. During the last eight years she had been employed in the linen room at a hospital, where she was under medical supervision. She had dieted now and then, but never adhered to a diet long, though she once fasted four days. She said that during the last seventeen years the urine had never been sugar free at any examination; but, on the whole, she thought that she was as well as when sugar was first discovered.

*Examination.*—Because of the glycosuria, the patient was referred to me for treatment, preliminary to opening the sinuses. She was pale, thin and frail, having no appetite, thirst or polyuria, and suffering steadily and intensely from the infected left antrum. Five years before and again during the preceding year she had some swelling of the ankles. The skin was pale and transparent. The pupils were equal, and reacted to light and distance. The ocular movements were normal; there were no thyroid eye signs. The left antrum and ethmoids were infected. The throat, tongue and teeth were normal. There was no thyroid struma, and no enlargement of the superficial glands. The lungs were clear. The heart size and sounds, rate and rhythm were normal. The blood pressure was: systolic, 120; diastolic, 80. There was no tremor of the extended fingers. The abdomen was normal. The reflexes, joints and spine were normal. The height was 63 inches (160 cm.); the weight was 98 pounds (44.5 kg.). Blood examination revealed: hemoglobin, 90 per cent.; red cells, 4,464,000; white cells, 17,600. The urine was acid, with a specific gravity of 1.035; examination was negative for albumin, bile and indican: 4 per cent. glucose was present; microscopic examination was negative.

*Treatment and Course.*—Thinking this was a case of diabetes mellitus, I put the patient on a diet of 270 gm. of lean meat daily, and after six days increased this to 360 gm., with 3 ounces of thrice boiled cabbage. She began to show diacetic acid the second day, and edema of the ankles the third day of this regimen, and lost 7 pounds (3 kg.) in as many days. The glycosuria was undiminished, and on the eighth day the blood sugar, two and one-half hours after 90 gm. of lean meat, was 10 mg. for each hundred cubic centimeters, while the urine was still full of sugar. On the thirteenth day she was given 1.68 gm. of glucose for each kilogram of body weight. The blood sugar was 23 mg. two hours later, and 15 mg. three hours later. She was then given bread with each meal, and the diacetic acid disappeared after one day and the edema of the ankles after two days. Her diet was rapidly increased until she was eating what she pleased, after two weeks of diet restriction in a vain effort to render the urine sugar free. During the following forty-one days on unrestricted diet the urinary output averaged 50½ ounces, with sugar constantly present, the amount excreted in twenty-four hours varying from 16 to 49 gm. Varying the diet had no constant effect on the amount of sugar excreted. On a diet containing protein, 104 gm., fat, 80 gm. and carbohydrate, 62 gm., the urinary glucose amounted to 23.5 gm. On protein, 62 gm., fat, 184 gm. and carbohydrate, 96 gm., only 16.5 gm. of glucose was excreted. On protein, 37 gm., fat, 42 gm. and carbohydrate, 68 gm., 39.5 gm. of glucose was excreted. Fermentation and phenylhydrazin tests confirmed the supposition that the urinary sugar was glucose. The phenolsulphonephthalein output was always above 50 per cent. in two hours. A radical sinus operation was performed under ether, February 18, with uneventful recovery. March 10, the patient was given 3.3 gm. of glucose for each kilogram of body weight. The blood sugar before was 12 mg., and two hours after, 13 mg. for each hundred cubic centimeters. In July and October, 1922, the patient still had marked glycosuria with normal blood sugar.

## CONCLUSION

The various postulates for the diagnosis of renal glycosuria are fulfilled in this case, and a patient with known constant glycosuria for eighteen years has not yet developed any signs or symptoms of diabetes mellitus.

## HEMATURIA AND APPENDICITIS

THOMAS W. TORMEY, M.D., AND ALBERT R. TORMEY, M.D.,  
MADISON, WIS.

Many cases of stone in the ureter have been mistaken for acute appendicitis, and appendectomy has been performed; but it is rather rare for appendicitis to be mistaken for stone in the ureter.

## REPORT OF CASE

*History.*—C., a farmer, aged 52, was seized with a severe pain in the right upper abdomen, Dec. 23, 1922, which persisted for one hour and was relieved by hot applications. The following day, he had another attack of pain on the right side, radiating to the scrotum and the head of the penis. He took castor oil, and felt relieved. He noticed that blood was present in the urine.

During the night, he had another attack of pain, which was so severe that he called a physician, who gave him a hypodermic of morphin and atropin. It was necessary to give three-quarters grain of morphin in order to relieve the pain. He was advised to enter the hospital, but refused. There was no rigidity of the abdominal muscles, and no nausea or vomiting.

The following afternoon, he had another severe attack of pain, radiating from the lumbar region anteriorly and into the scrotum, and he passed more blood. He now consented to be removed to the hospital.

*Examination.*—He was admitted at 11 p. m., December 25. At this time, his temperature was 98.8 F.; pulse, 88; respiration, 20; leukocyte count, 10,400. Urinalysis revealed a specific gravity of 1.030, a trace of albumin, a few red blood cells and casts + + + +. Otherwise, the physical examina-

3. Bailey, C. V.: Am. J. M. Sc. 157:221 (Feb.) 1919; Studies on Alimentary Hyperglycemia and Glycosuria, Arch. Int. Med. 23:455 (April) 1919.

4. Garrod, A. E.: Brit. M. J. 2:850, 1912.

5. Bonninger, M.: Deutsch. med. Wchnschr. 34:780, 1908.

6. Goto, Kingo: Alimentary Renal Glycosuria, Arch. Int. Med. 22:96 (July) 1918.

7. Johnsson, A.: Finska Läk.-Sällsk. Handl. 64:429 (Sept.-Oct.) 1922; abstr. J. A. M. A. 80:70 (Jan. 6) 1923.



tion was practically negative. On account of the findings, a working diagnosis of right ureteral calculus was made.

The following day, however, he passed but 13 ounces (390 c.c.) of urine, which had a heavy trace of albumin and casts + + + +. He complained of being drowsy, but felt comfortable otherwise. The blood pressure was: systolic, 130; diastolic, 85. Hot packs were employed, and he was given plenty of fluids, and in forty-eight hours, the urinary output increased to 35 ounces (1,050 c.c.), the casts and blood disappeared, and he felt better in every way. Roentgen-ray examination of the right kidney and ureter regions was negative for ureteral calculi. On cystoscopic examination, a No. 5 French catheter met some obstruction about 4 inches (10 cm.) from the ureteral orifice on the right side, but there was some urine coming from the kidney. The left kidney and ureter were normal. The patient felt comfortable. There was no rise in temperature, and the leukocyte count remained at 10,500. Following cystoscopic examination, there was some local tenderness on deep pressure in the right iliac fossa.

*Operation.*—A modified Gibson incision was made, and the lower ureter was isolated, but no evidence of a calculus was found. There was no thickening of the ureteral wall and no dilatation. On palpation, a small mass was felt within the peritoneum, and this led us to open the general cavity rather than continue toward the kidney. A gangrenous appendix dipping over the pelvic brim was found, the perforated tip being bathed in about 1 dram of colon pus. This was removed; a cigaret drain was inserted, and the wound was closed in layers.

The patient had an uneventful convalescence.

#### COMMENT

The case history and urinary findings, together with the lack of fever and local tenderness in the right lower quadrant of the abdomen, were sufficient grounds for a working diagnosis of ureteral calculus. The sudden decrease in urinary output following admission to the hospital also pointed to a kidney lesion.

The position of the appendix, which was lying on the ureter just below the pelvic brim, was probably the cause of the hematuria and the referred pain. It is also possible that there was sufficient congestion of the ureter at this point to interfere with the passage of the catheter.

811-816 Gay Building.

#### A SIMPLE METHOD OF USING GIEMSA'S BLOOD STAIN

M. W. LYON, JR., M.D., SOUTH, BEND, IND.

The customary method of using Giemsa's stain by employing the freshly diluted stock solution, 1:10 or 1:15, with distilled water, makes the use of this excellent stain somewhat troublesome and expensive. The procedure here described simplifies the method, saves stain, and makes it almost as easy to use as is Wright's stain or its modifications. The blood film is fixed by immersing the slide in a jar of methyl alcohol or by pouring the alcohol over it. A half minute appears ample time. After drying, the film side is covered with distilled water, and from three to five drops of the stock Giemsa stain is added to the water in different portions of the slide. A slight rocking of the slide insures uniform mixing of the stain and water. The mixture of the stain and water is allowed to act for about fifteen minutes. The stain and water are then washed off with distilled water until the film appears pink. The results appear more uniform and certain than they do in the use of Wright's stain or its modifications for the formed blood constituents, and are particularly good in the case of malaria parasites.

*Nucleoprotein in Tubercle Bacilli.*—While it has been known for a long time that nucleoprotein constitutes a considerable part of the cell of tubercle bacilli, it was not until 1898 that an attempt was made to separate a nucleic acid from this organism.—Johnson and Brown, *J. Biol. Chem.*, December, 1922.

## Special Article

### THE CARE AND FEEDING OF INFANTS

(Continued from page 401)

[NOTE.—This is the seventh of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

#### THE ARTIFICIAL FEEDING OF INFANTS

A critical study of the work of the last fifty years in the artificial feeding of infants shows that the morbidity and mortality of infants has been definitely lowered. This has been brought about largely through a better understanding of the biology and chemistry of milk, and through applying to its collection and preservation the knowledge of the laws governing the incidence and growth of bacteria.

The progress during the last decade in the artificial feeding of infants may be summarized in the statement that the one great step that has placed their feeding care on a sound basis is that their physiologic requirements are now given first consideration. This has been made possible through a better understanding of individual needs in fat, protein, carbohydrates, salts, accessory food factors and water, to secure body growth and development.

General rules may be laid down for the average full-weight and robust infant (fortunately, in the majority) who only requires supervision over his reaction to a properly balanced diet. But there remains a considerable number comprising (1) infants born congenitally weak, and (2) infants who have developed pathologic conditions secondary to food disturbances and infections. These will require the *strictest individualization* in the selection and application of their diets.

If conclusions were drawn leading to the belief that our knowledge of artificial feeding is complete, great injustice would be done to the infant. Indeed, much is to be hoped for as our information on this subject advances, and this applies with equal force not only to the feeding of the exceptional and sick infant but also to the feeding of the normal child.

Laxity in the regulation of the feeding care of the infant during its first weeks is one of the greatest obstacles to a more complete success, for in this period the pathologic foundation is laid on which nutritional disturbances develop. The successful feeding of infants depends, therefore, on the recognition of the necessity of (1) a proper interpretation of the needs of the individual infant, and (2) experience on the part of the physician in meeting those needs.

#### COW'S MILK AND GOAT'S MILK

It cannot be too strongly emphasized that artificial feeding must not be considered as a substitute for breast feeding but only as an emergency measure. The best alternative is feeding with properly modified milk of other animals, and, for practical reasons, cow's milk and goat's milk have been found best suited for this purpose. Because of the marked chemical, physical and biologic differences between human milk, and cow's



and goat's milk, human milk is superior to the others in infant feeding. The differences are greater than Table 5 indicates.

#### COW'S MILK

Cow's milk is more opaque than human milk, although the latter may contain a greater percentage of fat. This is due to the opacity of the calcium-casein, present in greater proportion in cow's milk. Cow's milk is faintly acid or amphoteric when freshly drawn, but ordinarily is distinctly acid in reaction when consumed. Human milk is amphoteric or alkaline.

TABLE 5.—COMPARATIVE ANALYSIS OF BREAST, COW'S AND GOAT'S MILK

Reaction	Human Amphoteric or Alkaline	Cow's Amphoteric or Acid	Goat's Amphoteric
Specific gravity.....	1.010 to 1.040	1.029 to 1.034	1.030
Proteins .....	1.5 to 2.0%	3.5%	3.76%
Caseinogen .....	0.5 to 0.75%	3.02%	2.87%
Lactalbumin .....	1.23%	0.53%	0.89%
Effect of rennin.....	Clots in fine curds	Large curds	Large curds
Fat .....	3.5 to 4.0%	4.0%	4.0%
Lactose .....	6.0 to 7.0%	4.5%	4.5%
Salts.....	0.2%	0.75%	0.85%
Total solids.....	12 to 13%	13 to 14%	13.0%
Water .....	86 to 88%	86 to 87%	86 to 87%
Bacterial content.....	Practically sterile	Never sterile	Never sterile

Three times as much protein is found in cow's milk as in human milk. The reason for this is obvious when we recall that the ratio of growth of the calf to that of the infant is about as 2:1. Furthermore, the protein in cow's milk consists chiefly of casein (3.02 per cent.) and a little lactalbumin (0.53 per cent.), while human milk contains from 0.5 to 0.75 per cent. of casein and 1.23 per cent. of lactalbumin. The sugar in the two milks varies greatly in amount but not in kind. Cow's milk contains more than three times the amount of inorganic salts in human milk.

Infants on whole cow's milk, therefore, live on a higher plane of mineral metabolism than infants on breast milk. Owing to a similar proportionate content of salts in the two milks, simple dilution, while equalizing most of the salts, will leave others either in excess or insufficient. Fortunately, excessive amounts of milk salts are rarely harmful to normal infants, as those in excess of the body needs are excreted. The greater danger lies in mineral starvation or a diet improperly balanced in its mineral content. The importance of salts to body function and growth in the artificially fed infant will be considered later in detail.

There is no great difference in the average amount of fat in the two milks; however, both in human milk and in cow's milk fat is the most variable constituent.

The curd from cow's milk is usually tougher and forms in larger masses than in human milk. There are also differences in antibodies, ferments, etc.

**Protein.**—The protein in cow's milk consists of insoluble calcium caseinate and soluble lactalbumin, lactoglobulin, mucin and opalisin. Of these, the casein (85 per cent.) and lactalbumin (15 per cent.) form the greater part of the protein content, the others existing in negligible quantities.

**Casein.**—This is in suspension, and is rapidly precipitated by weak acids and by rennin, but it is not coagulated by boiling. The casein of raw cow's milk precipitates as large, tough curds, thereby differing from the fine, flocculent curd of human milk. The physical properties of cow's milk curds can be changed

by boiling the milk, and by adding alkalis, such as sodium citrate, sodium bicarbonate and lime water. Following such additions, the curd becomes finely divided, resembling the curds of breast milk. By the addition of cereal water in the milk dilution, a similar effect is obtained through the mechanical fragmentation of the curd by the interspersed starch particles. Splitting of the curd shortens the period of digestion, the finer curds passing the pylorus more readily, which brings them in contact with the intestinal juices in a shorter time.

**Lactalbumin.**—This is not coagulated by acids or by rennin, but is coagulated by heating to 72 C. or higher.

**Fats.**—The fat is suspended in the milk serum as an emulsion. The droplets or globules vary in size; on the average, they are smaller in milk from Holstein than from Jersey, Guernsey or shorthorn breeds. The fat droplets are lighter than the milk serum and therefore rise on standing (gravity cream), or they may be readily separated by centrifugal force (centrifugal cream). The chemical composition of the fat of cow's milk differs from that of human milk in that it contains more tripalmitin and less triolein. This difference is of practical importance, since the calcium and magnesium soaps of palmitic acid are much less readily absorbed from the intestinal tract than are the soaps of oleic acid. Cow's milk also contains a considerable proportion of glycerids of the lower or volatile fatty acids, which under certain circumstances may irritate the intestinal tract, resulting in diarrhea. Not only is there difference in the size of the fat droplets from certain breeds of cattle, but the average total fat content varies very materially. The average fat content for different herds as given by Van Slyke and Publow,<sup>17</sup> is reproduced in Table 6.

**Lactose.**—This is the principal sugar in both cow's and human milk, its chemical composition in the two being identical. Average human milk contains from 6 to 7 per cent., and cow's milk from 4 to 5 per cent. The larger sugar content of human milk, with its fermentation, accounts for the laxative effect of breast-milk feeding when the milk is abundant.

**Salts.**—Salts are necessary in digestion and in every step of metabolism, from absorption to secretion and

TABLE 6.—FAT CONTENT OF MILK OF VARIOUS HERDS

Breed	Fat Percentage
Holstein-Friesian .....	3.26
Ayrshire .....	3.76
American Holderness.....	4.01
Shorthorn .....	4.28
Devon .....	4.89
Guernsey .....	5.38
Jersey .....	5.78

excretion. The rôle of salts in both normal and pathologic conditions has assumed increased importance under the investigative studies of the last few years.

Human milk contains 0.2 gm. of ash in 100 c.c., and cow's milk 0.75 gm. The difference in percentage in human and in cow's milk is equalized, as the body uses only what is necessary for its life and growth.

All the salts except those of iron are in larger amounts in cow's than in human milk. Cow's milk contains relatively a very large amount of calcium phosphate, while the amount of iron in cow's milk is less than that in human milk. Human and cow's milk differ greatly in the form of the phosphorus content.

17. Van Slyke and Publow, quoted by Heineman (Footnote 24).



In human milk, three quarters of the phosphorus is in organic combination, while in cow's milk only one quarter is so combined. Neither in human nor in cow's milk is the iron content sufficient to meet the demands in the first year of life; the infant must depend on the iron stored during the fetal life.

The percentages and grams of the different salts of human and cow's milk, as found in 100 parts of ash, are given in Table 7.

TABLE 7.—SALTS OF HUMAN AND OF COW'S MILK

AVERAGE PERCENTAGES OF DIFFERENT SALTS IN THE ASH							
	CaO	MgO	P <sub>2</sub> O <sub>5</sub>	Na <sub>2</sub> O	K <sub>2</sub> O	Cl	Fe
Human milk.....	23.3	3.7	16.6	7.2	28.3	16.5	0.00015*
Cow's milk.....	23.5	2.8	26.5	7.2	24.9	13.6	0.00007*
GRAMS OF SALTS FOR EACH HUNDRED CUBIC CENTIMETERS OF MILK							
	CaO	MgO	P <sub>2</sub> O <sub>5</sub>	Na <sub>2</sub> O	K <sub>2</sub> O	Cl	Fe
Human milk.	0.0458	0.0074	0.0345	0.0132	0.0609	0.0358	0.00017*
Cow's milk..	0.172	0.02	0.2437	0.0465	0.1885	0.082	0.00007†

\* Holt, L. E.; Courtney, A. M., and Fales, H. L.: A Chemical Study of Woman's Milk, Especially Its Inorganic Constituents, Am. J. Dis. Child. **10**: 229 (Oct.) 1915.

† Langstein and Meyer: Säuglingsernährung und Säuglingsstosswechsel, Wiesbaden, J. F. Bergman, 1914, p. 22.

In all the constituents except phosphorus pentoxid and iron, the percentages of the different salts in the two milks are practically the same. The higher proportion of phosphorus in cow's milk is due to the large amount of casein. While the *proportion* of salts in cow's milk is nearly the same as in human milk, the *amount* is about three times as great. Unless, therefore, cow's milk has been diluted with more than twice its volume, these inorganic constituents are furnished to the infant in equal proportion to that in human milk (Holt). Human milk contains about twice as much iron as cow's milk, and dilution of cow's milk results in a decrease in the iron content which must not be carried too far unless supplemented by other iron-containing food.

**Ferments.**—Cow's milk contains a number of ferments, but little is known of their value to the infant. Escherisch and Hamburger thought that they had a favorable influence on the processes of metabolism. Salge discovered that tetanus and diphtheria antitoxins could be utilized by the infant only when found in human milk, while when contained in the milk of other species they did not get into the body fluids.

**Vitamins.**—Cow's milk contains fat-soluble A in considerable quantity, and water soluble B and C in lesser amounts.

**Bacterial Content.**—The bacteria of cow's milk vary in kind and number, depending on the conditions under which the milk is collected, preserved and handled. While human milk may be either sterile or have a low bacterial content, cow's milk is never sterile, and only too frequently, through carelessness, the original flora multiply rapidly. Certified, pasteurized and sterilized milk was the practical outcome of the efforts made to obtain germ-free milk for infant feeding.

The harmful or undesirable micro-organisms occurring in milk are of two classes. (1) Those that are definitely pathogenic and capable of producing infectious disease. Examples are the typhoid and dysentery groups, the tubercle bacilli, the virus of scarlet fever and *Bacillus abortus*.<sup>18</sup> (2) Saprophytic bacteria, some of which decompose milk and form products capable of causing gastro-intestinal disturbances.

Of the nonpathogenic organisms, those most frequently found are the lactic acid-producing bacteria. The most common types are: *Streptococcus lacticus*, *Bacillus lactis-acidi*, *B. Lactis-aerogenes*, *B. bulgaricus*, *B. acidophilus* and *B. bifidus*. The micro-organisms producing only lactic acid are mostly harmless, and the lactic acid itself in the amounts produced in milk does not cause diarrhea when fed. In fact, the production of lactic acid leads to the destruction of many of the more harmful varieties of bacteria in milk.

The butyric acid group is also frequently present. This group produces butyric acid by its action on sugar and fat. Another group frequently found in milk are the proteolytic bacteria, which coagulate the milk and may cause a further splitting of the protein. *Bacillus coli*, which, as well as others, has the property of producing lactic acid; *B. proteus*, *B. alkaligenes*, the hay bacillus, *B. aerogenes-capsulatus* and others belong to this group. Most of the latter are sporebearing.

Slime-forming bacteria occasionally invade the milk. Among the most tenacious of these is *B. lactis-viscosi*. *Streptococcus lacticus* occasionally causes similar changes. At times the milk becomes bitter, because of the formation of peptones by contaminating organisms. Certain vegetables and plants may cause a similar taste in the milk. Occasionally a milk of reddish color is seen. This may be due to blood from the udder, or to the action of *B. prodigiosus*. A blue milk is even more common, and is due to *B. cyanogenes*. Protein and carbohydrate splitting yeasts and molds not infrequently invade the milk and cause changes that become more evident as the milk grows older.

(To be continued)

## New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

### DIPHThERIA IMMUNITY TEST (SCHICK TEST) (See New and Nonofficial Remedies, 1922, p. 320).

Parke, Davis & Co., Detroit.

**Diphtheria Toxin and Control for Schick Test.**—Marketed in packages containing one vial of 0.1 Cc. of undiluted, standardized diphtheria toxin, one vial of 5 Cc. of sterile physiologic solution of sodium chloride, one vial of 5 Cc. of diluted control for the Schick test, and one sterile syringe point in a sealed glass tube. The dose is 0.1 Cc. of the diluted toxin or 1/50 of the minimum lethal dose of diphtheria toxin for a guinea-pig of 250 Gm. weight: each package, therefore, contains material sufficient for 50 doses. The control for the Schick test represents diluted diphtheria toxin heated sufficiently to destroy the specific exotoxins.

**Course of Training Needed for Physiotherapists.**—My suggestion to this organization is to endeavor to establish a course of training and to get this recognized by the state and made acceptable to the medical profession. If you are going to organize this field, the standards must be high enough to keep out the ignorant and unscrupulous. Otherwise, hundreds of people with only a common school education, without any special training, will be brought in, and the name is apt to fall into disrepute and the profession became the refuge of broken-down boxing masters who empirically use its methods in a symptomatic way.—R. L. Wilbur, *California State J. Med.* **21**:25 (Jan.) 1923.

18. Fleischner, E. C., and Meyer, K. F.: *Bacillus Abortus*, *Bovinus* in Certified Milk, Am. J. Dis. Child. **14**: 157 (Sept.) 1917.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, FEBRUARY 17, 1923

## THE DISTRIBUTION OF METABOLITES IN THE BODY

In a recent essay on the nonprotein nitrogen of the blood in health and in disease, Folin<sup>1</sup> remarked that the reasoning power of the earlier clinical investigators of the blood was necessarily much superior to their analytic skill or their meager laboratory facilities. Furthermore, their analytic data could have been little more than mere ornaments attached to good, logical conclusions. Nevertheless, as Folin points out, the correctness of the concept that waste products must accumulate in the blood when the kidneys fail to perform their function in the formation of urine was established as early as 1821, when Prevost and Dumas showed that extirpation of the kidneys was followed by a gradual increase of the urea content of the blood—a finding repeatedly verified by investigators since that time.

Logic and correct guesses are now being supplanted by accurate analytic observations in the chemical study of the blood, a procedure that is already destined to become a part of the routine of the medical clinic. As an outcome of what has already been ascertained from numerous analyses, it is evident that certain constituents, such as sugar, urea, creatinin and uric acid, which can now be estimated on small samples of blood, are present in the circulation during health in relatively constant and fixed proportions, whereas they are subject to decided changes in concentration in certain diseased states in which they may actually become indicative of the pathologic situation. Whether or not these fluctuations are reflected in changed concentration of metabolites in the tissues also has been ascertained for a few of the substances. There is no doubt that the readily soluble and diffusible urea penetrates speedily to all parts of the body. Recently Rypins<sup>2</sup> of the Department of Medicine at the University of Minnesota has made new comparisons of the distribution of metabolites between the blood and other

body fluids. Although his studies with ingested urea indicate that during the period of its elimination there is no constant parallelism in the concentration of nitrogenous metabolites of the blood and tissues, both the estimation of the body fluid metabolites and the comparison of metabolites in the blood and tissues strongly suggest a tendency to equilibrium throughout the organism. This, Rypins adds, does not necessarily mean that a normal concentration of metabolites in the tissues approximates that in the blood; it means that the metabolites are distributed between them in a fairly constant proportion, and that an increase in one is paralleled by a proportionate increase in the other. No characteristic difference in the metabolite concentration of exudates and transudates was observed. In cases in which the blood metabolite level was increased, the metabolite concentration in the fluids varied *pari passu* with the changes in the blood. Pending the contribution of contradictory evidence, it may be tentatively concluded, therefore, that the facts secured by chemical analysis of the blood give an index of the concentration of metabolites throughout the body.

## SEASONAL VARIABILITY OF DISEASE

It is well known that the frequency, severity and mortality of many diseases vary with different seasons of the year. That acute respiratory infections reach a peak in the late winter months, with a minor peak in the late autumn, is attributed to a lowered local resistance to infection with the unknown virus of "common colds" and the known pathogenic cocci, although as yet we have no satisfactory explanation as to why the exposure to cold lowers the resistance. To be sure, a physical chemist, Schade, would attribute to a decreased dispersion of the tissue colloids on cooling the increased vulnerability to bacteria, but this is pure hypothesis and does not explain how the invading bacteria fail to suffer a correspondingly reduced activity when chilled. In the lower animals, seasonal changes in metabolism are well recognized, such as the hibernation of some species, and the seasonal variation in reproductive activity, as well as the variations in growth of hair, feathers and antlers. Beckmann,<sup>1</sup> in a consideration of the effect of season on disease, attributes the absence of such marked seasonal alterations in man to the fact that with higher development comes a better regulating mechanism against extraneous influences. But even in man there are distinct alterations in metabolic activity at different times of the year. Thus, measurements have shown that in spring the hair grows more rapidly than at other times, while body activity as a whole is lessened in winter, so that the usual amount of time spent in sleep is much increased over the summer sleep among people not too artificially regulated by customs and alarm clocks.

1. Folin, Otto: Non-Protein Nitrogen of Blood in Health and Disease, *Physiol. Rev.* 2: 460 (July) 1922.

2. Rypins, Harold: The Distribution of Metabolites in the Blood and Tissues, *Arch. Int. Med.* 30: 578 (Nov.) 1922.

1. Beckmann, Kurt: Jahresschwankungen in der menschlichen Physiologie und Pathologie, *Deutsch. med. Wchnschr.* 48: 1409 (Oct. 20) 1922.



Presumably this is related to hibernation in other species. It is said that pulse rate, temperature and respiration are highest in winter, and recently it has been found that the height of the capacity of the blood to bind carbon dioxide is reached with the shortest days of the year. In the spring there is a distinct fall in the carbon dioxide tension of the blood, which implies a decrease in the alkali reserve.

Although these variations are exceedingly small, they gain in the possibility of significance through the fact that they appear at the time of year when most diseases of seasonal variability are making themselves manifest, excluding diseases dependent on such obviously seasonal matters as insect transmission and food supply. Perhaps the reaction change has some influence on the endocrine glands, for there is not a little evidence that hibernation depends on these organs, and the same thing is true of some of the noninfectious diseases that show seasonal variations. For example, Moro found that the incidence of juvenile tetany increases in January and February, rising to a peak in March, and falling nearly to zero in the summer. The galvanic irritability follows a similar curve, and in guinea-pigs a seasonal variation has been found in respect to their sensitiveness to caffeine. These facts may be related to the statistical evidence that mental stability may show a seasonal change, for the suicide curve is said to rise in the spring, with a maximum in May or June, in various parts of Europe, despite marked variations in climate. Other mental disturbances follow a similar curve, but in some types with a second rise in the autumn. Hyperchlorhydria is said to show a distinct rise in the spring and autumn, and hyperthyroidism has been placed among the conditions that show such a double curve. The seasonal character of some diseases, such as rickets and certain cutaneous disorders, is explainable on a basis of altered sunlight; with others, the dietary variations are probably responsible. Less clear are those conditions that exhibit a frequency peak in both spring and autumn, among which, besides those mentioned above, Rusznyák<sup>2</sup> lists not only the acute respiratory and throat infections, but also tuberculosis, nephritis and rheumatism, as well as the neuroses, which often have a higher peak in autumn than in spring. This author suggests that the change from winter to summer, or from summer to winter, arouses an adaptive mechanism, the activity of which produces a condition of instability during these transition periods, and hence pathologic conditions become more conspicuous until seasonal adjustment is completed. As yet there can be said to be no approach to a solution of these problems, which so far have not received much consideration as the important factor in human disease which they apparently are. Evidently, in large part, they depend on external influences; but their periodicity does not always correspond to these, and therefore it is probable that some internal influence

also is involved, as in the hibernating animals, which do not awake completely if brought into a summer temperature, but continue for some time to manifest the lowered metabolic activity that characterizes their sleeping period.

#### PROPOSED LEGISLATION REDUCING FEDERAL NARCOTIC TAX

Through the efforts of the Bureau of Legal Medicine and Legislation of the American Medical Association, and with the cooperation of Dr. John J. Kindred, a fellow of the Association and the representative in Congress from the Second New York Congressional District, a bill has been introduced for the reduction of the tax imposed on physicians and certain related professional groups by the Revenue Act of 1918, to the merely nominal amount, one dollar a year, originally provided in the Harrison Narcotic Law.

The Harrison Narcotic Law was enacted in the discharge of international obligations the United States government had assumed, looking toward the control of the traffic in habit-forming drugs. It took the form of a tax measure, not because of any intention on the part of the government to make the traffic in such drugs a source of revenue, but because in no other way could the federal government obtain the control it had obligated itself to assume. In the execution of the project, it became necessary to obtain jurisdiction over the physician, as one of the agencies through which habit-forming drugs are distributed, and for that purpose alone a nominal tax was imposed. To this, no objection was raised; it was looked on by the profession as a step necessary in the fulfilment of an international obligation, and was accepted accordingly.

When the Revenue Act of 1918 was framed, the United States had incurred a large indebtedness on account of the World War. New sources of revenue were being sought, and taxes already established were being increased; and in the course of its search for increased income, Congress amended the Harrison Narcotic Law, and trebled the tax. Then the tax ceased to be a mere incident to the discharge of certain police duties voluntarily assumed by the federal government, and became nothing more or less than an occupation tax. There was no more reason for imposing an occupation tax on the physician than for imposing such a tax on the lawyer, the architect, and on other professional and vocational groups, except that opportunity was given through the tax already imposed. But it was a war-time measure, and the medical profession, which as a body had probably already contributed proportionately more of its resources to the country's defense than had any other group, hesitated to enter complaint.

The war has been over now for more than four years, and during that time the Revenue Act of 1918 has been revised. Still the three dollar tax is being collected, and it will be collected until Congress other-

2. Rusznyák, Stefan: *Krankheiten und Jahreszeiten*, Wien. Arch. f. inn. Med. 3: 379, 1922.



wise directs. On the face of the law, the tax is small; in the aggregate, it is not. The records of the Treasury Department do not permit a statement of the amount paid by physicians alone, but from the medical group—comprising physicians, dentists and others engaged in the practice of the healing arts—and from hospitals, in the fiscal year 1922 there was collected \$573,413.84.

The imposition of this tax on the practice of medicine cannot be justified on the ground that the revenue is necessary to pay the cost of enforcing the law. The law is for the general good, and there is no reason why the physician should defray any greater share of the cost of enforcement than is paid by others. Moreover, the taxes collected under the law are largely in excess of the amount expended for its enforcement; for the amount collected during the fiscal year 1922, from all sources, was, according to the annual report of the Commissioner of Internal Revenue, \$1,269,039.90; and the cost of enforcing the act was but \$658,728.77. Even if a liberal allowance is made for overhead and incidental expenses of enforcement, not included in the cost as officially stated, it seems safe to say that the United States, during the fiscal year 1922, under the Harrison Narcotic Law alone and to the exclusion of all receipts from customs revenues on narcotic drugs, realized a half million dollars net profit.

On no sound, discoverable basis can the present tax of three dollars a year on physicians, under the amended Harrison Narcotic Law, be justified. To the extent that the tax is in excess of the minimum necessary to give the federal government jurisdiction over the physician as an agency engaged in the distribution of habit-forming drugs, it is an occupation tax, unjustly discriminating against the medical profession and the allied groups subjected to its exactions. It is for the physicians of the country to see that the tax is discontinued, or at least reduced to the amount named in the original law, one dollar a year: if not by this Congress, then by the next.

#### DAVID HARUM: MONUMENT TO A PHYSICIAN

One of the literary events of the year, the celebration of the twenty-fifth anniversary of the publication of "David Harum," one of the most popular novels of the last century, has a particular interest for physicians. Its author was the son of a physician; indeed, the quaint character David Harum was a reflection of Dr. Amos Westcott, the author's father. Dr. Westcott was well known as a physician as well as one of the most conspicuous citizens of Syracuse, N. Y., during the mid-nineteenth century. Incidentally, he was the honored and respected mayor of that city during part of the Civil War. Moreover, Edward Noyes Westcott wrote the book while dying of tuberculosis, and would probably never have had the chance to demonstrate the fact that he had the literary power that he possessed except for the enforced leisure that his disease com-

pelled him to take. He had previously been a teller in a bank. When he had to give up work and live outside, he had much time for thought, and the book "David Harum" shaped itself in his mind. In spite of the suffering from laryngeal tuberculosis, which complicated his lung condition and which must have added greatly to the difficulty of writing, he succeeded in getting the manuscript written.

The fact that the book was different, which eventually gave it widespread popularity and immense sale, proved a handicap as regards its acceptance. The manuscript was sent to publisher after publisher, who refused it, usually with a formal note of declination. It is easy to understand how discouraging this must have been for a man who knew that he was seriously ill, and who, in spite of the hopeful attitude, *spes phthisica*, characteristic of his affection, must have had more than an inkling of the fact that his end was probably not far off. Undaunted, he kept on readdressing the manuscript, giving it certain touches at each new rejection, and finally, in January, 1898, it was accepted by Appleton. The cordial words of praise which accompanied the acceptance of the manuscript proved a wonderful tonic. As the author himself said, "They were more welcome than any gift I could have received." It is not surprising that just after this his health seemed to improve, though he was in the last stages of the disease, and the laryngeal complication was making life miserable.

He died without having seen a copy of his book in print. His friend and biographer, Forbes Heermanns, commenting on the possibility that Westcott did not in any way even suspect the wonderful popularity that "David Harum" was to have, cannot help but find a hint of his hopes with regard to it from certain passages in the book itself. He knew enough about life, however, to appreciate thoroughly that romantic anticipations are seldom realized, and that life has at least as many disappointments as fortunate events. Not a few of these are due to the fact that the good things of life do not come in on time. As his biographer said, "Yet when we read in Chapter XLVII his own words 'Many of the disappointments of life, if not the greater part, come because events are unpunctual, they have a way of arriving sometimes too early, or worse, too late'; their pathetic significance is now profoundly impressive."

Even had his book never been published, it is probable that it would have been well worth while for Edward Westcott to write it. No one, probably, would have appreciated this fact better than did the author of "David Harum," for it was his memories of his father, the old-fashioned physician whose patients were his friends and neighbors and whose knowledge of human nature was almost more valuable to him in his practice than his knowledge of medical science, that he recalled for the book. Contact with that father physician must have made the author of "David Harum" realize clearly the value of not allowing the "blue devils" of discouragement to add to his discomfort, decrease his resistive



vitality, and make life much more miserable than even his disease was making it. The author wrote to his publishers, "I have lived with and among the people I have written about. My father was 'born and raised' on Buxton Hill; and a great many of David's peculiar figures and sayings were constantly popping out in my father's diction."

It is this that would make "David Harum" worth the reading by the modern physician now after twenty-five years. Many of the expressions used by the hero smack of the old-fashioned country practitioner whose wisdom so often enabled him to do so much more in his duties as a physician to his patients, than the knowledge of the modern, ever so much better educated scientific physician of our day helps him to accomplish. "Knowledge comes, but wisdom lingers." His wisdom enabled old Dr. Westcott to perform very satisfactorily the three duties dependent on a physician, to cure whenever he could, though that might be rarely enough, to relieve nearly always, even with the meager means at his command, but to console always and give his patients new spirit and vital resistance. As a result of this there are some interesting anticipations of ideas in medicine that are supposed to be the latest things in practice.

Typical examples are not hard to find. David Harum's expression, "You want to change your feed once in a while or you may git the colic," is one instance. It pleads for variety in diet quite as strongly as the modern expert in physiologic chemistry would insist on it. One can just imagine the old country doctor who might not have known very well what was meant by psychotherapy and might have shied at mental suggestion or the necessity for diversion of attention, but who felt in his bones as the result of experience that "A reasonable amount of fleas is good fer a dog—keeps 'em from broodin' over bein' a dog, mebbe." Only the doctor habit of mind would have supplied such a figure as that contained in his reference to his step-mother: "'T wa'n't so much slappin' an' cuffin' with her as 't was tongue. She c'd say things that'd just raise a blister like pizen ivy." Surely the physician who had had large experience among the poor would be the one above all to formulate that ancient biblical expression in such modern familiar language as brings it home to every one, "Them that has, gits."

The last, but not the least interesting, feature for physicians is that of course his old-fashioned physician father left him no money to speak of, and whatever little savings had been made from the moderate salary of a bank teller in those days were exhausted by the lingering illness and the necessity for special care with its attendant expense. He left his family little at his death, but the sale of his book proved a continued source of income that put them in independent circumstances.<sup>1</sup>

1. The book still sells rather well, and the publishers are bringing out an illustrated edition this year for the twenty-fifth anniversary, which will doubtless add distinctly to the sales record, though some 1,500,000 copies have been sold.

## Current Comment

### THE VISIT OF M. COUÉ

Emile Coué, druggist of Nancy, France, has come and gone, heralded and accompanied by a campaign of advertising which has rarely been equaled, making promises of hope to the helpless and afflicted. His visit to Chicago gave the opportunity to hear M. Coué and to observe his methods. The man himself gave an impression of sincere, though naive, earnestness. He seemed childishly pleased with the testimonials he had received, and genuinely convinced that he had made a discovery of great benefit to mankind. Of the many cults that have grown up around such methods of healing, this appears to be the first that has not been erected on a religious basis with more or less specific claims of Divine inspiration, a lack of the mystical which will probably result in speedy oblivion. Coué was careful to insist that he is not "a healer" or "miracle worker," and protested against the demands that he exhibit his powers: demands that were an inevitable result of the publicity he has received. M. Coué claimed that much of human suffering and disability is psychic in origin, the outcome of faulty thinking. All that is necessary for its relief is a change in the mode of thought. This can be achieved by the persistent and insistent repetition of a formula, which disavows the trouble. He acknowledged that some things cannot be changed, as for example the loss of a leg, and that it is useless to attempt "the impossible." However, despite the protestations that he will not attempt "the impossible," Coué frequently finds it "impossible" only when he fails. One of the patients subjected to "treatment" at the Chicago meetings was an elderly woman, emaciated, feeble, short of breath, and with every appearance of cardiovascular disease. This poor woman was urged, stimulated and encouraged to walk vigorously, even to run. Under the stimulus of the excitement, she succeeded temporarily by the exercise of every reserve of energy, and after having served the purpose of this ruthless demonstration, retired from view, to sink panting and exhausted in a chair. No more serious result was evident, but risks had certainly been taken without thought to the possible dangers, which were obvious to any physician. The atmosphere of the Coué demonstration contained much to recall the vaudeville hypnotist, now almost extinct; the magic words, the mesmeric passes and even the old parlor trick of suggesting to members of the audience that they could not separate their hands, after they had pressed them tightly together, all bring back memories of the professional hypnotist. Had it not been for the pathetic background of the crippled, deformed and disappointment-doomed dupes that filled the stage, the scene would have been humorous. The methods and theory with which Coué works are as old as history. Nancy, the town from which he came, was the home of a school of scientific hypnotism, under the leadership of Liébeault and Bernheim, which was famous in the sixth and subsequent decades of the last century. It is an error to assume that physicians have ignored such merits as do underlie these practices. The abrupt relief of hysterical symptoms by suggestion



and persuasion is a commonplace in the practice of the average physician. Suggestion has a distinct place in therapeutics; unconsciously, it is used by every successful physician in the form of encouragement and optimistic prediction. It is the basis of Eddyism. But suggestion, while it may, and often does, give temporary relief, does not cure; it must be accompanied by investigation and remedy of the underlying causes, whether psychic or physical.

### THE WEIGHT OF CHILDREN

At present, it would assuredly be a rash venture to attempt to set up what might be called ideal standards of nutrition in children of school age. The child welfare programs involve the acceptance of some index of physiologic well-being, but the experts are not yet in accord as to how the latter shall be formulated. Without debating the wisdom or accuracy of the procedure, it must be admitted that the factor most generally used today is the weight of a given child compared with the average weight of children of the same sex, age and height, allowing 7 to 10 per cent. deviation from this standard as normal variation. Children below this standard are classed as underweight and presumably as not physically fit. Weight is so easily measured, and its fluctuations can so readily be grasped, that it has naturally been used as a guide to hygienic procedures and corrective measures.<sup>1</sup> The field investigations in child hygiene conducted by the U. S. Public Health Service<sup>2</sup> on nearly 10,000 schoolchildren from 6 to 16 years of age, inclusive, in South Carolina, Virginia, Maryland, Delaware and New York State indicate some of the limitations which the estimate of physical fitness involves. They show that although, on the average, the children of poorer nutrition weigh less than those of better nutrition, weight alone does not seem to be sufficient for determining the nutrition of a given child. In order to pick out individual cases of poor nutrition, a physical examination by a trained physician should supplement physical measurements. The observations of the government experts indicate that the percentage of children who were "fair" or "poor" in nutrition, as judged from clinical evidence, varied with age, increasing in the 6 to 8 age groups and then declining in succeeding age groups. No significant difference in this respect appeared between boys and girls. The percentage of children who were underweight (10 per cent. below) and the percentage who were overweight (20 per cent. above), as judged by Wood's table of weight for sex, age and height, increased as age increased through the fourteenth year for girls and through the sixteenth year for boys. Girls showed a constantly higher percentage of underweight and a consistently higher percentage of overweight than boys. If average weight is to be used as even a rough index of nutrition, it seems that the percentage deviation allowed for normal variation from the average should vary for different sexes and ages rather than be a constant 7 or 10 per cent., as usually employed in school health work.

1. See, for example, the program of the Bureau of Educational Experiments in Hunt, J. L.; Johnson, B. J., and Lincoln, E. M.: *Health Education and the Nutrition Class*, New York, E. P. Dutton & Co., 1921.  
2. Clark, Taliaferro; Sydenstricker, Edgar, and Collins, S. D.: *Weight and Height as an Index of Nutrition*, Pub. Health Rep. 38: 39 (Jan. 12) 1923.

## Association News

### BOARD OF TRUSTEES

Minutes of a Special Meeting Held at the Association Headquarters, Thursday, February 1, and of the Regular Annual Meeting Held Friday, Feb. 2, 1923

The meeting was called to order at 10:30 a. m. There were present: Drs. Dowling (Chairman), Billings, McDavitt, Mitchell, Phillips, Brown, Williamson, Richardson and Sarles of the Board; the President, Dr. George E. de Schweinitz; the President-Elect, Dr. Ray Lyman Wilbur; the Speaker, Dr. Frederick Warnshuis; the Treasurer, Dr. Austin Hayden; the Secretary, Dr. Olin West; and the Editor and General Manager, Dr. George H. Simmons.

The Chairman announced that a special meeting was called the day preceding the annual session of the Board to afford sufficient time for the consideration of the annual report of the General Manager for the year 1922 and of other business, and to make a general inspection of the work and requirements of the headquarters and the new additions to the building.

The General Manager presented his annual report, which was accepted by the Board with the understanding that those parts including recommendations which require the action of the Board shall be referred to the appropriate committees for consideration and report to the Board on February 2, the date of the annual meeting.

The Chairman appointed Drs. Phillips, Williamson and Richardson a Committee on Elections to fill vacancies on the Council on Pharmacy and Chemistry and on the editorial boards of the special journals.

The General Manager, in his annual report, recommended that at the end of the current year the annual dues and subscription be restored to the former price—\$5. The Board decided to incorporate this recommendation in its annual report to the House of Delegates.

### MEMORIAL TABLETS

Dr. George E. de Schweinitz, chairman of the Special Committee on Memorial Tablets, presented a report which was signed by all members of the Committee. Inasmuch as the Committee expressed the opinion that a memorial tablet naturally would be placed in the assembly room of the new addition to the building, the Committee requested its report to be considered one of progress. The report of the Committee was ordered received, with the understanding that the Board will include in its annual report to the House of Delegates a statement to the effect that arrangements have been made to fulfil the request made by the House to establish at headquarters a suitable memorial tablet to the late Dr. Joseph N. McCormack; but that it will be necessary to postpone its placement until the new addition to the headquarters shall have been completed.

### GROUP INSURANCE

The question of applying industrial group insurance to the employees of the Association at headquarters, the expense to be borne by the Association, was discussed. The general plan was referred to the Finance Committee for further investigation and study. The fact was brought out that the Association has 320 employees at headquarters, forty-six of whom have been with the Association for from ten to twenty-five years.

### REPORT OF THE COMMITTEE ON ELECTIONS

The committee recommended the following named individuals to succeed themselves on the Editorial Boards of the special journals, in which the Board concurred:

- Dr. W. S. Thayer, *Archives of Internal Medicine*.
- Dr. H. F. Helmholz, *American Journal of Diseases of Children*.
- Dr. T. H. Weisenburg, *Archives of Neurology and Psychiatry*.
- Dr. W. T. Corlett, *Archives of Dermatology and Syphilology*.
- Dr. Hugh Cabot, *Archives of Surgery*.



Drs. R. A. Hatcher of New York and W. T. Longcope of Baltimore were elected to succeed themselves, as members of the Council on Pharmacy and Chemistry, and Dr. A. N. Richards of Philadelphia was elected to succeed Dr. Hewlett of San Francisco, who expressed the desire that he be not reelected.

#### BUREAU OF LEGAL MEDICINE AND LEGISLATION

Dr. Woodward, the Executive Secretary of the Bureau, made a report covering the work done since the organization of the Bureau. The report covered the following subjects: the availability of bottled-in-bond whisky for therapeutic purposes; protest against regulations governing therapeutic use of whisky; probationary period for physicians in new locality before permission is given to prescribe whisky therapeutically; reduction of tax under the Harrison law; amendments to narcotic regulations; safeguarding professional secrecy; liability of state medical associations for federal income tax upon accumulated funds; deductibility by physicians of expenses incident to attending medical meetings; the status of legislation on animal experimentation; present status of chiropractic training of disabled veterans under the federal Veterans' Bureau; reclassification bill for physicians in the Indian service; reorganization of federal health activities; medical defense; cooperation of the Bureau with constituent associations; meetings of state legislatures, etc.

The report of Dr. Woodward was fully discussed and ordered placed on file. Dr. Woodward was unanimously commended on the good work accomplished.

#### AMERICAN RED CROSS

The Secretary of the Board announced the present membership of the Medical Advisory Committee of the American Red Cross as appointed by the Chairman of the Central Committee of that organization: Drs. William H. Welch (Chairman), Baltimore; Herman M. Biggs, Albany; Thomas S. Cullen, Baltimore; Hugh S. Cumming, Washington; Livingston Farrand, Utica; Franklin H. Martin, Chicago; Fred B. Lund, Boston; George M. Piersol, Philadelphia; John H. J. Upham, Columbus, Ohio, and C. E. A. Winslow, New Haven. The Board was informed that the Advisory Committee was at present engaged in the formulation of a proposed public health program for the American Red Cross.

#### HYGEIA

Dr. Victor C. Vaughan, Editor of *Hygeia*, made a report of progress, which was unanimously approved by the Board.

#### SCIENTIFIC EXHIBIT

Dr. D. Chester Brown, chairman of the Committee of the Board on Scientific Exhibit, and Dr. Leech, who has charge of the Bureau on Scientific Exhibit at headquarters, presented a report on the arrangements made for the Scientific Exhibit, including the lantern slide moving picture theater for the San Francisco session. There was every indication of close cooperation of the sections on scientific work with the Scientific Exhibit. This report was received and approved.

#### DIAGNOSTIC CLINICS AT THE SAN FRANCISCO SESSION

The Secretary of the Board reported that arrangements had been completed with the Local Committee of Arrangements for the San Francisco session for diagnostic clinics to be given on Monday and Tuesday, June 25 and 26. The tentative plans called for seventy-two clinics in twelve hospitals of San Francisco and Oakland during the two days. California clinicians will give one half of the clinics, and visiting clinicians from various states, and possibly from abroad, will give one half.

#### HEALTH EXHIBIT

Dr. D. Chester Brown made a further report upon the proposition to hold a health exhibit at San Francisco during the annual session. This subject had been discussed at the meeting of the Board held in November last, and at this time more definite information upon the subject influenced the Board to decide not to attempt a health exhibit at San Francisco, and that the subject of health exhibits at future sessions of the Association be referred to the Council on Health

and Public Instruction with the Board's approval for instituting health exhibits as a part of its work.

The Board adjourned at 6:15 p. m. to meet at 9 a. m. Friday, February 2.

#### The Annual Meeting of the Board of Trustees

The annual meeting of the Board of Trustees was called to order at 9 a. m., February 2, by the chairman, Dr. Dowling. There were present all members of the Board, the President, the President-Elect, the Speaker of the House, Treasurer, the Editor and General Manager, and the Secretary of the Association.

The minutes of the special meeting held on Thursday, February 1, were read, and by resolution all of the business performed and decisions made by the Board at the special meeting on February 1 were made official as of this date.

#### ABSTRACTING REPORTS CONTAINED IN THE HANDBOOK FOR PRESENTATION TO THE HOUSE OF DELEGATES

The Secretary of the Board called attention to the feasibility, practicability and economy of time which would be gained by abstracting or condensing the official reports of the Councils and other committees and of the Board of Trustees which are printed in full in the Handbook, so that the salient features and recommendations contained in the several reports may be presented more effectively to the House of Delegates. In this connection, attention was called to the fact that last year the printed Handbook was completed and forwarded to all officers, all known members of the House of Delegates, section officers and others from two to three weeks before the date of the meeting of the annual session in St. Louis. This year the Handbook will be placed in the hands of these officers from two to three weeks before the annual session at San Francisco. This will enable every holdover member of the House of Delegates and every newly elected delegate whose address is forwarded to Association headquarters in time to permit a copy to be mailed to him, to acquaint himself with the business of the Association as represented in the reports contained in the Handbook.

The Board unanimously approved of the adoption of abstracting reports contained in the Handbook for presentation to the House of Delegates.

The Speaker announced that he had addressed a letter to each member of the House of Delegates asking for constructive criticism, suggestions or recommendations regarding the methods of carrying on the business of the House and other details. In connection with this statement he suggested that the Board empower the Executive Committee to cooperate with the Secretary and other officers of the Association to collect and bring outstanding valuable suggestions received from these sources into practical application at the San Francisco meeting. The Board unanimously concurred in the request of the Speaker.

The usual appropriations were made.

The Board adjourned, to meet at the Palace Hotel in San Francisco on Saturday afternoon, June 23.

FRANK BILLINGS, Secretary.

#### THE SAN FRANCISCO SESSION

##### Convention Diagnostic Clinics and Postconvention Diagnostic Clinics

A resolution governing the selection and conduct of diagnostic clinics was unanimously passed at the regular meeting of the Central Committee of Arrangements, Jan. 22, 1923. The resolution was as follows:

Having heard read the correspondence between Dr. Frank Billings, secretary of the Trustees, American Medical Association, and Dr. W. E. Musgrave, chairman of the California Committee of the American Medical Association Convention, regarding diagnostic clinics, to be held in San Francisco and Oakland, June 24 and 25, to be known as Convention Diagnostic Clinics, and in Los Angeles and other sections of California, July 2 and 3, to be known as postconvention clinics, the Central Committee unanimously approves the plan of conducting said clinics, and the following policy



outlined for these clinics, submitted by the general chairman, Dr. W. E. Musgrave:

1. The chairman of the committee, after consultation with the accredited hospitals or with county medical societies, will appoint a sub-subcommittee on Diagnostic Clinics for each hospital, accredited by the Council on Medical Education and Hospitals of the American Medical Association, of San Francisco, Oakland, Los Angeles and other cities of California which comply with the conditions governing these diagnostic clinics.

2. Each of these sub-subcommittees shall consist of three members of the staff, one representative of the directorate and one of the administration of the hospital. A staff member shall be chairman.

3. The chairman of all these sub-subcommittees shall form ex-officio the Subcommittee on Diagnostic Clinics. The chairman of the Central Committee shall appoint a chairman of the subcommittee, who shall thereby become ex-officio a member of the Central Committee.

4. The Subcommittee on Diagnostic Clinics, working through the Executive Committee, shall cooperate with the Trustees of the American Medical Association in conducting diagnostic clinics in connection with the American Medical Association Convention under the following procedure:

(a) The hours from 10 a. m. to 1 p. m. of Monday and Tuesday, June 24 and 25, shall be designated Convention Diagnostic Clinic Periods in each of the cooperating hospitals in San Francisco and Oakland.

(b) The same hours on the following Monday and Tuesday, July 2 and 3, shall be Postconvention Diagnostic Clinic Periods for the cooperating hospitals in Los Angeles and other sections of California.

(c) The Diagnostic Clinic Period in each hospital shall be divided into three clinics of one hour each:

(d) One clinic will be conducted by a member of the California Medical Association, one by an invited Fellow of the American Medical Association, and one will be a combined clinic given by a California physician and a visiting Fellow.

(e) The California physicians giving clinics shall be selected by the sub-subcommittee from each hospital and appointed by the chairman of the Central Committee.

(f) All visiting Fellows giving clinics shall be approved by the Trustees of the American Medical Association. The sub-subcommittees of the cooperating hospitals may correspond with the secretary of the Trustees of the American Medical Association in securing visiting Fellows whom they desire to have conduct clinics for their hospitals.

(g) The program of the various clinics shall be prepared with proper regard for available facilities, the wishes of the local committee of each hospital and the desires of the Trustees of the American Medical Association.

(h) The preparation of the program, arrangements with physicians to conduct it, securing an audience and all local arrangements, conveniences and facilities to insure the success of each clinic, are responsibilities of each hospital committee. The facilities of headquarters are open to all committees.

(i) County societies and other approved medical organizations in any part of California, and Fellows of the American Medical Association who desire to participate in the Convention Diagnostic Clinics of June 24 and 25 or the Postconvention Diagnostic Clinics of July 2 and 3, are invited and urged to communicate with California Convention Headquarters of the American Medical Association, 805-809 Balboa Building, San Francisco.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ARIZONA

**Ground for Hospital Broken.**—Ground was broken recently for the new city isolation hospital to be erected in Tucson at a cost of approximately \$18,000. The new building will accommodate from sixty to seventy patients.

### CALIFORNIA

**Summer Work at Stanford University.**—From July 1 to October 1, properly qualified graduates in medicine and surgery, either graduates of Stanford University or of other schools, are invited to participate in medical and surgical work, including specialties, in the capacity of special workers at Stanford University Medical School, San Francisco. The workers will be expected to assist in the diagnosis and treatment of disease in the outpatient departments, laboratories and wards. Opportunity to make special studies of clinical and laboratory problems will be offered in certain subjects. The minimum period of attendance will be four weeks and a registration fee of three dollars will be charged. Applications, which should give an outline of the medical experience of the applicant, should be sent to the Dean, 2398 Sacramento Street, San Francisco, before June 1.

### CONNECTICUT

**Personal.**—Prof. George C. Whipple, Harvard University, New Haven, gave four lectures on "The Philosophy of Sanitation," January 6, 13, 20 and 27, at the Wagner Free Institute of Science.—Prof. Marston T. Bogert, professor of chemistry at Columbia University, New York, gave a lecture at the Connecticut College for Women, New London, January 23, on "Synthetic Dyestuffs and Their Bearing on the Life of the Individual and of the State."

**Yale University News.**—A course of eight lectures on the social aspects of mental hygiene will be given by a group of specialists under the auspices of the department of social and political science of Yale University, and the New Haven Council of Social Agencies. President Angell will act as chairman at the first lecture, which will be given by Clifford W. Beers. Dr. O. G. Wiedman, medical director of the Connecticut Society for Mental Hygiene, and Dr. Paul Waterman, chairman of the state psychopathic hospital commission, will preside at the other lectures. The following subjects will be discussed: "The Mental Hygiene Movement," Mr. Beers; "The Mechanism of Human Behavior," Dr. Frankwood E. Williams, editor of the *Mental Hygiene Quarterly*; "Mental Hygiene and Personal Health," Dr. Thomas W. Salmon of the Rockefeller Foundation; "Mental Hygiene and Education," Dr. C. Macfie Campbell, director of the Boston Psychopathic Hospital; "Mental Hygiene and the Family Life," Dr. Abraham Myerson, Tufts Medical College; "Mental Service for Children," Dr. Arnold Gesell, professor of child hygiene, Yale University; "The Feeble-minded in the Community," Dr. Walter E. Fernald, superintendent of the Massachusetts School for the Feeble-minded, and "Mental Hygiene in Social Work," Dr. Jessie Taft, director of the department of child study, Children's Aid Society of Philadelphia.—The Yale Engineering Association at a recent meeting announced that it will raise funds for the erection of buildings at the summer camp of the Sheffield Scientific School of Yale University at East Lyme.—It was announced, January 16, by Dean Winternitz of the Yale Medical School, that additional building plans recently adopted call for a new pediatric pavilion, a modern dispensary situated in the center of the hospital plant, rehabilitation of the Gifford ward and extension of the south ward for women at the New Haven General Hospital, which is now part of the medical school plant.—In connection with the curriculum the method of assigning students of the third year to the outpatient clinic and the seniors to the wards has been reversed. The development of psychiatry into a section of work, coordinate with the sections of medicine, surgery, diseases of women and pediatrics, is in progress.

**Gumma of Heart.**—Gummata of the heart are probably much more frequent than even many pathologists think, probably for the reason that they are usually of relatively small size. Diffuse areas of extensive fibrosis may have been originated as a gumma which had absorbed to some degree under healthy condition or as a result of a certain degree of treatment for the specific infection and that the resulting fibrosis really in some instances represents a resorbing or healing gumma.—Harlow Brooks, *Am. J. Syphilis* 5:224, 1921.



## DISTRICT OF COLUMBIA

**Vaccination to Be Enforced.**—It is announced by Dr. William C. Fowler, District health officer, that all children entering schools for the second term must be vaccinated. Vaccination for smallpox is compulsory, but typhoid and paratyphoid inoculations will be made on request of the parents.

**Howard University News.**—The *Howardite*, a publication issued for graduates of Howard University School of Medicine, Washington, announces that the sum of \$25,000 has been pledged by the students and a like sum by the administration, trustees and faculty of the university in the campaign to raise \$250,000 by July 1, in order to receive the same amount from the General Education Board for the school of medicine.

## ILLINOIS

**Revised Influenza Rules.**—A revised edition of rules and regulations relative to the reporting and handling of influenza cases has been published by, and are available for distribution from, the state department of public health, Springfield.

**Hospital News.**—The American Hospital at Johnston City was formally opened to the public recently. Dr. Fred Greenbaum, West Frankfort, has been appointed superintendent. —A hospital, to be known as the Roseland Community Hospital, will be erected in that city at a cost of about \$500,000.

**Demonstration in Medical Inspection of Schools.**—Dr. Edith B. Lowry of the U. S. Public Health Service has been assigned to direct a demonstration in the medical inspection of schoolchildren at Elgin. The demonstration was undertaken at the request of the local superintendent of public schools. The local board of health and the state department of public health are cooperating in the project.

**Mental Hygiene Conference.**—The Illinois Society for Mental Hygiene held a conference in Chicago, February 14-16, in conjunction with the Chicago Medical Society and the Chicago Neurological Society. Among the speakers were Judge Victor F. Arnold of the juvenile court of Chicago; Drs. Hugh N. MacKechnie, president of the Chicago Medical Society; Arnold L. Jacoby, director of the Municipal Psychopathic Clinic, records court, Detroit; Archibald Church, professor of neurology, Northwestern University Medical School; Bird Baldwin, Ph.D., director of the Child Research Station at the University of Iowa, and Frank Billings, president of the Illinois Society for Mental Hygiene.

## Chicago

**House of Correction Issues Report.**—A report has just been issued covering the first fifty years of service of the House of Correction. A special section is devoted to the medical department. In this section of the report, methods of handling alcoholics, drug addicts and defectives are given special attention.

**New Orthopedic Society.**—At a meeting of orthopedic surgeons at the University Club, Chicago, February 2, the Chicago Orthopedic Club was organized. Dr. John Ridlon was elected president; Dr. Edwin W. Ryerson, vice president, and Dr. Henry B. Thomas, secretary-treasurer. Meetings are to be held monthly.

**Hospital News.**—Nearly 90,000 people passed through the receiving wards of Cook County Hospital during 1922. About 37,000 were admitted as patients, 21,000 were treated at the dispensary and about 28,000 were rejected according to the annual report. Clinics for patients with heart disease were established during the year. The charity ward gave out 200,000 garments to needy persons, a service which cost the county nothing. —A new 150-bed hospital will be erected by Dr. B. L. Ramsay of the Austin Hospital Association, at Central Avenue and Flournoy Street, Austin. —Plans have been drawn for a \$350,000 addition to the Washington Boulevard Hospital. —Excavation work has been started for the \$50,000 addition to Jefferson Park Hospital, Chicago.

**Personal.**—Dr. Wilson B. Moody, Chicago, has been appointed resident pathologist at the Methodist Hospital, Omaha. —Dr. B. Barker Beeson, Chicago, has been appointed associate professor and acting director of the division of dermatology and syphilology at Loyola University School of Medicine, Chicago; also dermatologist to the Mercy Hospital. —Dr. Peter S. Winner, assistant superintendent of the Peoria State Hospital, has been appointed superintendent of the Municipal Tuberculosis Sanatorium, Chicago, to succeed Dr. Allen J. Hruby. —Dr. Peter Bassoe,

professor of neurology at Rush Medical College, gave a lecture on "Modern Treatment of Epilepsy" before the Elkhart County Medical Society at Goshen, February 1. —Dr. A. J. Carlson addressed the members of the Peoria City Medical Society, February 6.

## INDIANA

**Large Fine for Physician.**—It is reported from Fort Wayne that Dr. James W. Squires of that city, 68 years old, was fined \$1,000 and costs, February 1, when he pleaded guilty to violations of the Harrison Narcotic Law.

**All-Time Health Officer Bill Fails.**—The all-time health officer bill introduced by Dr. John N. Hurty of Indianapolis, which provided for reorganization of the state board of health and the employment of a health officer in each county to devote full time to the work, was defeated in the legislature, February 3, it is reported.

**Hospital Cornerstone Laid.**—The cornerstone of the new administration building and nurses' home, which are under construction at the Indianapolis City Hospital, at a cost of \$425,000, was laid on the afternoon of December 23. Following the exercises, a clinic was held by Dr. Vilray P. Blair of Barnes Hospital, St. Louis.

## IOWA

**Personal.**—Dr. Eula Eno, Des Moines, sailed recently for China, where she will serve as a medical missionary. —Dr. Asaph Arent, Humboldt, has been appointed county coroner to succeed Dr. H. C. Doan, deceased. —Dr. Carl H. Carryer, Des Moines, has been reappointed physician of Polk County. —Dr. R. C. Milson, Marshalltown, has been appointed city physician to succeed the late Dr. J. F. Battin. —Dr. Don Griswold, professor of hygiene, State University of Iowa College of Medicine, gave an address on "Communicable Diseases Among School Children" at the Teachers' Institute, at Clinton, recently.

## KANSAS

**Personal.**—Drs. Melvin C. Martin and Frank L. Abbey were elected president and secretary, respectively, of the Harvey County Medical Society, at the December meeting. —Dr. Harry R. Bryan, La Crosse, has been appointed health officer of Rush County. —Dr. F. Akin Garvin, Augusta, was recently reappointed health officer of Butler County. —Drs. Thomas L. McCarty, Dodge City, and Walter F. Pine, Dodge City, were elected president and secretary, respectively, of the Ford County Medical Society at the annual meeting.

**Tuberculosis Colony.**—January 22, Dr. S. J. Crumbine, secretary of the state board of health, inspected the site of the new tuberculosis colony to be established in Kansas City, under the auspices of the city health department. It is planned to erect ten buildings for tuberculous patients on a 21-acre tract just outside the city limits. Construction work will be commenced as soon as the old buildings on the site have been torn down. Lodges and clubs of the city will furnish the one-room cottages, and fresh milk and eggs for the tuberculous patients will be supplied by the city.

## KENTUCKY

**Hospital News.**—The County tuberculosis hospital at Henderson was reopened, January 17. The hospital, which was formerly for tuberculous patients only, has been thoroughly remodeled and furnished with new equipment.

## MAINE

**New Hospital Opened.**—The Bradbury Memorial Hospital, Belfast, was formally opened to the public, December 25. It is a \$50,000 structure, the main building of which is the old Charles Bradbury homestead. A 90-foot addition, three stories high, enlarged the residence. Several memorial rooms and the roentgen-ray equipment were donated by summer residents. A nurses' training school will be maintained in connection with the institution. Free eye clinics will be held once a week, under the direction of Dr. Edwin S. Steese, New York, who has a summer residence at Northport. Dr. Eugene D. Tapley is the physician in charge of the new institution.

## MARYLAND

**Personal.**—Dr. Alexius McGlannan, chief surgeon of the Mercy Hospital, Baltimore, has been appointed consulting surgeon for the Fort McHenry Hospital at Baltimore by Dr. L. B. Rogers, chief medical adviser of the U. S. Veterans' Bureau.



**Johns Hopkins Building Program Started.**—The new \$1,000,000 building for the school of hygiene and public health of Johns Hopkins University is under way. The new structure, to be located at Monument and Wolfe streets, will be of Italian architecture, eight stories in height. Work has been completed on the east wing of the new women's clinic of Johns Hopkins Hospital, and the work of tearing down the west wing, preparatory to the erection of the second half of the clinic, is going on. The new pathologic laboratory of the medical school has been completed. The women's clinic and the pathologic laboratory were erected at a cost of \$450,000 each, and the funds for the public health building were supplied by endowment from the Rockefeller Foundation.

**Mental Hygiene Clinic to Be Established.**—Plans for the establishment of a mental hygiene clinic in Baltimore are being formulated by the board of mental hygiene of Maryland. It is planned to establish at the University of Maryland a department of mental hygiene, which will be conducted as a mental hygiene clinic, where the physicians from the state institutions will be in attendance, enabling them to come in contact with patients suffering from mental disorders in the incipient stages. This clinic will be an intermediate step between the home and the hospitals. It should decrease the number of admissions to the state hospitals and increase the number of discharges and paroles. The cooperation of the University of Maryland is assured, and it now remains to work out the details of operation.

#### MASSACHUSETTS

**Board of Registration in Medicine.**—Dr. Samuel H. Calderwood, Boston, has been elected chairman of the state board and Dr. Charles E. Prior, Malden, secretary.

**Estate Willed to Harvard.**—Under the will of Mrs. Alice H. Plimpton, who died in Norwood, recently, \$50,000 is donated to Harvard University, of which \$30,000 will go to Harvard College and \$20,000 to the medical school.

**Hospital News.**—John B. Lewis, Boston, has offered his estate in Reading consisting of a large house and several smaller buildings, together with ample grounds, for use as a city hospital. A group of hospital buildings, made possible by the gift of Miss Amelia Jones, will be erected on the Jones farm in South Dartmouth for crippled children. The first unit of the group to be erected is the hospital proper, which will have a capacity of fifty beds. Later a school and workshop will be provided. The entire project will be carried out by the board of trustees of St. Luke's Hospital. The state legislature has issued an order directing the department of public health to make a general survey of all tuberculosis work in the state, it is stated, as a result of the introduction into the last session of the legislature of several bills to take over all tuberculosis institutions by the state department of health. The state health commissioner has appointed a special board, of which Dr. Sumner H. Remick is chairman, to carry out the work.

#### MICHIGAN

**Chiropractor Sentenced.**—It is reported that F. W. Barkdall, a chiropractor of Big Rapids, was sentenced to serve ninety days in the county jail, and fined \$50, at Cadillac, January 28. Following insulting remarks by Barkdall regarding the law, the judge stated that twenty days would be added to the jail sentence if the \$50 fine was not paid within ten days.

**Influenza Closes Town.**—City health authorities of Bessemer have issued strict quarantine orders in an effort to curb the epidemic of influenza now prevailing there. All public and parochial schools, dance halls, skating rinks, moving picture theaters and other public places have been closed for an indefinite period. Social gatherings have been forbidden and no church services will be held.

#### MINNESOTA

**Infant and Maternity Hygiene.**—A course of fifteen lessons in the hygiene of maternity and infancy will be offered to the women of the state under the auspices of the division of child hygiene of the state board of health and the extension division of the state university, it is announced. The course will be given to groups of from fifteen to twenty women under the leadership of the county or district nurse, rather than to individuals. On the satisfactory completion of the course, the university will present each woman with a certificate. The division of child hygiene has prepared an obstetric

package that can be used in rural work, containing the minimum of sterile supplies used for delivery in the home. These packages can be prepared at a cost of \$2.

#### MISSOURI

**Personal.**—Dr. Borden S. Veeder, professor of clinical pediatrics, Washington University School of Medicine, St. Louis, has been named a director of the new American Child Health Association. Dr. Robert J. Terry, professor of anatomy, Washington University School of Medicine, St. Louis, was recently elected secretary of the anthropological section of the American Association for the Advancement of Science. Dr. Evarts A. Graham, professor of surgery, Washington University School of Medicine, St. Louis, has accepted an invitation from the California Academy of Medicine, San Francisco, to speak on the "New Phases of Thoracic Surgery." Dr. George A. McCulloch, Excelsior Springs, suffered fractures of both legs and one arm and internal injuries, January 28, when the automobile in which he was driving was struck by a train. A banquet was given in honor of Dr. Murray C. Stone and Dr. William R. Beatie, respectively outgoing and incoming presidents of the Green County Medical Society, at Springfield, January 26.

#### MONTANA

**Personal.**—Dr. Earl C. Kading, Belgrade, surgeon to the Chicago, Milwaukee and St. Paul and the Northern Pacific railroads, has been appointed chief surgeon of the Pacific liner *Alexandria* plying between San Francisco and Honolulu. Dr. Daniel L. High, chief of the medical division, U. S. Veterans' Hospital, Helena, addressed the Fergus County Medical Society at the annual meeting. Dr. Harry K. Wilson, Lewiston, was elected president.

#### NEW JERSEY

**Memorial to Dr. Whitenack.**—Dr. Carl E. Sutphen is chairman of a committee which will conduct a campaign to raise from \$60,000 to \$75,000 for the purpose of erecting a wing at the Newark Babies' Hospital, as a memorial to Dr. Miller Royal Whitenack, who died recently from septicemia, incurred while treating a child for throat trouble.

#### NEW YORK

**Scarlet Fever Closes College.**—Bates College at Lewiston has been placed under quarantine for scarlet fever. Eight cases have been reported among the students. No further spread of the disease is anticipated.

**Bill to License Chiropractors.**—A bill to permit the licensing of chiropractors has been prepared for presentation to the New York State Legislature. Two hundred members of the New York State Chiropractic Society have adopted a resolution condemning the recent action of the state board of charities for closing the chiropractic section of the East Side Clinic for Women and Children. The chiropractors claim that absence of a law licensing chiropractors enables charlatans and fakirs to ply an illicit trade in the name of chiropractic.

**Rural Health Centers Urged.**—The state health department is making more vigorous efforts than ever before to induce the legislature to adopt laws establishing rural health centers. The legislation desired would provide for the establishment of hospitals fully adequate for the needs of smaller communities. These hospitals would be maintained partly by local appropriations and partly by state aid, and also by payments from patients, who would be charged according to their means. Officials of the health department cite figures showing that in 1911 in thirty rural localities there were 1,010 physicians, whereas today there are only 829 physicians, and of this number only twenty-six could be called young men. It is believed that the needs are so serious that opposition to the proposed legislation can be easily overcome.

#### New York City

**Health Welfare Course.**—The Washington Square center of New York University opened its first course on "Labor and Employment Management," February 4. Among the subjects to be covered are accident and fire prevention, management of a medical department, the use of emergency hospitals, illness prevention in industrial plants, plant hygiene and sanitation, including consideration of rooms and food for workers, wages and wage systems, employees' representations, profit sharing and life insurance.



**Harvey Society Lecture.**—The seventh Harvey Society Lecture will be delivered by Dr. Leon Asher, professor of physiology, University of Berne, at the New York Academy of Medicine, February 24. His subject will be "The Building Up of the Organism by Chemical and Nervous Coordination and Regulation." The lecture by Dr. E. V. Cowdry of the Rockefeller Institute of Medical Research on "The Significance of the Internal Reticular Apparatus of Golgi in Cellular Physiology" has been postponed to March 10.

**Hospital Notes.**—The Bronx Hospital, located at the corner of Fulton Avenue and One Hundred and Sixty-Ninth Street, has enlarged its holdings by purchasing the Bronx branch of the Young Men's Hebrew Association on the west side of Franklin Avenue, between One Hundred and Sixty-Eighth and One Hundred and Sixty-Ninth streets.—The Hospital for the Ruptured and Crippled has bought two four-story houses at 311 and 313 East Forty-Third Street, adjoining its present holdings.—A two-story fireproof building is being added to the House of St. Giles the Cripple at Garden City, L. I., at a cost of \$50,000. The new structure will provide accommodations for sixty children.—The Samaritan Hospital, Brooklyn, has under construction a six-story building adjacent to the present hospital building and replacing a part of that structure. The new building will cost about \$200,000.—The new wing to Roosevelt Hospital, which when completed will cost \$1,000,000, is in the process of construction.

#### NORTH CAROLINA

**Physical Education Course.**—The North Carolina College, Greensboro, has adopted a four years' course in hygiene and physical education to meet the demand for trained directors in physical education throughout the state.

**Hospital News.**—The North Carolina Orthopedic Hospital for Crippled Children, Gastonia, has received as appropriation from the government of \$25,000 for improvements, and \$65,000 annually for the next two years for maintenance. The age limit of children who can enter the hospital has been raised from 14 to 16 years.—A well equipped orthopedic clinic has been established at Charlotte, as an adjunct of the health department. It was opened to the public, February 1, with Dr. Alonzo Myers, who gives his services free, in charge.

#### OHIO

**Heart Clinic Opened at Hospital.**—A clinic for patients with heart disease has been opened at the Cincinnati General Hospital, under the direction of Dr. Julien E. Benjamin. This is the first of a series of clinics to be established over the city in a campaign against heart disease. The work is under the auspices of the Public Health Federation. Under the direction of the board of health, a clinic will also be established in one of the public schools to care for children in certain districts. Dr. William H. Peters, health officer, is arranging to have persons suspected of having heart disease reported to the clinic, where free treatment and advice will be given.

**Chiropractors to Serve Prison Sentences.**—It is reported that four chiropractors were sentenced to the Canton workhouse and one to Trumbull County Jail, January 27, by Squire Matteson at Warren, when they refused to pay \$500 fines for practicing without a license.—Ten of the seventeen chiropractors awaiting trial at Youngstown for practicing medicine without a license state that they will go to prison rather than pay fines which go to the state medical board for their further prosecution.—Fifteen chiropractors have been arrested in Cincinnati and are now awaiting trial; nine were arrested in Columbus, January 27.—It is reported that all unlicensed chiropractors in Dayton will be arrested.—Hearings of cases against chiropractors are also scheduled at Girard and Niles.

#### OKLAHOMA

**Academy of Science.**—The annual meeting of the Oklahoma Academy of Science was held at the University of Oklahoma, February 10. In addition to the reading of scientific papers detailing research work done in the state, the one hundredth anniversaries of the birth of Gregor Mendel and Louis Pasteur were celebrated.

#### OREGON

**Personal.**—Dr. Lawrence Selling was recently elected president of the Portland Academy of Medicine.—Dr. Clarence W. Keene has been appointed health officer of Silverton.—

Dr. Robert A. Jayne has been elected mayor of Philomath for the second term.—Dr. Albert H. Ross, Eugene, was reelected president of the Lane County Medical Society at the annual meeting and Dr. Gaven C. Dyott, secretary-treasurer.—Dr. W. Ross Eaton, Oregon City, is seriously ill with epidemic (lethargic) encephalitis at the Emanuel Hospital, Portland.

#### PENNSYLVANIA

**Tablet to Dr. Forwood.**—A memorial tablet was unveiled by the Keystone Club of Chester in honor of Dr. Jonathan L. Forwood, first president of the Delaware County Medical Society, at a watch service on the evening of December 31, to which the members of the Delaware County Medical Society and their families were invited.

**County Medical Society Provides Lecture on Vivisection.**—February 1, under the auspices of the Pittsburgh Academy of Science and Art, a lecture provided by the Allegheny County Medical Society, was delivered in Pittsburgh by Mr. Ernest Harold Baynes, entitled "The Truth About Vivisection." Following this lecture, a resolution was offered to the effect that Mr. Baynes had proved conclusively that the main contentions of the antivivisectionists have no foundation in fact, and that it was the sense of the audience that "animal experimentation, including vivisection, has been and is of incalculable value to mankind and to animals through medicine and surgery, and that its practice should be allowed to continue unhampered by ignorance and prejudice."

#### Philadelphia

**Warrants for Sixteen Physicians.**—Warrants for sixteen physicians have been issued by Magistrate Grellis at the instance of R. J. Brauner, an inspector connected with the state health department, charging each with failing to report within ten days births that have occurred under their professional care. A fine of from \$5 to \$50 is assessed for each offense.

**City Physicians Rebel Against Vice Quarantine Duty.**—Mayor Moore's order for the department of health to supervise medical inspections in a city-wide vice quarantine has resulted in open rebellion in that department. Dr. George Ernest H. Johnson, for fourteen years chief diagnostician, has resigned. Dr. Henry A. Strecker, assistant chief medical inspector, has protested to the director of public health, Dr. Charles L. Furbush. Other physicians also believe they should devote their duties to the regular routine of the department. The inspections, which were to have been started ten days ago, still are under discussion. Dr. Furbush has appointed Dr. Anna G. Young for the examination of women.

**Wyncote Bird Club Adopts Resolutions on Vivisection.**—The Wyncote Bird Club held a special meeting, January 23, to hear an address by Mr. R. R. Logan, president of the American Antivivisection Society. Following the lecture, an open discussion was held in which Mr. Ernest H. Baynes defended vivisection. At the close of the discussion the society adopted the following resolutions:

*Resolved*, That it is the sense of this club that Mr. Logan has entirely failed in his attempt to show that vivisection is immoral and unethical and unnecessary to the welfare of human beings or of animals, and, be it further

*Resolved*, That we heartily endorse Mr. Ernest Harold Baynes' stand on animal experimentation and sane humane education in general.

**Society News.**—At the annual meeting of the Association of Industrial Medicine, Dr. Earle H. Ingram was elected president, and Dr. George H. Hughes, secretary.—Dr. William E. Parke was elected president, and Dr. Charles S. Barnes, secretary, of the Obstetrical Society of Philadelphia, recently.—The American Congress of Internal Medicine will convene in Philadelphia during the first week in April. Clinics and demonstrations will be given at the various hospitals of the city.—At the annual meeting of the Pathological Society of Philadelphia, Dr. Oliver H. Perry Pepper was elected president and Dr. Edward Weiss, secretary.—Drs. William H. Mackinney and Stirling W. Moorhead were elected president and secretary, respectively, of the Philadelphia Urological Society, at its annual meeting.

#### SOUTH CAROLINA

**Chiropractic Bill Is Killed.**—The bill introduced into the House of Representatives by Edgar Brown, to create a state board of chiropractic examiners in South Carolina, was killed by a vote of 65 to 46, January 31. A similar bill was killed by the House in 1922.



## TEXAS

**Hospital News.**—The new city hospital at Teague was opened in December.—It is announced by Col. M. A. W. Schockley, commanding officer at the William Beaumont General Hospital, Fort Bliss, that improvements involving an expenditure of \$50,000 will be made at that institution.

**State Public Health Association.**—At the annual meeting of the Texas Public Health Association, February 8, at Austin, the following officers were elected for the ensuing year: president, J. W. Butler, Galveston; vice presidents, Drs. Elva A. Wright, Houston, and Joseph B. McKnight, Sanatorium, and secretary, Dr. Zachary T. Scott, Austin.

## WASHINGTON

**Surgical Society Elections.**—At the annual meeting of the Seattle Surgical Society, January 19, Dr. Otis F. Lamson was elected president; Dr. Walter C. Woodward, vice president, and Dr. Hubbard T. Buckner, secretary-treasurer.—At the annual meeting of the Seattle Academy of Surgery, January 24, Dr. E. Weldon Young was elected president; Dr. Frederick R. Underwood, vice president, and Dr. William C. Kintner, secretary-treasurer.

**Personal.**—Dr. Frederick J. Cullen, health officer of Puyallup, has been appointed health officer of Pierce County, to succeed Dr. Philip B. Swearingen, Tacoma.—Dr. Milton G. Sturgis, Seattle, read a paper on "Unrecognized Fracture of the Spine" before the Victoria (B. C.) Medical Society, recently.—Dr. J. A. McNiven, Aberdeen, suffered a fractured skull when he was knocked down by an automobile, January 11.—Dr. Ottar A. Thomle was reappointed county physician of Snohomish County at the annual meeting of the board of county commissioners, January 11.

## WEST VIRGINIA

**Health Officer Appointed.**—Dr. Edward C. Bennett has been appointed health officer of Richwood to succeed Dr. Ernest F. Flora.

**Hospital Merger.**—It is announced that the Charleston General Hospital merged with the Sheltering Arms Hospital, February 1. Dr. John E. Sanaday, is superintendent of the combined institutions, which now have a capacity of 200 beds.

## WISCONSIN

**State Board of Health Elects.**—At the annual meeting of the Wisconsin State Board of Health at Madison, Drs. William F. Whyte, Madison, and Edward S. Hayes, Eau Claire, were reelected president and vice president, respectively, for the ensuing year.

## PORTO RICO

**Radio Concerts for Lepers.**—An anonymous gift of \$100 from New York City and added local contributions have made possible the installation of a radio receiving set at Cabras Island, the leper colony of Porto Rico. The local telephone company installed the instrument free of charge, and concerts and news broadcasted from San Juan, Havana, and the United States can be received. There are thirty-six lepers now stationed on the island.

## CANADA

**Toronto Academy of Medicine.**—The annual library and historical night of the academy was held, January 2. Dr. O. Fraser Harris, professor of physiology of Dalhousie University, Halifax, delivered the historical lecture. Dr. Primrose presented some early medical diplomas from the University of Edinburgh. Dr. James A. Temple presented a photograph of the late Dr. Edward M. Hodder, once professor of obstetrics and gynecology at Trinity Medical College. A volume of the *Consolidated Statutes of Great Britain* of the twenty-third year of Queen Elizabeth's reign was donated by Dr. Thomas W. G. McKay of Oshawa.

**Hospital News.**—An addition to St. Justine's Hospital, Montreal, which was recently opened, increased the capacity of that institution from eighty to 150 beds. The new structure was erected at a cost of \$300,000.—During the fire in Ontario last October, the general hospital in Haileybury was completely destroyed. A site has been purchased with the assistance of the Daughters of the Empire and the Ontario Red Cross, and a building with modern equipment will be erected as soon as possible. Following the fire, the Ontario

Red Cross placed at the disposal of the town an emergency hospital in which patients will be cared for until the new general hospital is erected.

**Public Health News.**—A proposed "Public Health Campaign" on an extensive scale is under consideration by the educational and publicity committee of the British Columbia Medical Association. Apart from a systematic press campaign, a series of public addresses will be given throughout the province shortly.—A comparative table issued recently by the provincial officer of public health in Ontario shows a remarkable decrease in the number of cases of smallpox and several other communicable diseases. Scarlet fever and diphtheria also show a falling off. Whooping cough, however, has increased. In January, 1922, there were only eighty-nine cases, while last month 376 cases were reported. Influenza, of which there is much in Toronto, shows 115 cases for last month, with twenty-nine deaths, while for the same month last year no cases were reported. Venereal diseases of all types show a downward trend in the number of cases.

## GENERAL

**Fraudulent Vender of Medicines.**—An individual who falsely claims to be connected with Rush Medical College of Chicago is traveling through the Southwest and fleecing the public by collecting \$1.98 from each, which he tells them covers the cost of medicines which will be sent to them by the college named. A stream of letters received by the college indicates that he is deceiving many people.

**Convalescent Homes Listed.**—The Sturgis Research Fund of the Burke Foundation for Convalescents, White Plains, N. Y., has recently issued a directory of 162 convalescent homes in the United States. They have a total of 8,980 beds, including 4,525 used during the summer months only. It is noted that one third of all convalescent beds in the United States are in New York City.

**Clinical Society of Genito-Urinary Surgeons.**—The third annual meeting of this association was held in Chicago, January 26-27. The following officers were elected for the ensuing year: president, Dr. E. L. Keyes, Jr., New York; vice president, Dr. Hugh H. Young, Baltimore, and secretary-treasurer (reelected), Dr. William C. Quinby, Boston. Clinics were held by Dr. Louis E. Schmidt at the Michael Reese and Alexian Brothers hospitals, and by Dr. Herman L. Kretschmer at the Presbyterian and U. S. Veterans' No. 76 hospitals.

**Alpha Omega Alpha Issues Catalogue.**—The first general catalogue of the Alpha Omega Alpha, the medical honorary fraternity, a volume of 250 pages, has been issued recently. In addition to a roster of 3,780 names with addresses, the publication contains a list of the general officers and committees, also a history of the organization since it was formed in 1902. Dr. William W. Root, Slaterville Springs, N. Y., secretary-treasurer of the society, is the editor. There are twenty-six chapters in the organization, two of which are in Canada, at Toronto and McGill universities.

**Influenza Epidemic.**—Twenty-four states reporting through their health offices to the U. S. Public Health Service gave a total of 17,593 influenza cases occurring in the country for the week ending, Feb. 3, 1923, according to the report of the U. S. Public Health Service issued this week. The same states for the preceding week reported 15,328 cases. Both figures show an increase over the same period for the years 1921 and 1922. In 1920 more than 170,000 cases were recorded. Surgeon-General Cumming stated that the present spread of influenza really amounts to an epidemic, but the disease is manifesting itself only in a mild form.

**Deaths from Influenza and Pneumonia in Large Cities.**—The number of deaths from influenza and pneumonia combined in certain large cities of the United States for the last four weeks of 1922 and the first week of 1923 has in nearly each instance steadily increased. New York City had the greatest number of deaths (208) in the first week of January, with Philadelphia a close second (178). Chicago came third, with 117 deaths, and Detroit fourth, with seventy-six deaths. Boston had only fifty-eight deaths, and Baltimore fifty-two. Cincinnati had forty-four deaths, and Atlanta forty. Since December 1, the mortality from influenza and pneumonia has increased week by week in each of the cities named.

**Punishment for Narcotic Drug Violators.**—A large reward will be given for information leading to the arrest and conviction of violators of the Federal Narcotics Drug Import and Export Act, according to amendment presented in the House this week by Representative Lineberger. The measure



fixes a fine of not less than \$500 and not more than \$5,000, with a prison term of from one to ten years for fraudulent importation of narcotics into the United States or for facilitating in any manner the transportation, concealment or sale of any narcotic drug after importation. Amendment provides that portions of fines paid by the offenders and of bail forfeited by offenders shall be used to pay rewards for information.

**The Sofie A. Nordhoff-Jung Cancer Research Prize.**—An annual prize of \$500 bearing this title has been founded by Dr. Sofie A. Nordhoff-Jung of Washington, D. C. The prize is offered to encourage researches in the etiology, prevention and treatment of cancer. It will be awarded by a committee composed of members of the University of Munich, Bavaria, and will be granted for the first time in December, 1923. The committee consists of Professors Borst, Doederlein and Sauerbruch, with Professor von Romberg as chairman. This body is empowered to elect successors. The award will be made as a recognition of the most conspicuous work in the literature bearing on cancer research, done previously to the allotment of the award. Though the prize will not be awarded on a competitive basis, the commission invites all research workers in cancer to submit literature on this subject.

**Case Against Sheppard-Towner Law.**—The Secretary of the Treasury and his codefendants petitioned this week, in the District of Columbia Supreme Court, that the action of Mrs. Harriet A. Frothingham of Massachusetts attacking the validity of the Sheppard-Towner Maternity Act be dismissed. The defendants asserted through United States Attorney Gordon that the case cannot be maintained because it is in effect against the United States; that there is no equity in the bill, and that no facts are alleged which, if true, would entitle the plaintiff to relief. Congress has the power, counsel for the defendants claim, to act for the public welfare in matters the regulation of which belongs exclusively to the states. The law does not attempt to force the acceptance of its provisions, but leaves it optional with the states. It is anticipated that the hearing of this case will be expedited to enable it to reach the United States Supreme Court in time to be argued with the case brought there by the state of Massachusetts, which also attacks the validity of the act.

**American Medical Association and Public Health.**—During the proceedings at Chicago, March 5 to 7, of the Annual Congress of the Council on Health and Public Instruction of the American Medical Association, a meeting will be held on the afternoon of March 7 with the Public Health Service for the discussion of public health. At this meeting, over which Surg.-Gen. H. S. Cumming has been asked to preside, the following program will be given: "Education of Sanitarians and the Future of Public Health in the United States," by Dr. H. S. Cumming; a report on the activities carried on by the Public Health Service since the conference of last March on the education of sanitarians, by Asst. Surg.-Gen. W. F. Draper; "Recruiting and Training of Sanitarians," by Dr. C. E. Winslow; "Steps Already Taken in Standardization of Public Health Training," by Dr. J. A. McLaughlin, U. S. Public Health Service, and "The Course in Public Health and Hygiene for Medical Students," by Dr. D. E. Edsall of Harvard University. These addresses will be discussed by Dr. John Sundwall of the University of Michigan and by Dr. E. O. Jordan of the University of Chicago. The closing address, "Education of the Partly Trained Sanitarian Now Employed," by Dr. W. F. Sears of Syracuse University, will be discussed by Dr. E. G. Williams, state health officer of Virginia, and Dr. W. S. Rankin, state health officer of North Carolina.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

Lyng-In Hospital, Providence, R. I., \$800,774, the proceeds of a campaign for funds; Esmond Mills, \$3,000; Mr. and Mrs. E. B. Merrian, \$1,500; Providence Fire Department, \$1,200; Queen Dyeing Company, \$1,000; in memory of the late Mrs. M. C. Dart, \$900, and Mrs. Horace Kimball, \$600.

Roosevelt, St. Luke's and the New York hospitals are the chief beneficiaries of the \$3,000,000 estate of the late Miss Emily F. Southmayd.

Memorial and St. Joseph's hospitals, Nashua, N. H., Hopewell Society of Brooklyn, Home of St. Giles the Cripple, New York Association for the Blind, Faith Home for Incurables, Brooklyn, Servants for the Relief of Incurable Cancer, Trudeau Sanatorium, Trudeau, N. Y., and the American Red Cross, each \$25,000, and a share of the residuary estate, under the will of Mrs. Sarah J. Robinson.

Twenty New York institutions will share in the distribution of the \$580,471 estate of the late Alfred Blumenthal, recently killed in a railway accident in Spain. Mount Sinai Hospital will receive one-fifth of the estate.

Brown University, Providence, R. I., \$50,000 from the estate of Robert P. Brown, to endow a professorship in biology; in honor of

Professor Appleton of the university, \$3,800, subscribed to provide annual lectures on pure or applied chemistry, to be known as the John Howard Appleton Lectureship Fund.

New York Skin and Cancer Hospital, \$25,000, by the will of Mary A. Palmer Draper.

Iroquois Hospital, Watseka, Ill., \$25,000, by the will of Mrs. Sarah Kay.

Trudeau Sanatorium, Trudeau, N. Y., and the Hospital for Ruptured and Crippled, New York, each \$5,000, by the will of Mrs. Cora M. Perkins.

American Society for the Control of Cancer, \$3,719, by the will of Mrs. Kate H. P. Roberts of Chicago.

American Welfare Association, Wieboldt Department Stores and Mrs. Wieboldt, Chicago, \$4,000; Samuel Insull, \$1,200; Armour and Company, Albert Breitung, Paul F. Mueller, Henry Schoellkopf, Teich and Roessler and Emil and Carl Eitel, all of Chicago, each \$1,000.

Two lots at Clovis, California, for the erection of a hospital for Indians, money for which will be collected by subscription.

**Society News.**—The forty-fifth annual congress of the American Laryngological Association will be held at the Hotel Ambassador, Atlantic City, N. J., May 16-18, under the presidency of Dr. Emil Mayer of New York. Dr. George M. Coates of Philadelphia is the secretary.—The next annual meeting of the American Society for the Control of Cancer will be held in New York, March 3.—The American Association of Orificial Surgeons will hold its thirty-sixth annual convention in Chicago in September, under the presidency of Dr. Paul C. Goodlove, Detroit, it is announced. Garth Hyatt, former Chicago newspaper man, has been elected secretary of the research bureau of the association.—The seventy-eighth meeting of the New England Pediatric Society was held in Boston, February 9, at the Boston Medical Library. Dr. Edwards A. Park, professor of pediatrics, Yale Medical School, presided. Dr. Ruth A. Guy, New Haven, spoke on "The Use of Cod Liver Oil in Rickets; Its Action as a Regulator of the Calcium and Phosphorus Metabolism," and Dr. Ethel C. Dunham, New Haven, read a paper on "A Study of Diets and Living Conditions of Rachitic Children with a Report of the Earliest Case of Rickets on Record."—The thirty-ninth session of the American Association of Anatomists will be held in Chicago, March 28-30, under the presidency of Dr. Clarence M. Jackson, professor of anatomy at the University of Minnesota Medical School, Minneapolis.—The third annual convention of the Pacific Northwest Medical Association will be held in Seattle, June 19-21, under the presidency of Dr. H. D. Dudley, Seattle. Among the speakers will be Drs. A. J. Carlson, Peter Bassoe, Dean Lewis, Oliver S. Ormsby and R. T. Woodyatt of Chicago and Drs. F. W. Peabody and Channing Frothingham of Harvard University Medical School, Boston.

## LATIN AMERICA

**Personal.**—Dr. P. D. Rodríguez Rivero has been appointed Director General of Health of Venezuela, to succeed Dr. L. G. Ghacín Itriago.

**A Physician Elected President.**—One of the most prominent Central American physicians, Dr. A. Quiñones Molina, was elected president of El Salvador, at the recent election held in that country. Dr. Quiñones Molina graduated in 1897. He has filled many positions of importance, and until recently was vice president of El Salvador.

**New Cuban Journal.**—The Medical Association of Camagüey, Cuba, has begun the publication of a journal entitled *Camagüey Médico*. The editor is Dr. J. Agulló Sánchez. He will be assisted by Drs. A. A. Agüero G. and F. Martínez Lamo. New officers were recently elected by the medical society as follows: president, Dr. R. V. Guerrero Betancourt; vice president, Dr. V. Rodríguez Barahona; secretary, Dr. A. Agüero García. Of sixty physicians at Camagüey, thirty attended the meeting.

## FOREIGN

**Death of Roentgen.**—The cable reports the death of Prof. Wilhelm Konrad Roentgen, whose discovery of the rays which he modestly named the  $x$  rays—the unknown rays—has made his name immortal. He was born, March 27, 1845, at Lemnep, near the Ruhr district. He was graduated at Zurich, and became professor of physics at Strasbourg, later at Giessen and Würzburg, and finally at Munich. His great discovery was made at Würzburg in 1895. He retired from the chair of experimental physics at Munich in 1920, at the age of 75.

**Congress on "Logopädie."**—The *Münchener medizinische Wochenschrift* relates that an international gathering is being planned to discuss the nature and treatment of aphasia and other disturbances in speech, of central and peripheral origin. This Kongress für Logopädie is to be held this year at Vienna. Dr. Froeschels, dozent, Ferstelgasse 6, Vienna, is



the secretary, and he appeals for communications and summaries on these topics. He extends his invitation to all countries, but urges that, in the interest of scientific discussion, the delegates selected by other countries should be able to speak German.

**The Heubner Prize in Pediatrics.**—It is announced that the triennial prize offered by the Heubner endowment for the most important work in pediatrics of the last three years is to be awarded to Dr. Rudolf Degkwitz of the children's clinic of the University of Munich. His name has been prominent in the literature of late on account of his success in preventive serotherapy of measles, utilizing convalescents' serum. This is the third awarding of the Heubner prize. The first recipient was Pfaundler, also of the Munich pediatric service, for his research on body measurement ratios. The prize at the second awarding was given to Dr. Ylppö of the Berlin pediatric service for his studies on the pathology of the prematurely born.

**International Health Course.**—The health section of the League of Nations recently brought to a successful conclusion an international health course for medical officers, in which twenty-two officials from the health departments of Austria, Belgium, Bulgaria, Italy, Poland, Russia and other countries took part. The course was held in Belgium and Italy during two and one-half months, under the auspices of the directors of the Belgian and Italian health services, respectively, through the aid of a grant from the Rockefeller Foundation. On the completion of the course, those who took part met at Geneva, where a discussion was held as to the benefits derived. The next course of this kind will be held in England.

**The Jenner Centennial at Paris.**—Supplementary to the public meeting of the Académie de médecine at Paris in honor of the centennial of the death of Jenner, Jan. 26, 1823, the delegates to the celebration were the guests of the Académie at a banquet at a private clubhouse. M. Paul Strauss, minister of hygiene, was toastmaster, and Sir Ronald Ross and two others responded on behalf of England. Professors Willems and Rutter spoke for Belgium, and Dr. Haccius for Switzerland. Delegates from the Netherlands and from Tunis also paid tribute to the discoverer of vaccination. Lantern slides and a museum presenting the history of vaccination were features of the public centennial celebration at the Académie. It still treasures the deposit bequeathed to it by Jenner a century ago.

**Personal.**—Dr. R. A. Peters has been elected to the Whitley professorship of biochemistry at the University of Oxford. —The Milroy lectures on "Canned Foods in Relation to Health" will be delivered, February 22 and 27 and March 1, by Dr. W. G. Savage. —Dr. Geoffrey Evans will deliver the Goulstonian lectures, March 6, 8 and 13, on "The Nature of Arteriosclerosis," and Dr. Arthur J. Hall will give the Lumleian lectures on "Encephalitis Lethargica (Epidemic Encephalitis)," March 15, 20 and 22. All these lectures will be delivered at the Royal College of Physicians of London. —The king of the Belgians has conferred the Order of Leopold II on Dr. Alexander Granville, president of the sanitary, maritime and quarantine council of Egypt. —The king of England has conferred knighthoods on the following physicians: Dr. David Drummond, professor of the principles and practice of medicine in the University of Durham; Dr. William Hamer, chief medical officer of the London County Council; Dr. Norman Walker, representative for Scotland in the General Medical Council and lecturer on diseases of the skin at Edinburgh University; Dr. Hilarion Marcus Fernando, member of the legislative council of the Island of Ceylon and Dr. Bernard Spilsbury, lecturer of morbid anatomy at St. Bartholomew's Hospital Medical College. —The Kaiser-i-Hind medal has been conferred on Dr. Robert Harper, medical missionary of the American Baptist Mission, Burma.

#### Deaths in Other Countries

Dr. John B. Haycraft, emeritus professor of physiology at University College, Wales. —Dr. T. W. Fowler, former mayor of Coventry, England, and president of the Coventry Division of the British Medical Association; aged 61. —Dr. Bernard Pickering, secretary of the Bolton (England) Medical Association, December 18. —Dr. John J. Pringle, lecturer on dermatology at the Middlesex Hospital; secretary of the Dermatological Society of London; formerly president of the dermatologic section of the Royal Society of Medicine, and the British Medical Association; at Christchurch, New Zealand, in December; aged 67. Dr. Pringle was a corresponding member of the Société française de dermatologie,

of the Wiener and Berliner dermatologische Gesellschaften and of the Società Italiana di dermatologia. He edited the *Portfolio of Dermochromes* and the *British Journal of Dermatology*. —Dr. F. P. Nunneley, at Bordighera, December 17. —Dr. Horatio P. Symonds, formerly lecturer on surgery at the University of Oxford and president of the surgical section of the British Medical Association; January 16, aged 71. —Dr. H. Hartmann, aged 60, the leader of the movement for organization of the profession in Germany, which resulted in the foundation of the Leipzig League, now renamed the Hartmann League. As a general practitioner at Leipzig, he early appreciated the evils of contract practice in the absence of concerted action by physicians, but he found it uphill work in 1900 to rouse the profession to the advantages of organization. The general acceptance of the principle of the "free choice" of a physician by the insured was his latest and greatest triumph. —Dr. Vaclac Pitha, professor of gynecology and obstetrics at the University of Prague, aged 65. —Dr. Francisco Rueda, an otolaryngologist, at Madrid. —Dr. Manuel L. Sanguinetti, surgeon to the Garibaldi Hospital at Rosario. —Dr. Clément Philippe of Brussels, aged 67. —Dr. Gennaro D'Errico, instructor in experimental physiology at the University of Naples. —Dr. Leonel Plasencia, professor of biologic and medical chemistry, eminent in laboratory research, and Dr. Rafael Pérez Vento, professor of physiology, both at the University of Havana. —Dr. Edmundo Lacerda of Petropolis. —Dr. P. Müller, formerly director of the gynecologic clinic at Berne, aged 86. —Dr. F. Schanz, an ophthalmologist of Dresden. —Dr. Victor Bovet, at an advanced age. He was an authority on military medicine in his day, and instructor at the University of Berne.

## Government Services

### Hospital to Be Discontinued

Dr. J. E. Dyer, head of the government hospital, Colfax, Wash., received orders from Washington, February 1, to close the institution at once. The thirty men still under treatment will be transferred to Knoxville or other government hospitals, it is announced. The Colfax institution has been in operation about two years.

### Examination for Commissions

An examination for those who desire to obtain commissions in the Medical Corps of the regular army is announced for July 16-20, 1923, at the Office of the Surgeon General in Washington, D. C.

### Bill to Repress Prostitution

The bill pending in the Senate to enlarge the powers of the Department of Justice for the repression of prostitution for the protection of the Army and Navy has been favorably reported from the Committee on Judiciary. The purpose of this bill is to revive the functions formerly exercised by the U. S. Interdepartmental Social Hygiene Board, and to authorize agents of the Department of Justice to inquire into vice conditions in the vicinity of army and navy posts, forts or hospitals. The bill proposes an expenditure of \$325,000 a year for carrying out its provisions.

### Hearing on Narcotics Before House Committee

The Committee on Foreign Affairs of the House of Representatives, Tuesday, February 13, began hearings on House Joint Resolution No. 430, which requests the President to urge certain foreign governments to limit the production of narcotic drugs and raw materials of which they are made to the amount actually required for medicinal and scientific purposes. The resolution states that the annual production of opium is approximately 1,500 tons, of which less than 75 tons is required. It also asks the President to request Great Britain, Persia and Turkey to limit the growth of the poppy and the production of opium and its derivatives, and to call on the governments of Peru, Bolivia and the Netherlands to eliminate the production of coca leaves and their derivatives. It is expected that physicians and officials from the Federal Narcotic Bureau, and from the Department of Justice will be called to testify before the committee.



## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Jan. 26, 1923.

#### The Jenner Centenary

The centenary of the death of Jenner has been commemorated in various ways. This notice in memoriam appeared in the *Times*:

JENNER.—In honoured memory of EDWARD JENNER, M.D., LL.D., F.R.S., Physician Extraordinary to His Majesty King George IV, Foreign Associate of the National Institute of France, &c., the discoverer of vaccination, born at the Vicarage, Berkeley, Glos., 17th May, 1749, died at Berkeley, 26th January, 1823. This notice is inserted by descendants of Dr. Jenner's sister Ann, who married the Rev. William Davies, Rector of Eastington, Glos.

But the very efficacy of his discovery has led people to forget its value, for the universal devastation once caused by smallpox is forgotten. It is well to recall that in his time the disease was regarded as one that none might expect to escape. "A mother's son is never her own till he has had the smallpox" was a current saying. At the Royal Society of Medicine, the president, Sir William Hale White, delivered an address on "Jenner and His Work." Mr. Edward Jenner Davies of Stonehouse, Gloucestershire, a great-grandson of Jenner's sister Ann, placed a laurel wreath on the statue of Jenner in Gloucester cathedral. Other descendants of Jenner present were a great-granddaughter and two great-great-granddaughters. An Indian physician, Dr. M. L. Bangara, placed on the statue a gift of flowers inscribed "An humble tribute from India." A commemorative exhibition of personal relics, medals, books, manuscripts, engravings, caricatures and other objects connected with Jenner is being held at the Wellcome Museum, and will remain open for some months.

#### Maintenance of Illegitimate Children

An influential deputation laid before the home secretary evidence as to the unsatisfactory position of unmarried mothers and illegitimate children. They contended that the unfair proportion of the financial burden thrown on the mother was an important factor in the morbidity and mortality of illegitimate children, and also tended to a further moral lapse on the part of the mothers. They urged the home secretary to introduce a bill making it possible for unmarried parents by their subsequent marriage to relieve the innocent child of the stigma of illegitimacy, as in every other civilized country. They also proposed that the bill include provision for an increase in the maximum amount payable under an affiliation order, the present sum of \$2.50 weekly being inadequate in view of the present cost of maintaining a child. The home secretary considered that the deputation had put before him a very strong case, and he expressed sympathy with the objects in view. Though want of time prevented him from promising that the government would introduce a bill this session, that would not prevent the introduction of a private member's bill, if successful in the ballot. In such circumstances, the government might see its way to furnish facilities for the passage of such a measure.

#### Control of the Drug Traffic

Sir William Collins, who, at The Hague in 1911-1912, assisted in drafting the measures of the International Opium Convention, has during the last five years published in the *Times* several communications urging their effectuation and the need of world-wide control of the production of opium, morphin, cocain and other drugs of addiction, if the growing abuse of these drugs and their employment for other than

legitimate purposes are to be prevented or checked. In a letter to the *Times*, he now points out that it is the excess of production over any conceivable legitimate use that contributes largely to the misuse of these drugs. A report laid before the assembly of the League of Nations, last September, recommended control of production so as to limit it to the amount required for medical and legitimate purposes, as the most effective way of stopping illicit traffic. But it has not been found easy to determine with accuracy what the legitimate requirements of these drugs are (1) for the world's consumption and (2) to meet the demands of each particular nation. At the Hague Conference of 1911, Sir William Collins stated that, at a London hospital treating 138,000 patients annually, the consumption of opium was less than 13 pounds, and of morphin less than 5 ounces. Recently, with the assistance of Mr. Langford Moore, dispenser to St. Bartholomew's Hospital, he has ascertained that at ten large London hospitals, which treated more than 70,000 inpatients and more than 550,000 outpatients in the year 1921, the amount of opium used was less than 42 pounds; of morphin, less than 5½ pounds, and of cocain, a little more than 9 pounds. These relatively modest amounts tend to show that of the hundreds of thousands of kilograms of opium produced and of the tons of morphin manufactured and exported annually, there must be an ample margin available for illicit purposes.

#### The Elixir of Life

In a previous letter (*THE JOURNAL*, Jan 13, 1923, p. 121), the arrival in London of Dr. Conrad Burchardi, for the purpose of performing Steinach's operation, was announced. An evidently inspired article in the lay press informs us that, in the six weeks he has been in London, he has had 150 patients, among whom are a number of physicians. Dr. Burchardi is described as "the blond giant from Vienna," who is "no crank and performs a straightforward operation." He is "highly qualified, with diplomas from Heidelberg, Freiberg and Bonn." He is reported to have said: "We cannot cure everybody. The patient must have a sound heart, lungs and liver, and I have had already to turn down about 200 people. The operation is undoubtedly successful in most cases of neurasthenia, and there is no limit to age. I have had cures with men whose ages varied from 28 to 78. On women, we cannot operate. In their case, roentgen-ray treatment is necessary, but also is successful. I had the pleasure of enabling a society woman to return to the abandoned joys of the hunting field." Dr. Burchardi is described as born in Vienna of Danish parents, the grandson of a former prime minister of Denmark. He says that he is quite prepared to lecture to the profession. So far, neither the profession nor its journals have taken any notice of his work.

#### Dangerous Drugs Regulations in Victoria

New regulations governing the manufacture, sale, possession and distribution of certain poisonous drugs have come into force in Victoria. Poisons are divided into three classes: dangerous, specified and potent drugs. The first class includes morphin, cocain, ecgonin, diamorphin and other opium preparations, provided the preparation contains not less than 2 per cent. of cocain, ecgonin or diamorphin. The only persons authorized to possess, sell or distribute dangerous drugs are registered physicians, dentists, pharmacists, veterinary surgeons, licensed dealers in poisons, persons holding a special permit, and licensed manufacturers. Records must be kept of all purchases and sales, and the names and addresses of all purchasers must be entered. Dentists and veterinary surgeons are required to indicate on prescriptions that the drugs are required for local, dental or animal treatment, as the case may be. A physician must indicate on his prescription the number of times the prescrip-



tion may be dispensed, the number being limited to four. The prescription must be stamped or marked on each occasion on which it is dispensed, and when dispensed for the last time, as indicated by the maximum number marked on the script, the pharmacist must stamp or write the word "canceled" across the prescription.

When a prescription is dictated either over the telephone or over the counter, a written and signed prescription must be delivered to the pharmacist without delay. The prescription must bear the full signature in writing (a rubber stamp may not be used for this purpose), the date, and the name of the patient. Physicians who dispense their own prescriptions must keep records of all stocks of the drugs named and of all use of them. The second class (the specified drugs) includes chloral, ergot, paraldehyd, diethylbarbituric acid and sulphomethane. The pharmacist may not dispense prescriptions containing them more than twice unless the physician indicates the number of times they may be dispensed. After the prescription has been dispensed the maximum number of times, it must be marked "canceled." These drugs may not be supplied without a physician's prescription, but they may be sold to nurses in immediate charge of a public hospital or a nurse employed by the Victorian Bush Nursing Association, on a written order of a medical officer of this association. The third class (potent drugs) includes acetanilid, suprarenal, pituitary and thyroid extracts, serums or vaccines, and oil of tansy. These drugs may be sold by a pharmacist or licensed dealer in poisons, provided the label carries the words: "This preparation is a potent drug and care must be exercised in using it."

## PARIS

(From Our Regular Correspondent)

Jan. 19, 1923.

### Prohibition in America

I have already referred to the campaign against prohibition that is being waged in the European press, and to the ridiculously exaggerated stories that the newspapers are printing on the subject (*THE JOURNAL*, July 24, 1920, p. 255, and April 2, 1921, p. 947). Dr. G. Linossier, of the editorial staff of the *Paris médical*, recently began in the journal he represents a series of articles entitled, "In Dry America." He also makes reference to recent fantastic accounts that have appeared in the daily papers, which tend to discredit prohibition in general. For instance, a telegraphic dispatch dated New York, October 13, which has made the rounds of the press, affirms that prohibition has increased the number of deaths from alcohol. The number is said to have increased from eighty-three to 173 for an equal period of time. Linossier states that such a result is too improbable to be convincing, but the opponents of prohibition lose no opportunity to emphasize that the Americans, no longer having ready access to alcoholic beverages of good quality such as are found in profusion in the cabarets of France, have recourse to adulterated products, with the result that many deaths ensue. A few weeks ago, a popular illustrated journal stated that the majority of the American people regarded with impatience all Draconian legislation, and that not a week passes without some secret depository of whisky being pillaged by the mob. These disorderly scenes are said often to degenerate into regular pitched battles. In order to arouse the imagination of its readers still further, the journal printed a large colored picture representing a crowd, in a street of New York, fleeing after such a raid. The fugitives have their arms full of the stolen goods, while many bottles lie broken on the ground; a policeman, personifying "hideous" prohibition, is beating a woman crazed with drink. As Linossier remarks, all those in France (and the number is very great) who, directly and

indirectly, make their living from the sale of alcoholic beverages have an interest in spreading the belief that prohibition is a failure; for, in case it proves a success in other countries, a contagious influence on France is feared. On the other hand, nearly every person in France has been reared from childhood with the false idea that wine is a generator of energy and strength quite indispensable to manual laborers and mental workers alike. In view of such mentality, it is only natural that they have wrong conceptions in regard to prohibition. Even those who do not make almost a religious cult of their wine worship, and do not regard wine as indispensable, are so accustomed to the hesitating policy of our public authorities that they are not a little surprised at the heroic decision of the American people. They are therefore ready to believe the newspapers that tell them that prohibition in America meets with great resistance and brings about disastrous results.

### The Future Problems of Chemotherapy

At the close of his term as president of the Academy of Medicine, Professor Béhal delivered an address on the rôle of chemistry and the part it should play in therapeutics. He holds that the time has arrived when chemistry should be applied to the study of organotherapeutic products, vitamins, and even serums. Practitioners cannot give too much attention to the use of organotherapeutic medicaments. It is true that it is difficult to determine the dosage, for the reason that the active principles that the medicaments contain are not fully known and understood, which gives rise to much uncertainty in their use. Being derived from the organs of different animals, sometimes not belonging to the same species, their therapeutic activity may be highly variable. It should be noted that some organs contain a reserve supply of the active principle, and that others, on the contrary, contain only a very small amount, which is generated, from time to time, as needs require. Certain glands possess multiple functions depending on the diverse products that they elaborate, and it would be possible for one of these secretions to be, therapeutically, an antagonist of another produced by the same gland. In some glands the quantity of active products that they contain seems to vary greatly. Thus, Kendall has discovered that the quantity of thyroxin in the thyroid gland of the hog, during the months of January, February and March, is so slight that practically none can be extracted.

Viewing the matter from another angle, since the effects of some organotherapeutic products cannot be perceived except after some time has elapsed, it seems advisable to consider whether troubles may not develop that will escape observation. Has not the administration of thyroid gland, which produces such marvelous results in myxedema, sometimes occasioned grave accidents?

Béhal has no intention of advising that the use of these products be discontinued, for some of them have an incontestable value; but he holds that there is urgent need of trying to establish the correct dosage of their active components. It would be better still to isolate them and reproduce them synthetically. Isolation does not seem impossible, for most of these products cannot be very complicated, to judge of them after their analogy with the definite active principles of plants. The greater the number of plants of a given family, or, the greater the number of different families, in which a given product may be found, the less complex its chemical structure is, and one is entitled, with some appearance of reason, to apply the same principle to products produced synthetically by animal cells. Substances of complex chemical composition are found in only one species, one genus or one family. Then, as the number of carbon atoms in substances decreases, we find them in several families, and, finally, if their composition is very simple, they are found in



a very large number of families. Quinin, which contains twenty carbon atoms, is produced only by certain species of *Cinchona*.

Morphin, which contains seventeen carbon atoms, is found only in *Papaver somniferum-album*. Atropin is somewhat less complex, and we find it in several genera of the *Solanaceae* family: *Atropa*, *Datura*, *Scopolia*.

Tyrosin, which has nine carbon atoms, exists in a large number of plants belonging to widely different families. From this we may conclude that, if the same secretion is produced by animals belonging to different species, it is probable that the active substance is not of great molecular complexity. We have already two examples that confirm this view: epinephrin, produced by the suprarenal capsules, and thyroxin, derived from the thyroid glands of mammals.

The same conception is applicable also to vitamins, which are derived from very diverse plants, including brewers' yeast, and to animals that are considered incapable of producing them. Béhal cites a fact that shows how much the light of chemistry is needed to elucidate the question of vitamins, which is still so obscure. G. Bertrand has shown recently that an exceedingly minute quantity of zinc is necessary to assure the existence of mice, and that a still larger quantity is indispensable for gestation and parturition. If it were not known that the ingested substance is zinc, it would doubtless be regarded as a vitamin. The solution of these various problems cannot be found except through the collaboration of physiologists and chemists. The former must guide the latter in the extraction of the active substances.

#### MADRID

(From Our Regular Correspondent)

Jan. 12, 1923.

#### Pasteur Centennial

On December 17, a meeting in honor of Pasteur was held in the Atheneum. Sr. Salvatella, secretary of education, Professor Carracido, president of the Central University, Dr. Gimeno, professor of medicine, former cabinet member and Spanish representative in the League of Nations, Dr. Maranon, physician in the General Hospital and vice president of the Atheneum, the French ambassador to Spain, and Professor Pettit, representing the Pasteur Institute of Paris, were present. Dr. Maranon read an address by Dr. Turro of Barcelona, and other addresses were delivered by Drs. Carracido, Gimeno and Pettit, the last in French. Dr. Pettit made the announcement, received with applause, that the Pasteur Institute had confirmed Dr. Ferran's conclusions as to the saprophytic etiology of tuberculosis, which is a modification of Koch's classical concept. Physicians, who had hitherto paid no attention to Ferran's views, now learned in French what they had overlooked in Spanish. This is not an exceptional occurrence in this country, where we discovered Cajal when his works were translated into Spanish from German.

#### Leprosy in Spain

Spanish sanitary authorities have had to overcome the indifference not only of politicians, but even of physicians. Spanish apathy is difficult to overcome in sanitary campaigns, and the few physicians who struggle with congress to improve public health conditions are faced with the ignorance of politicians and the distrust of physicians. Dr. Pulido failed to secure from Congress an appropriation of 100,000 pesetas (\$16,000) for the campaign against leprosy. Dr. Fernandez Criado, secretary of the Spanish Dermatologic Society, has therefore now published facts as to the prevalence of the disease in Spain. He stated that, last year, he saw two new cases of leprosy in Madrid. One was a boy, aged 19, who has lived in a suburb of Madrid since he was 2 years old,

and who works for a street paving company. The second was a well-to-do woman, aged 50, who has lived in Madrid more than six years. Neither patient had been in contact with other cases. Four years before, Criado had diagnosed leprosy in another patient, aged 26, who claimed that she had had no previous disease, except a cold in the head, during the preceding four years. She was employed as a nurse, and before that had been wet nurse in another family. She came from Pastrana, Guadalajara, where there are other leper families. The laboratory confirmed the diagnosis, and the patient disappeared as soon as she learned the nature of her illness. A few months afterward, he came across her in the street.

In Spain, leprosy is either increasing, or diagnosis has improved. The authoritative book on the disease here is Dr. Benito Hernando's "La Lepra en Granada." In addition, there are several papers by Dr. Azua and a contribution from the late Dr. Garcia del Mazo, which gives the first statistics on leprosy in Spain. Garcia del Mazo compiled 898 cases, which Azua increased to 987, and there are probably over 1,000. No province is free. The colonial wars of a quarter of a century ago and the 1900-1910 immigration of indigents from Latin America caused the appearance of a number of foci in the provinces of Salamanca, Zamora and Leon. This American immigration and the yearly African migration to and from Valencia, Alicante, Murcia and Almeria, to supply farm labor, are responsible for the increase.

The people object to compulsory notification and isolation, the importance of which is appreciated only by physicians. Criado cited the cases of lepers who accept seclusion in San Juan de Dios Hospital at Madrid only when they are absolutely unable to pursue their calling. He mentioned two cases; one patient was suffering from leprous pemphigus and extensive scabious ulcers on the legs, which were dressed with dirty rags; the dressing of the sores was alternated with the sale of fish. The other case was in a pedler. Some time ago, a newspaper described a "strike" of more than twenty lepers who ran away from the hospital at Seville as a protest against the poor quality of the food. In Almeria, the lepers have the run of the streets; some beg alms, others, better off, visit saloons, and return at night to the hospital, where they sleep in the mortuary. Even Goya has no more gruesome picture. In May, 1912, when Criado was in charge of the skin clinic of the Madrid medical school, he saw a patient, from Toledo, aged 45, who appeared strong and healthy. A confluent tuberculoleprous rash covered both thighs. The diagnosis was confirmed by Dr. Azua. There were no cases of leprosy in the patient's native town, and he had probably been infected at one of the Andalusian communities, which he visited regularly as a buyer of cereals and oils, and which are noted as leprous foci. The eruption had begun two months before, and he was treated by a local physician, who prescribed cathartics, bloodletting and restriction of diet. As the tubercles did not vanish, arsenical injections were advised; but they were not given, as the patient went on to Madrid. The local physician was informed of the diagnosis in order to prevent further spread of the disease. The local board of health instructed the patient to stay away from all public places. A pit was dug in a condemned cemetery where the leper was supposed personally to bury all food leavings, wash and toilet water, and all house refuse. The news soon spread in the small town, and the baker, dairyman and butcher rejected his custom; the maid left, the barber refused to wait on him, and when the poor fellow went out, his neighbors ran away. Eight days afterward he came in tears to ask for a certificate of freedom from leprosy, which he thought might solve the problem. He had even considered suicide, and was kept from it only



by a sense of duty to his wife, who was an invalid, helpless with chronic rheumatism. He solved the problem by disappearing overnight, leaving no clue to his next abode.

In a previous address, Dr. Juarros complained that he had lost track of a soldier who had been discharged for leprosy. Criado reported the employment of a leper in the postal service and the fact that in 1912 an attendant in the Ocana penitentiary had leprosy lesions on both legs. To avoid such happenings, he pleaded for better teaching in dermatology, the creation of modern leprosariums, the issuance of proper regulations as to isolation and prevention for patients who prefer to stay at home, and, finally, the redrawing of the leprosy map of Spain.

### BUDAPEST

(From Our Regular Correspondent)

Jan. 17, 1923.

#### Meeting of the Medical Society of Oebreczen

At the recent meeting of the Medical Society of Oebreczen, Dr. Kenezi read a paper on obesity from the point of view of etiology. Most commonly the condition is due either to overfeeding or to lack of exercise, and frequently these two causes are combined. There is another group of cases in which obesity develops in spite of the fact that food and exercise are taken in proper amounts. This has been termed constitutional obesity. After prolonged discussion and study, the conclusion has been reached that in such cases the oxidation power of the organism is deficient. This, as stated years ago by Professor Noorden, bears a direct relationship to thyroid function. Temporary changes in this gland may raise or depress the power of oxidation. Dr. Kenezi therefore designated constitutional obesity "thyreogenic obesity," and classified the types as: (a) primary thyreogenic obesity, dependent on actual changes, such as atrophy, degeneration and functional weakness in the thyroid, and (b) secondary thyreogenic obesity, due to functional anomalies of the thyroid which depend on the action of other organs, such as the pancreas, hypophysis, suprarenals, thymus, and pineal gland. These questions not only have theoretical interest, but also possess important bearings on therapeutics; for anomalies of metabolism known as obesity can be treated rightly only when the origin of the anomaly has been correctly diagnosed.

#### HYSTERIA AND PSYCHANALYSIS

Dr. Paul Grosz objected to the present tendency of many practitioners to treat without judgment all cases of hysteria by psychanalysis. He criticized Freud's theory of hysteria, with its many additions. According to Freud, Steckel and Ferenczi, the disease is always caused by psychic trauma, which subconsciously continues the neurosis until it is brought into consciousness, when it is cured. Ferenczi has further maintained that the psychic trauma is always of a sexual nature, and agrees with his teacher, Freud, that a "lesion" of this description is at the basis of all neuroses and that there is no neurosis without disturbance of sexual life. Dr. Grosz pointed out the grave risks of a course of psychoanalytic treatment, which often extends over months. He emphasized the uncritical nature of this psychologic or sexual cure as applied to all neuroses.

#### THE CLINICAL AND MEDICOLEGAL ASPECTS OF IMBECILITY

Dr. Strehlinger, who studied the clinical and medicolegal aspects of imbecility in the clinic of Professor Sommer in Giessen, concluded that: 1. Idiots in institutions resemble the inmates of reform schools in many bodily and mental characteristics. 2. It is therefore desirable that there should be a uniform method of investigating all such cases. 3. In studying feeble-mindedness, a great many psychologic and

psychophysical methods might be usefully applied for the purpose of obtaining a better insight into the mental processes in addition to those outlined in the examination blanks. 4. The improved system of classification was valuable medically, psychologically and educationally; moreover, it led to better cooperation between the medical and the educational authorities. 5. The earlier correct inferences are drawn as to the mental capacity and suitability for institutional treatment, the more positively can a case be definitely grouped in accordance with clinical and bodily peculiarities. 6. In the investigation of juvenile delinquency it must be remembered that some inmates of reform schools are obviously imbecile; if these are eliminated, the ordinary methods of investigation often fail to detect the defect; on the other hand, in cases with apparently normal mentality, more particularly as regards intellectual capacity, there are likely to be hysterical and epileptoid manifestations, as well as evidence of moral defect. 7. Possession by a juvenile offender of mental capacity sufficient to comprehend the culpability of an act is a bad sign. 8. When juvenile offenders were of apparently normal mental capacity, the investigation of environmental and inherited characters, and of family circumstances, often led to the recognition of external or internal causes for the delinquency. 9. Analysis of the external or internal factors will probably tend more and more to prove that juvenile delinquency, both in its individual and in its social relations, must be regarded as due to disease. 10. For the practical purposes required in judicial decisions and in questions connected with administrative protection of imbeciles, the particular nature of the defect must be considered first, because the different types exhibit various degrees of educability and unfitness for social existence.

#### ARTERIOSCLEROTIC NEURASTHENIA

Dr. Brokes said that arteriosclerotic neurasthenia is common, especially between the ages of 50 and 55; it is characterized by anxiety and depression (in association with cardiac symptoms), insomnia, heaviness and numbness of the head, fatigability and incapacity for work. On the mental side it is distinguished by apathy, ill humor and irritability. From this stage the transition is gradual to arteriosclerotic dementia, in which the memory is greatly impaired, all psychic processes are slower, the patient becomes stupid, his opinions and judgments are mechanical and elementary, his imagination atrophies, and his will-power diminishes.

### BERLIN

(From Our Regular Correspondent)

Jan. 20, 1923.

#### International Conference on Standardization of Serums

In December, 1921, an international health conference was held in London, under the auspices of the League of Nations, to discuss the standardization of serums and serum reactions; in December, 1922, a second conference for the same purpose was held in the Pasteur Institute, Paris, at the suggestion and under the chairmanship of Professor Madsen, president of the health committee of the League of Nations. Professor Neufeld, director of the Robert Koch Institute for Infectious Diseases, Berlin, who, with Wassermann, Kolle and Sachs, took part in the conference, gives a report of the proceedings in the *Deutsche medizinische Wochenschrift*, Jan. 5, 1923. The transactions were carried on by subcommittees. The first dealt with the standardization of tetanus and diphtheria antitoxins. These investigations are nearly complete, and it is expected that an agreement will soon be reached as to a generally acceptable method of titration and standardization. Heretofore, not only have other countries used standards (immunity units) different from those of Germany, but there have been fundamental differences in titration.



For example, in France, not only is Ehrlich's procedure used for the titration of diphtheria serum (combinations of toxin and antitoxin), but the effect on living diphtheria cultures is also tested.

A second subcommittee took up the question of dysentery serum, which, with us, is not required to be tested. It is certain that many unfavorable observations on dysentery serum in Germany have been due largely to the use of defective serums, and that results would be improved by a standard titration approved by the state public health service. Investigations of the antitoxin test on rabbits and mice are still being carried on.

The largest subcommittee, under the chairmanship of Bordet and Wassermann, discussed the serodiagnosis of syphilis, and several reports were read on comparisons between the original method of complement fixation, and the flocculation or precipitation methods of Sachs-Georgi, Meinicke and Dreyer. These investigations are to be continued in certain definite directions by one laboratory of each of the several countries. In Germany there have been many complaints of evils arising from the serodiagnosis of syphilis, and, in consequence, an attempt was begun last year to prevent as far as possible the injuries and untoward effects that may arise from the improper application of this delicate and practically important procedure, by adopting an officially recognized and uniform method of application of the Wassermann test. This regulation has encountered considerable opposition, especially from directors of laboratories, and it is hoped that the investigations of the health committee of the League of Nations will be of great value in preparing a revision of existing regulations, which will be necessary before long.

Two other subcommittees are engaged in investigation of the antipneumococcus and the antimeningococcus serums, respectively. With regard to the former, the subcommittee expressed the opinion that an opinion as to their efficacy would at this time be premature; however, we possess reliable methods of titration, and if antipneumococcus serums of high value according to these standards are tested in pneumonia cases which are not too far advanced, we may expect, within a reasonable time, a final and reliable judgment on the value of this form of serotherapy.

With the antimeningococcus serums, serotherapy is likewise much complicated by the fact that there are several different types of causative agent, and corresponding variations in antibodies. In Germany the state has already established standards for meningococcus serum. These standards, however, give no consideration to the different serologic types, and there is therefore need for revision. Cultures and serums of the various types of organisms are being exchanged by the laboratories conducting the investigation, and the question as to what antibodies (bacteriotropins, antiendotoxins, agglutinins, antibodies causing complement fixation) shall be used to establish the titer of a given serum is being studied according to definite standards set up by the committee. We should await the results of these investigations before we revise the official standards in Germany. This is an exceedingly important, practical question; for, in the opinion of Professor Neufeld, the antimeningococcus serum is possibly the most effective therapeutic serum yet used in the treatment of human diseases.

#### Amplified Audibility of Heart Sounds

Refinements in the technic of electric high tension currents have served as a stimulus to physicians to attack the problem of utilizing these currents for the clearer elucidation of the heart sounds. In an address before the Medizinische Gesellschaft recently, Dr. Leo Jacobsohn explained his experiments in this direction. He uses a type of vacuum tube such as

is employed in wireless telegraphy for the amplification of impulses, and which burns like an incandescent lamp. With a comparatively small apparatus, sound units can be amplified a thousandfold or more. For instance, the ticking of a watch can be heard from the farthest corner of a large hall. Dr. Jacobsohn places a microphone on the chest, and, with his apparatus, every one in the room can hear the heart sounds distinctly. They are not as yet perfectly clear, but this was true for the first impulses transmitted by the first telephone or the first phonograph; but even now, the volume of the separate sounds, their rhythm and their frequency can be presented simultaneously to a good-sized audience. In the administration of anesthetics, an assistant to watch the condition of the pulse can be dispensed with, and in dealing with a difficult obstetric case the physician can be informed by a bell signal whether the fetal heart is still beating.

#### Death of Johannes Orth

Professor Orth, for many years director of the Berlin Pathologic Institute, died recently just one day before his seventy-sixth birthday. During recent years, he had suffered much from gallstones, and a few years ago Bier removed the gallbladder. In spite of this operation, he had frequent attacks of fever, but the immediate cause of death was given as cardiac insufficiency. He resigned his position as director soon after his seventieth birthday. He was the successor of Virchow, and he performed the duties of the post in the spirit of his great teacher. Orth distinguished himself, as did Virchow, by a very strong sense of responsibility to the scientific world, and exhibited painful exactitude in his scientific investigations and publications. Only the most complete conviction of the reliability of his findings could ever induce him to bring his researches on a given problem to a close and to make his results known to his fellow scientists. In his entire personality, as well as in his scientific work, he was upright and influenced in his opinions and acts solely by love of truth and not by personal considerations. He therefore enjoyed the esteem of all men of science. In addition, he won the admiration of those who did not allow themselves to be affected by his gruff outward manner, but penetrated the rough exterior and learned to know the kind heart that lay beneath. His scientific researches extended to most branches of pathologic anatomy and pathology. In recent years he devoted himself more especially to research on tuberculosis and cancer. In his studies on tuberculosis he opposed Robert Koch's belief in the slight importance of bovine tuberculosis. Probably the last article he wrote was on tuberculosis, and appeared in the *Deutsche medizinische Wochenschrift*, Oct. 27, 1922, p. 1437, under the title, "The Problem of the Unity or the Duality of Tuberculous Processes in the Lung." He devoted much attention to infectious diseases. His textbooks have been widely used, especially "Pathologisch-anatomische Diagnostik," which appeared first in 1876 and was followed by many subsequent editions. In this work particularly, we find evidence of Orth's great capacity for scientific instruction and delineation. In exceedingly clear and concise form, he gives only the established facts of pathologic diagnosis. I still remember with gratitude the great benefit that I derived as a student from this book. His large textbook on "Spezielle pathologische Anatomie" was unfortunately not completed. Orth was the first pathologist to be admitted to the Prussian Academy of Sciences. Like Virchow, he served for many years as president of the Berliner medizinische Gesellschaft, and after withdrawal from active participation, two years ago, he was appointed "president emeritus." Among other official positions, he held the office of vice president of the Robert Koch Foundation for the Combating of Tuberculosis.



## Marriages

THEODORE L. HAZARD, Iowa City, Iowa, to Miss Nellie Maude Black of Drummond, Okla., at Kansas City, Mo., January 22.

FORREST NELSON ANDERSON, Lawrence, Kan., to Miss Anna E. Spradling of Kansas City, Mo., January 20.

ALFRED E. P. ROCKWELL, Worcester, Mass., to DR. KATHERINE FRENCH of Framingham, January 15.

HERBERT A. BRADY to Miss Elizabeth M. Goble, both of Grand Rapids, Mich., January 10.

ELDO HORACE M. CLAUSER, Muncie, Ind., to Miss Cora Benson of Westfield, January 19.

EDWARD WALTER ST. PIERRE to Miss Marjorie McGuirc, both of Portland, Ore., December 16.

LEON BLOCK, Denver, to Miss Bertha May Levy of Ocean Springs, Miss., January 7.

CARROLL LEE SMITH to Miss Lucille Barrett, both of Spokane, Wash., January 27.

WILLIAM F. BECKER to Miss Bertha Dudey, both of Milwaukee, December 23.

A. R. SPINDLER to Miss Ethel Blanche Hoyt, both of Akron, Ohio, January 19.

L. B. WARD, Shaw, Miss., to Miss Vivian McCool of Greenville, January 5.

## Deaths

Caroline M. Purnell ☉ Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1887; member of the Obstetrical Society of Philadelphia; associate professor of gynecology at her alma mater; special commissioner for the American Women's Hospitals in France during the World War; gynecologist to the Woman's Hospital, the West Philadelphia Hospital for Women, the Friends' Hospital, the Norristown State Hospital for Insane, Norristown, and the State Hospital for Chronic Insane, Wernersville; aged 57; died, February 3.

Clinton Wayne Kelly, Louisville, Ky.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1867; emeritus professor of anatomy at the University of Louisville Medical Department, Louisville; Civil War veteran; practitioner in Louisville for more than a half a century; aged 78; died, January 26, from pneumonia.

Luman Moody Giffin ☉ Boulder, Colo.; Rush Medical College, Chicago, 1875; emeritus professor of surgery and dean from 1883-1911 of the University of Colorado School of Medicine; at one time superintendent of the University Hospital (Community Hospital); aged 72; died, January 23, from cerebral hemorrhage.

David William McPherson, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1895; lieutenant-colonel, Canadian Army Medical Corps; served during the World War in France and England; aged 51; died recently, at the Wellesley Hospital, from bronchopneumonia.

Frank Green Simmons, Richmond, Va.; Vanderbilt University Medical Department, Nashville, Tenn., 1890; member of the Medical Society of Virginia; formerly instructor of pediatrics at the Medical College of Virginia, Richmond; aged 53; died, January 27, following a long illness.

Anna R. Osmond ☉ Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1897; formerly on the staff of the Woman's Hospital of Philadelphia, and for twenty years physician to the woman's department of the Philadelphia County Prison; aged 65; died, February 1.

Walter Guy Law, Ashland, Wis.; Rush Medical College, Chicago, 1896; member of the State Medical Society of Wisconsin; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 50; died suddenly in his office, January 25, from cerebral hemorrhage.

Charles Victor Fisher, Klamath Falls, Ore.; Willamette University Medical Department, Salem, 1898; member of the Oregon State Medical Association and the Pacific Coast Oto-Ophthalmological Society; aged 52; died, January 19, from carcinoma of the prostate.

Oscar George Cowley, Saginaw, Mich.; Detroit College of Medicine and Surgery, Detroit, 1904; member of the Michigan State Medical Association; aged 41; on the staff of the Woman's Hospital and the Saginaw General Hospital; died, January 30, from heart disease.

Myron Edwin Lane, Chicago; College of Physicians and Surgeons, Chicago, 1887; formerly on the staff of St. Joseph's Hospital, New York City; member of staff of the Chicago Municipal Tuberculosis Sanitarium; aged 60; died, January 17, from heart disease.

Daniel Hopkinson ☉ Milwaukee, Wis.; Milwaukee Medical College, 1901; member of the American Society of Clinical Pathologists; professor of pathology at Marquette University School of Medicine; state pathologist; aged 46; died suddenly, February 1.

Alexander Horton Travis ☉ New York; Medical Department of Columbia College, New York, 1887; formerly on the staff of St. Joseph's Hospital for Consumptives; aged 60; died, February 1, from cerebral hemorrhage.

Frederick A. Dudley, King Ferry, N. Y.; Yale University School of Medicine, New Haven, Conn., 1862; formerly member of the state legislature; Civil War veteran; aged 81; died, January 14, from senility.

Elmer Harley, Seeley, Calif.; University of Colorado School of Medicine, Denver, 1914; member of the Medical Society of the State of California; aged 46; died, January 28, from pulmonary tuberculosis.

George T. Shower, Baltimore; Hahnemann Medical College of Philadelphia, 1882; formerly president of the state homeopathic society; Civil War veteran; aged 81; died, February 2, from senility.

Griffy Benjamin Ward, Fairbank, Iowa; University of Michigan Medical School, Ann Arbor, 1880; member of the Iowa State Medical Society; aged 65; died, January 27, from heart disease.

John Edward King, Eldora, Iowa; Hahnemann Medical College and Hospital of Chicago, 1867; former president of the state homeopathic association; aged 97; died, January 23, from senility.

William Oliver Skinner, Griggsville, Ill.; University of Pennsylvania School of Medicine, Philadelphia, 1874; member of the Illinois State Medical Society; aged 74; died, January 26.

Willard Shepard Everett, Newton, Mass.; Medical School of Harvard University, Boston, 1864; member of the Massachusetts Medical Society; aged 91; died, January 31, from senility.

John Henry McMullan, Edenton, N. C.; University of Maryland School of Medicine, Baltimore, 1876; aged 73; died, December 10, at Norfolk, Va., following an appendectomy.

Edwin DeMoss Lunn, Houston, Texas; Medical Department University of Louisville, Louisville, Ky., 1890; aged 51; died suddenly, January 20, from carbolic acid poisoning.

G. C. Chandler, Shreveport, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1888; for ten years city health officer; aged 57; died, January 25.

Edwin Elvin Deal, Winchester, Mass.; Medical School of Harvard University, Boston, 1890; member of the Massachusetts Medical Society; aged 57; died, January 21.

Frank Edwin Moyer, Montpelier, Ind.; University of Michigan Medical School, Ann Arbor, 1894; aged 59; died, January 23, from heart disease and arteriosclerosis.

Frederick D. Porter, Chicago; Detroit Medical College, Detroit, 1877; member of the Illinois State Medical Society; aged 72; died, February 4, from heart disease.

James M. McCallum, Leeds, S. C.; Medical College of the State of South Carolina, Charleston, 1859; Confederate veteran; aged 87; died, January 21, from senility.

Walter Alexander Rose ☉ Rochester, Pa.; University of Buffalo (N. Y.) Department of Medicine, 1867; aged 80; died, January 1, from bronchopneumonia.

Donald W. Campbell, Atchison, Kan.; University of Michigan Medical School, Ann Arbor, 1880; aged 60; died suddenly, January 20, from heart disease.

Henry Gerkey Pyle, Long Beach, Calif.; Cleveland University of Medicine and Surgery, Cleveland, 1894; aged 56; died, January 15, from carcinoma.



**James Eneu Loughlin**, Norwood, Station, Pa.; Jefferson Medical College, Philadelphia, 1868; aged 76; died, January 27, from cerebral hemorrhage.

**Harrison Pettit Huntsinger**, Pinckneyville, Ill.; Rush Medical College, Chicago, 1879; Civil War veteran; aged 80; died, January 22, from senility.

**Stanley P. Newsham**, Westville, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1869; aged 73; died, January 27, at Camden.

**Joseph Palmer Johnson**, Lynn Haven, Fla.; Rush Medical College, Chicago, 1876; Civil War veteran; aged 84; died, December 9, from senility.

**Irving Smith Coburn** ☉ Milton, Vt.; Baltimore Medical College, Baltimore, 1901; state senator, aged 48; died, January 20, from septicemia.

**Charles McKenna**, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1865; aged 78; died, January 8, from senility.

**Scott Harrison Abbott**, McKinley, Texas; Eclectic Medical Institute, Cincinnati, 1883; aged 64; died, December 22, from chronic nephritis.

**Charles P. Brightwell**, Maxeys, Ga.; University of Georgia Medical Department, Augusta, 1899; aged 47; died, December 25, from influenza.

**Valentine Kocinski**, Cleveland; Warsaw Medical College, Warsaw, Russia, 1887; aged 65; died, January 22, from bronchopneumonia.

**Fred Clinton Thornley**, Newark, N. J.; Jefferson Medical College of Philadelphia, 1888; aged 57; died, January 24, from mastoiditis.

**J. H. Forest**, Murray, Ky.; Medical Department University of Tennessee, Memphis, 1896; aged 68; died, December 11, from pneumonia.

**Howard R. Hopkins**, Hillsboro, Md.; Jefferson Medical College of Philadelphia, 1882; aged 70; died, January 25, from influenza.

**William Henry Martin**, Poindexter, Ky.; Jefferson Medical College of Philadelphia, 1851; aged 92; died, January 23, from senility.

**Edwin H. Hayes**, Chicago; Hahnemann Medical College and Hospital of Chicago, 1884; aged 72; died, February 11, from pneumonia.

**James A. Lyons**, Appleton, Wis.; College of Physicians and Surgeons, Chicago, 1894; aged 56; died, January 19, from heart disease.

**George Edward Potter**, Irvington, N. J.; Eclectic Medical Institute, Cincinnati, 1880; aged 67; died, January 23, from encephalitis.

**Samuel Finley Smith** ☉ Indian Orchard, Mass.; University of Michigan Medical School, Ann Arbor, 1873; aged 75; died, January 22.

**J. Epps Pegram**, Tiplersville, Miss. (licensed, years of practice); aged 72; died, December 24, from intestinal obstruction.

**Eugene Henry Howard** ☉ Pittsfield, Mass.; Medical School of Harvard University, Boston, 1898; aged 49; died, January 19.

**Calvin F. Hess** ☉ Madison, Wis.; Rush Medical College, Chicago, 1894; aged 57; died, January 2, at St. Petersburg, Fla.

**William Wade Ray**, Springfield, Ky.; Bellevue Hospital Medical College, New York, 1877; aged 70; died, January 18.

**Charles A. Stammel**, Cincinnati; Medical College of Ohio, Cincinnati, 1896; aged 63; died, January 29, from paralysis.

**Theodore Cole**, Lansing, Mich.; University of Michigan Medical School, Ann Arbor, 1869; aged 81; died, December 19.

**J. R. Howell**, Florence, Ala.; Memphis Hospital Medical College, Memphis, Tenn., 1888; aged 71; died, January 24.

**Joseph C. Hughes**, Ottawa, Kan.; Starling Medical College, Columbus, Ohio, 1869; aged 79; died, January 24.

**Samuel E. Reynolds**, Clay Center, Kan.; Medical College of Ohio, Cincinnati, 1873; aged 77; died, January 22.

**John William Huffman**, Prescott, Iowa; Medical College of Ohio, Cincinnati, 1879; aged 72; died, January 15.

**Jacob D. Graybill**, New Orleans; Pulte Medical College, Cincinnati, 1878; aged 74; died, February 1.

**Isaac L. Davis**, Walling, Tenn. (licensed, Tennessee, 1889); aged 74; died, January 14, from senility.

## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

### BROWN'S NEW CONSUMPTION REMEDY

The Post Office Department Effectively Protects the Public from Another Fraudulent Consumption Cure

On Feb. 2, 1923, Postmaster General Work issued a fraud order against D. H. Brown, M.D., of Jacksonville and St. Augustine, Fla., and Brown's Magnolia Remedy Company. Brown, who is a negro, was, according to our records, born in 1868 and graduated by the Meharry Medical College at Nashville, Tenn., in 1898, receiving a Florida license in 1899. For some time he has been advertising an alleged consumption cure under the name "Dr. Brown's New Consumption Remedy." He has made his appeal especially to those unfortunate members of his own race who are afflicted with tuberculosis.

#### BROWN ADMITTED FRAUD IN 1917

As long ago as November, 1916, the federal authorities got after Brown under the federal Food and Drugs Act. The officials of the Department of Agriculture charged that the claims that this preparation was a remedy for consumption, pneumonia, la grippe and all diseases of the lungs and bronchial tubes were false and fraudulent. In December, 1917, Brown pleaded guilty and was fined a trivial \$50 and costs. The case was reported in this department of THE JOURNAL, Feb. 22, 1919. Presumably after his brush with the Food and Drugs Act Brown ceased making his lying and fraudulent claims on the trade package but continued making them in newspaper advertisements and in circulars that were sent to those who answered these advertisements. The scope of the federal Food and Drugs Act, unfortunately, does not extend beyond the claims made on or in the trade package.

#### THE POST-OFFICE ACTS

Fortunately for the public, the Post-Office Department was able to reach Brown and in October, 1922, charges were filed against him and Brown was called on to show cause on or before Nov. 9, 1922, why a fraud order should not be issued against the Magnolia Remedy Company. Through his attorney, Cromwell Gibbons of Jacksonville, Brown asked that the hearing in the case be postponed until after November 21; this postponement was agreed to and November 23 set as the date for the hearing.

At that time Mr. Gibbons appeared at Washington and, before any evidence was offered, indicated that his client would be perfectly willing to eliminate those features of his business that were objectionable. The attorneys for the government replied that if Brown would cease making claims for his preparation to the effect that it would cure consumption, bronchitis, pneumonia, la grippe and influenza and would do no more than represent that the nostrum had expectorant and alterative value in the treatment of colds, coughs, etc., the matter might be disposed of. On this basis the hearing was adjourned in order that Brown might submit revised literature on or before Dec. 11, 1922. An extension of time was again asked by Brown to Jan. 2, 1923. Just before this date Brown's attorney forwarded to the Post Office Department a statement by Brown in which the man attempted to justify the fraudulent claims made in his literature. Brown was told, through his attorney, that unless he filed with the department on or before January 22, his revised literature and advertising matter, the case would again be taken up. Another postponement was made at Brown's request until January 24 when the matter came up for hearing.

#### THE INEVITABLE TESTIMONIALS

A sample of the preparation that had been sold through the mails was filed in evidence by the government, together



with a report by Dr. L. F. Kebler, Chief of the Drug Division, Bureau of Chemistry, U. S. Department of Agriculture. In addition to Dr. Kebler's testimony, William F. Kunke, the chemist who analyzed the preparation, testified on behalf of the government. Brown's attorney offered the usual batch of testimonials from persons claiming to have been benefited by taking the preparation and the attorney also examined Dr. Kebler on certain alleged medical authorities dealing with the use of creosote in the treatment of tuberculosis. In his answer to the government's charge, Brown had stated that his nostrum consisted principally of "a compound of creosote, Donovan's Solution and extract of malt." The federal chemists testified that the preparation had been especially tested for arsenic and mercury, the two drugs that are in Donovan's Solution (Liquor Arseni et Hydrargyri Iodidi) and it was definitely established that those drugs were not present. The chemists found that the principal ingredients of Brown's nostrum were creosote and maltose.

The government produced statements from a number of well-known physicians, specialists in the treatment of tuberculosis, regarding the uses and limitations of creosote in the treatment of that disease. The physicians were unanimous in declaring that creosote is not in any sense a cure for tuberculosis and that this fact is universally accepted by those who specialize in the treatment of this disease. Brown, in his defense, quoted from an alleged medical authority to justify his claims. The quotations were taken from an old book on materia medica, the last edition of which was issued more than a quarter of a century ago. Even this book did not claim that creosote was a cure for tuberculosis.

In view of all the evidence, the Hon. H. J. Donnelly, Acting Solicitor of the Post Office Department, recommended in his memorandum to the Postmaster General that a fraud order be issued against the Magnolia Remedy Company and also against D. H. Brown. The order was issued.

## Correspondence

### "THE CARE AND FEEDING OF INFANTS"

*To the Editor:*—In your statistics relating to breast-fed and bottle-fed babies, I see nothing definite with regard to mothers. Through long years of experience I have found that very few mothers who are in good health fail to nurse their babies. Then, in giving statistics of deaths from bottle feeding and breast feeding, why not take into consideration the fact that nonstrenuous mothers beget nonstrenuous babies, and that this fact may cause the difference in the statistical death rate—weakness?

J. J. LEISER, M.D., Lakebay, Wash.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### MADURA FOOT

*To the Editor:*—I should like to get all available information concerning mycetoma (Madura foot). I should like to know whether any cases of this disease have been reported in this country. I have a faint idea that some cases were reported from Texas.

A. F. C., Florida.

ANSWER.—Two cases of mycetoma were reported recently from Texas by Pagenstecher (*THE JOURNAL*, May 6, 1922, p. 1363). In his article on Madura foot in America (*Ann. Surg.* 66:496 [Oct.] 1917), Winslow stated that until the publication of his paper, there had been reported seven cases of this condition in the United States and Canada. Three had occurred among Mexicans living in Texas; one in a French-Canadian living in Canada; one in a young man born in Iowa; one in a girl living in Kansas, and one in an Italian who had been in this country for several years. In addition to Winslow's and Pagenstecher's papers and the

standard textbooks on tropical diseases, the following references may be consulted:

- Adami and Kirkpatrick: *Tr. Am. Phys.*, 1895.  
Hyde, Senn and Bishop: *J. Cutan. & Gen.-Urin. Dis.* 45:1, 1896.  
Sutton, R. L.: Mycetoma in America, *THE JOURNAL*, May 3, 1913, p. 1339.  
Burres, W. T.: Madura Foot in Western Panama, *Am. J. Trop. Dis.* 3:611 (May) 1916.  
Solari, E. F.: Madura Foot in Argentina, *Semana Méd.* 24:573 (Nov. 22) 1917; abstr. *THE JOURNAL*, March 30, 1918, p. 967.  
Navarro, Horatio: Madura Foot, Report of a Case, *THE JOURNAL*, Sept. 21, 1918, p. 967.  
Díaz, Albertini and Desvernine: Madura Foot in Cuba, report to the Third Pan American Congress, 1901, *Sanidad y Beneficencia*, March-April, 1918, p. 319; abstr. *THE JOURNAL*, March 15, 1919, p. 817.  
Welchman, W., and Pirie, J. H. H.: South African Case of Mycetoma, *M. J. South Africa* 17:6 (Aug.) 1921; abstr. *THE JOURNAL*, Oct. 15, 1921, p. 1288.

A letter was published by Dr. Mark F. Boyd of Galveston, Texas, in *THE JOURNAL*, Nov. 6, 1920, p. 1286, requesting that he be informed of unreported cases of mycetoma, as he was compiling data on the subject.

### DEATH FROM ELECTRIC SHOCK FROM HOUSE CURRENT

*To the Editor:*—I was called recently with Dr. F. W. E. Henkel of this place to see a man, aged 53, height 5 feet 10 inches, weight about 180 pounds, who was reported to have received an electric shock. On arrival we found that he had been dead for a number of minutes, and all efforts at resuscitation failed. He had been sorting apples in an outside cellar, and the floor, and his feet and clothes were wet. He clutched an electric lamp in his hands which were held tightly on his chest. No marks were found on the body. The lamp was a 75 Watt Type C Mazda, attached to the ceiling by a long No. 18 lamp cord. The fuses at the meter were not of more than 30 amperes. The lamp was still burning when the first man reached the spot, and was not blackened. The fuses were intact. The current is brought to the ranch at 2,300 volts, and transformed to 110 volts for lighting purposes. It is alternating, 60 cycle. The day was stormy with snow and some wind. The injured man had always been strong, and had not complained in the last few months. There was no necropsy. We wish to learn whether death from a 110 volt current is at all common, as we never before heard of a well authenticated case.

W. J. LEROSIGNOL, M.D., Rifle, Colo.

ANSWER.—Death from shock by a 110 volt electric current is not an uncommon accident. Indeed, it has been said that no current at a pressure of more than 50 volts is really safe. Alternating currents are more dangerous than direct currents. Accidents of this kind are prone to occur when the skin is moist and the body is in contact with a good "ground." They have been somewhat frequent when electric bulbs or sockets have been handled when the person was in the bath tub. Several reports of fatal accidents of this kind have been recently abstracted in *THE JOURNAL*:

- Balthazard, V.: Electric Accidents from House Currents, *Paris méd.* 12:361 (Oct. 21) 1922; abstr. *THE JOURNAL*, Dec. 30, 1922, p. 2255.  
Zimmern, A.: Electric Accidents with House Currents, *Bull. de l'Acad. de méd.* 87:155 (Feb. 7) 1922; abstr. *THE JOURNAL*, March 25, 1922, p. 925.  
Langlois, J. P.: Electric Accidents with House Currents, *Bull. de l'Acad. de méd.* 87:158 (Feb. 7) 1922; abstr. *THE JOURNAL*, March 25, 1922, p. 925.  
Zimmern, A.: Electric Accidents with House Electric Current, *Presse méd.* 28:25 (Jan. 10) 1920; abstr. *THE JOURNAL*, Feb. 28, 1920, p. 635.  
Heydrich, C.: Fatal Accident from Contact with Low Tension Wires, *Zentralbl. f. Gewerbehyg.* 8:239 (Dec.) 1920.  
Mieremet, C. W. G.: Death from Shock from Incandescent Bulb, *Nederlandsch Tijdschr. v. Geneesk.* 2:1951 (Dec. 1) 1917; abstr. *THE JOURNAL*, March 2, 1918, p. 661.  
Morrow, C. H.: Accidental Electrocution by a Weak Current, *THE JOURNAL*, June 13, 1914, p. 1889.

### CAUSE OF ITCHING IN WOUND HEALING

*To the Editor:*—What is the cause of the itching sensation so frequently felt in wounds that are healing?

ADOLF BOWSKI, New York.

ANSWER.—Sensations of itching are due to stimulation of nerve endings in the skin. Physiologists are not agreed as to whether the nerve endings involved in this sensation are specific, or whether, as some maintain, they are identical with those that serve for touch, and the itching is the result of overstimulation. In a wound that is healing, the local reaction or inflammation results in a state of hypersensitivity in the nerve endings, with the consequence that such stimulations as are caused by contact with dressings or air currents, or even possibly by the increased circulation, will give rise to sensations. When the wound is recent or infected and not healing, the shock or the tonic effects render the nerve endings hyposensitive, and it is only when a more healthy state appears in the wound that function is resumed, and it is often temporarily overactive.



## Medical Education, Registration and Hospital Service

### COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vighne, Juneau.  
IDAHO: Boise, April 4. Dir., Mr. Harry L. Fisher, Boise.  
IOWA: Des Moines, March 8-10. Sec., Dr. Rodney P. Fagen, State House, Des Moines.  
MAINE: Portland, March 13-14. Act. Sec., Dr. Adam P. Leighton, 192 State St., Portland.  
MONTANA: Helena, April 3. Sec., Dr. S. A. Cooney, Power Bldg., Helena.  
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.

### REPORT OF THE FOURTEENTH EXAMINATION OF THE NATIONAL BOARD OF MEDICAL EXAMINERS

The fourteenth examination of the National Board of Medical Examiners was held in twenty-two Class A medical schools, Sept. 25, 26 and 27, 1922, in Part I, which comprises written examinations in each of the six fundamental medical sciences. The subjects of the examination and the relative value of each were: anatomy, 100; physiology, 75; materia medica and pharmacology, 75; pathology, 75; physiologic chemistry, 50, and bacteriology, 50, making a total of 425 counts for this part.

#### Part I

A candidate taking Part I must earn at least 75 per cent. of this total. The number of counts earned in any subject depends directly on the ratings of the answered papers. Falling below 65 per cent. in two subjects, or below 50 in one subject, constitutes a failure.

Under the new plan of examination, a candidate is allowed to take an incomplete examination, omitting one of the subjects if the instruction in this subject is not completed in the medical school of attendance by the end of the second year.

One hundred and fifty-nine candidates appeared for examination in Part I; of these, ninety-six passed, twenty-seven took an incomplete examination, and thirty-eight failed to pass the examination.

#### EXAMINATION, PART I

##### ANATOMY

Answer eight questions out of the ten: 1. Discuss ovulation, menstruation and fertilization. 2. Discuss epithelial and connective tissues. 3. Make a diagram of the lymph glands of the axilla, naming regions drained. 4. Make a diagram of the lumbar plexus, labeling fully. 5. Describe the eyeball and its structures. 6. Describe the liver. 7. Describe the shoulder joint. 8. Make a diagram showing the topography of the liver, gall bladder, and their ducts. 9. Draw a medial sagittal section of the pelvis in the female; label all structures. 10. Describe the nervous mechanism involved in seeing.

##### PHYSIOLOGY

Answer any five questions: 1. What are the advantages and disadvantages of physiologic salt solution when injected intravenously under conditions of dangerously low blood pressure? 2. Describe the venous pulse, giving the cause of the various waves which form it. 3. Describe the circulatory and respiratory reactions which attend the breathing of 5 per cent. carbon dioxide. 4. Describe the movements of the stomach. 5. What is meant by the filtration and absorption theory of urine production? 6. Define: (a) respiratory quotient; (b) alveolar carbon dioxide; (c) alkaline reserve.

##### PHYSIOLOGIC CHEMISTRY

Any five of these questions may be answered: 1. Give in detail: (a) the chemistry of the red blood corpuscle; (b) the chemistry of the white blood corpuscle. 2. Discuss: (a) the chemistry of striped muscle; (b) the chemistry of the gray matter of the brain. 3. Give: (a) the chemistry of bone; (b) the chemistry of cartilage. 4. Discuss the chemical functions of the liver. 5. Discuss the chemistry of the thyroid gland and describe its functions. 6. Discuss the chemistry of bacterial cells. 7. Give the chemistry of the fats which we ordinarily eat, and discuss the chemical changes which take place in the fatty molecules during digestion, absorption, assimilation, and elimination. 8. Give the most prominent theories concerning anaphylaxis or protein sensitization. 9. Starting with CO<sub>2</sub> as present in exhaled air, follow the carbon atom through the plant and through the animal until it is returned to the air as CO<sub>2</sub>. 10. Trace the sulphur atom taken into the body when eggs are eaten, through its digestive, absorption, assimilation, and elimination changes.

##### PATHOLOGY

Answer any five of these seven questions: 1. Describe the structure of a thrombus. How may a thrombus be distinguished from a post-mortem clot? 2. Describe changes which occur in association with cirrhosis of the liver, omitting those which occur in the liver itself. 3. Describe the fate of bone which has undergone necrosis as the result

of osteomyelitis. 4. Describe conditions under which phagocytosis occurs in human pathology. State how the process is modified by factors outside of the phagocyte and cite evidence in proof of the statement. 5. Under what conditions does cerebral softening occur? Describe the changes which are found and the end-result should death fail to occur. 6. Describe in some detail the healing of a tuberculous lesion of the lungs; of a lymph node. 7. Discuss the pathology of heart-block.

##### BACTERIOLOGY

Answer any five of these six questions: 1. (a) What is meant by pH as used in measuring acidity and alkalinity? (b) To what pH point would you adjust the reaction of culture mediums for general bacteriologic purposes? (c) Discuss acidity and alkalinity as they affect the metabolism of bacteria. 2. You are called on to assist in the management of a threatened epidemic of diphtheria in a home for children containing 100 children. Three children about 6 years of age are ill: one moderately, not later than the second day of the disease; the second more severely, third day; the third extremely ill, about the fifth day. (a) How will you confirm the diagnosis? (b) How will you treat each sick child, including dosage and methods of administration of therapeutic agents prescribed? (c) What steps would you take to prevent the spread of the disease to other children in the home? 3. (a) What are the symptoms of botulism? (b) In what classes of food products is *Bacillus botulinus* most frequently found? (c) How would you confirm the diagnosis, and, if confirmed, what further steps should be taken to prevent other cases of the disease? 4. (a) Name five bacteria which are common causes of acute intestinal infection. (b) How would you isolate and identify the causative bacteria in one of these diseases? (c) On what would you base your final laboratory diagnosis? 5. (a) How is smallpox vaccine virus prepared? (b) Give the technic of vaccination and the after-treatment. (c) Describe the evolution of the lesion with inert vaccine in a previously unvaccinated child; with fully potent vaccine in a previously unvaccinated and susceptible child; with fully potent vaccine in a child successfully vaccinated about two years previously. 6. (a) Describe the immunologic principles underlying active and passive immunity. (b) Give two examples of each as applied in the treatment of disease.

##### MATERIA MEDICA AND PHARMACOLOGY

Answer all questions: 1. Atropin: (a) Give its source. (b) Discuss its pharmacologic action. (c) Give the signs of an overdose. 2. (a) Describe the effect of chloral on the central nervous system. (b) Discuss the analgesic action of morphin. 3. Cocain: (a) Give its source and physical properties. (b) Discuss its action on the central nervous system. 4. Digitalis: (a) Discuss its pharmacologic action on the heart muscle. (b) Discuss its diuretic action. 5. (a) Discuss the action of antipyretic drugs. (b) Give the source of salicylic acid, three therapeutic preparations, and dosage of each. (c) Describe the effect of large doses of the salicylates. 6. (a) Name three therapeutic preparations of iron and give the dosage of each. (b) Discuss the pharmacologic action of epinephrin and its therapeutic indications.

#### Part II

Part II of the examination was held in twenty-one of the medical schools mentioned above, Sept. 28 and 29, 1922. This was also a written examination in the following subjects and with the relative values assigned: medicine, 75; surgery, 75; obstetrics and gynecology, 50, and public health, 25, making a total of 225 counts for this part.

A candidate taking Part II must earn at least 75 per cent. of this total. The number of counts earned in any subject depends directly on the rating of the answered papers. Falling below 65 per cent. in two subjects or below 50 in one subject constitutes a failure.

Twenty-seven candidates appeared for examination in Part II. Of these, twenty-one passed and six failed.

#### PASSED, PART II

Names and Colleges	Year of Grad.
Walter Jackson Freeman, Univ. of Pennsylvania School of Med.	1920
Hugh L. Robinson, Harvard Medical School	1922
Abram E. Burnett, University of Nebraska College of Medicine	1921
Edward G. Waters, Harvard Medical School	1922
Claude G. Drace, Johns Hopkins University Medical Department	1922
Allen R. Foss, University of Minnesota Medical School	1921
James C. Potter, Johns Hopkins University Medical Department	1921
George Thomas Pack, Yale University School of Medicine	1922
Ruth N. Miller, Woman's Medical College of Pennsylvania	1922
Lee DeCady, Washington University School of Medicine	1922
William J. VanDenBerg, Harvard Medical School	1920
David T. Smith, Johns Hopkins University Medical Department	1922
Wayne J. Stater, Harvard Medical School	1921
Henry L. Darnier, Johns Hopkins University Medical Department	1920
David T. Ford, University of Nebraska College of Medicine	1921
Frank G. Moore, Johns Hopkins University Medical Department	1922
Paul B. Sheldon, Washington University School of Medicine	1922
C. Chester Chianese, Univ. of Pennsylvania School of Med.	1922
Horace E. Campbell, University of Nebraska School of Medicine	1922
Oscar H. Stover, University of Buffalo Medical Department	1922
Myrta M. Wilson, Rush Medical College	1922

#### Names of Colleges

Names of Colleges	Year of Grad.
Rush Medical College	1918
Harvard Medical School	1922
University of Oregon Medical School	1922
University of Nebraska Medical School	1921
University of Zurich	1910
Johns Hopkins University Medical Department	1922

#### FAILED



## AVERAGES OBTAINED IN PART II\*

Candidate's Number	Medicine, Value, 75	Surgery, Value, 75	Obstetrics and Gynecology, Value, 50	Public Health, Value, 25	Final Averages
23	80.5	88	90	73.5	189.7
27	73	72	88	70.5	170.4
34	76.5	87	87	75	185
51	77.6	75	75	57.5	166
79	73	89	85	79	183.9
82	78	91	80	85.8	188.2
83	69	90	80	78.4	178.9
92	77	52	88	63.6	156.7
97	72	86	80	69.5	175.9
123	89.5	82	90	81.8	194
144	86	75	85	77	182.6
154	76	68	84	79.5	169.9
155	75	72	80	79.5	170.2
162	76.5	79	80	80.7	176.9
176	85	91	88	78	191.6
180	85	93	94	85.5	201.9
195	77	60	85	81.5	165.7
304	80.5	78	91	84.5	185.5
306	63.5	81	80	65	164.7
350	88	98	85	79.9	201.9
491	71	82	86	80.5	177.9
494	56.5	88	67	64	157.9
627	75	83	82	76.5	182.5
832	83.5	88	79	79.5	188
852	80	75	78	71	173.1
879	87.5	81	60	73.5	174.8
903	69	77	90	55	168.4

\* The general average of the candidates is based on subject values as rated by the board. The averages in each subject are on a basis of 100; 1,000 is the total perfect mark as rated by the board for the entire examination; 225 is the maximum mark on this basis for Part II.

## EXAMINATION, PART II

## MEDICINE

Answer all seven questions. No credit will be allowed on questions not answered. Read the questions carefully and answer concisely what is asked. Quality will count more than quantity in marking the answers, and an intelligent understanding of the disease more than a mere array of memorized facts. The time allowance is three hours. If you use for each question the time suggested in parenthesis, you will still have thirty minutes for review and corrections. The time given with each question also indicates roughly the relative value of the question. It is unnecessary to repeat the questions when writing your answers, for you should file a printed copy of the questions with your examination papers.

1. (Twenty minutes.) (a) Describe a typical paroxysm of tertian malarial fever. (b) You are called to a patient who has a chill and find the rectal temperature 103 F. What other evidence, without an examination of the blood, would satisfy you that you are dealing with a case of malaria? (c) Describe your treatment of the case from this time on. 2. (Thirty minutes.) A shopgirl, 26 years of age, ordinarily in good health but subject to "head colds," had a slight sore throat and "head cold" come on four days before the time for her vacation. A slight cough followed, but without expectoration. She had malaise, chilly sensations and slight fever, but kept at work. At the beginning of her vacation exposure to wet and cold aggravated her trouble; she was obliged to go to bed; temperature, 101. She reports that the "country doctor" found râles in her chest and abnormal breathing. She was confined to bed one week. Slight fever is reported; considerable cough; expectoration, at first yellowish green and thick, soon became whitish and then ceased. It was never tinged with blood. After a week of convalescence she returns to the city. She still coughs occasionally, but has no expectoration; she is easily tired and lacks energy; she consults you because "not fit to work." Pulse, 104; temperature, 99.4; slight dullness at right apex. Any attempt to take a deep breath brings on a cough, but no expectoration results. High-pitched, whistling râles are heard throughout the chest with inspiration; their intensity is slightly greater at the dull area. The spoken and the whispered voice are slightly increased over this area, but vocal fremitus is not increased and the respiratory murmur is not modified. No other râles are heard. Heart, normal. Hemoglobin, 75 per cent. Physical examination is otherwise negative. (a) Discuss the question as to tuberculosis in this case on the evidence at hand. (b) Direct treatment for patient at this visit, writing prescriptions for any medicines ordered. (c) How would you handle the problem of determining later whether tuberculosis exists? 3. (Fifteen minutes.) (a) Describe the symptoms and course of diabetic coma. (b) What laboratory tests give warning of the approach of such coma? (c) How does the age of the patient influence the prognosis in diabetes? 4. (Fifteen minutes.) Describe (a) the early symptoms and (b) the early physical signs of tabes dorsalis. 5. (Thirty minutes.) A woman, 42 years of age, neurasthenic, rather poorly nourished, moderately anemic (hemoglobin, 75 per cent.), has had recurrent attacks of "colitis" for the last three years, and has been much worse during the last three weeks. For the last ten days she has taken one or two enemas daily to relieve the severe cramp-like pains in abdomen. Following an enema she has passed considerable gas; the fecal matter has varied from hard, scybalous lumps to loose material, and generally there is much mucus. Before her colitis her bowels moved regularly without medicine; since then there has been a marked tendency to constipation, for which she has used various "strong" medicines. The bowels have been irregular, varying from constipated to loose movements, and generally contain considerable mucus. Physical examination of the abdomen reveals nothing abnormal except tenderness on deep pressure over the colon and spastic contraction of the descending colon. (a) Outline a course of treatment for this patient for colitis. (b) Assume that later you have relieved the colitis and have chronic constipation to deal with—how would you proceed? (Write prescriptions for any medicines employed.) 6. (Twenty minutes.) In the case of a woman, 39 years of age, the abdomen is distended to about the size it would be if she were seven months pregnant. Name the four conditions that you think most likely to have caused this enlargement and tell how you would differentiate between them. 7. (Twenty minutes.) (a) Give the usual period of incubation of measles, scarlet fever, diphtheria, chickenpox and whooping cough. (b) On what day of the disease is the appearance of the eruption to be expected in measles, scarlet fever, and chickenpox?

## SURGERY

Answer any five questions. 1. Give the differential diagnosis and outline the surgical management of: (a) concussion; (b) contusion and (c) acute compression of the brain. 2. Discuss (briefly) chronic mouth infection. 3. Give the diagnosis and treatment of bronchiectasis. 4. Give the symptoms of and outline the surgical management of a case of acute appendicitis (a) in a child of 10 years; (b) in an adult male. 5. Discuss the differential diagnosis of hypernephroma, carcinoma of the kidney and stone in the kidney. 6. Discuss the diagnosis and treatment of sarcoma of the femur.

## OBSTETRICS

1. What is the corpus luteum? Give its structure, origin and supposed functions. 2. Under what conditions is spontaneous birth impossible in a woman with normal pelvis and generative organs and a child of average size? Give reasons in each instance. 3. What is the special significance of venereal disease in obstetrics? 4. What is a tubal abortion? State how it differs from tubal rupture. Outline its clinical course and treatment. 5. What is pituitary extract? Give the indications and contraindications for its use.

## GYNECOLOGY

1. Define acute and chronic endometritis. State how our conception of the latter has changed in recent years. 2. What are the anatomic prerequisites for the development of prolapse of the uterus? 3. Define the terms submucous, intramural, and subserous myoma of the uterus. What symptoms and clinical findings should indicate operative removal in the last-named variety? 4. Give differential diagnosis between a large ovarian cystoma and hydramnios at the eighth month of pregnancy. 5. Discuss the symptoms, diagnosis and treatment of cystitis due to the colon bacillus.

## PUBLIC HEALTH

## HYGIENE

1. Name insect-borne diseases, and discuss the transmission of one of them. 2. Give the object, advantages, and disadvantages of the pasteurization of milk. 3. Discuss the chief factors in anemia in the Gulf states and discuss the methods of dealing with them. 4. Discuss the etiology and prevention of lead poisoning. 5. Give the differential diagnosis between smallpox and other eruptive diseases with which it may be confused.

## MEDICAL JURISPRUDENCE

1. What are the requirements for medical practice in your home state? 2. What is the legal procedure for commitment of an insane person in your state? 3. What aid does rigor mortis give you in determining the time elapsed since death? 4. Give definition of "medical jurisprudence" and indicate four of its chief applications. 5. What are the signs of death by carbon monoxid poisoning?

## Minnesota October Examination

Dr. Thomas S. McDavitt, secretary, Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis, Oct. 3-5, 1922. The examination covered 15 subjects and included 80 questions. An average of 75 per cent. was required to pass. Fourteen candidates were examined, all of whom passed. Thirty-three candidates were licensed by reciprocity. Two candidates were licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Medical Evangelists.....	(1922)		90.1
Northwestern University.....	(1922)*		90.4, 91.2
Rush Medical College.....	(1922)		94
Tufts College Medical School.....	(1919)		82.7
Boston University.....	(1922)		93
Harvard University.....	(1919)		87.1
University of Minnesota.....	(1918) 90, (1922)†		76.2, 88.2
Washington University.....	(1922)		86.2
New York Homeopathic Med. Coll. and Flower Hosp.....	(1920)		92.2
Syracuse University.....	(1920)		89.7
University of Cincinnati.....	(1920)		87.4

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Stanford University.....	(1921)		California
George Washington University.....	(1904)		Dist. Colum.
Hahnemann Med. Coll. and Hosp., Chicago.....	(1910), (1920)		Illinois
Northwestern University.....	(1917)		Illinois
Kush Medical College.....	(1916), (1921, 2)		Illinois, (1922) Wisconsin
Indiana University.....	(1919)		Indiana
State University of Iowa College of Medicine.....	(1891), (1914), (1918), (1919), (1920), (1921, 2)		Iowa
Johns Hopkins Univ.....	(1918), (1920)		Maryland, (1921) California, Ohio
University of Michigan Medical School.....	(1917), (1921)		Michigan
St. Louis University School of Medicine.....	(1922)		Missouri
Washington University.....	(1918)		Missouri
Creighton University.....	(1921, 2)		Nebraska
University of Cincinnati.....	(1920), (1921)		Ohio
Hahnemann Med. Coll. and Hosp. of Philadelphia.....	(1907)		Iowa
University of Pennsylvania.....	(1911)		New Jersey
University of Pittsburgh.....	(1921)		Penna.
Marquette University.....	(1922)		Wisconsin

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Rush Medical College.....	(1917)		N. B. M. Ex.
Woman's Medical College of Pennsylvania.....	(1921)		N. B. M. Ex.

\* These candidates have finished the medical course, and will obtain the M.D. degree after they have completed a year's internship in a hospital.

† These candidate have finished the medical course, and received their M.B. degrees, and will obtain the M.D. degree after they have completed a year's internship in a hospital.



## Medical Economics

### THE PHYSICIAN'S INCOME TAX

Every person whose gross income was \$5,000 or more during 1922 must file an income tax return, no matter what his net income may have been. A person whose gross income was less than \$5,000 must file a return if, being married, his net income was \$2,000 or more, or, being unmarried, his net income was \$1,000 or more. Returns must be filed on or before March 15, 1923. A person who is required to make a return and who has not received the proper blank for such return, should make application for such a blank to the collector of internal revenue in the district in which he resides. If his net income was \$5,000 or less, form 1040 A should be requested; if more than \$5,000, then form 1040. The fact that a collector of internal revenue has not on his own initiative supplied the proper blank does not excuse tardiness or failure in making such a return. Full instructions as to what constitutes gross income and what net income, and as to allowable deductions, applicable to taxpayers generally, accompany the blank form supplied by the collector. There are printed here, therefore, only such instructions as have a peculiar bearing on the physician.

#### I. GROSS INCOME: WHAT IS IT?

A physician's gross income is the total money received for professional work during the year, regardless of when the services were rendered for which the money was paid, plus such income as he may have received from investments, speculation and other sources.

#### II. PROFESSIONAL EXPENSES: WHAT MAY BE DEDUCTED?

Deductible professional expenses are all expenses necessary for carrying on practice. This includes office rent and maintenance, services, supplies, and certain incidentals. With reference to expenses other than professional expenses, the rules applicable to physicians are the same as those applying to all other persons; full information concerning them is printed on the blank supplied for the making of returns.

*Office Rent and Maintenance.*—Office rent and maintenance are deductible, provided the office is not in a building owned by the physician. If a physician maintains an office in his own house, or in an office building which he owns, he cannot charge himself rent and deduct the amount. If he rents an office for business purposes alone, in a building outside his residence, then the entire rental may be deducted. If his office is located in a rented house or apartment in which he has his residence also, then a part of the rental, in proportion to the amount of space used for business purposes, may be deducted as office rent. The same principle applies to expenditures for heating, lighting and maintenance. If a physician, having his office at his residence, has a servant, part of whose time is devoted to office work, then part of her wages may be deducted. Salaries of office attendants, assistants, stenographers and the like are deductible. The fact that a physician occasionally sees a patient at his house or apartment does not justify him in making a deduction, even though the house or apartment may not be owned by him; in order to be entitled to deduct expenses for office maintenance, he must actually have an office, with regular office hours, in his house.

*Expendable and Nonexpendable Property.*—A distinction is made between expenditures for expendable and for nonexpendable property. Expendable property is property that is ordinarily consumed in the using, such as dressings, clinical thermometers, drugs and chemicals. Nonexpendable property may ultimately be used up, deteriorate or become obsolete, but it is not in the ordinary sense of the word "consumed"; rather, it "wears out." Money spent for expendable property for professional use may be charged as an expense. Money spent for nonexpendable property is looked on as an investment, and cannot be deducted. The loss incident to the ordinary use of nonexpendable property, through wear and tear or through normal deterioration, however, if such property is maintained for professional use, may be deducted as depreciation.

No hard and fast rule can be laid down as to the amount that may be deducted on account of depreciation; everything depends on the nature and extent of the property, and on the use to which it is put. Five per cent. per annum has been suggested as a fair figure for depreciation on an ordinary medical library. Depreciation on an automobile would obviously be much greater. So, too, with respect to laboratory apparatus. The physician must in good faith use his best judgment, and make such allowance for depreciation as the facts justify. Depreciation should be computed on the basis of the amount paid for the article, or, if purchased before March 1, 1913, when the first income tax went into effect, then on its estimated value at that time. Elaborating somewhat on the foregoing statement, the following paragraphs are submitted:

*Drugs, Dressings, Instruments, Etc.*—The cost of drugs, dressings and other materials used in the treatment of patients is an expense, and may be deducted. The cost of instruments, appliances and equipment, which constitute a part of the physician's professional outfit and are to be used over a considerable period of time, is an investment and cannot be deducted. Under the latter heading, nondeductible expenses, would come money paid for office furniture and equipment, instruments and apparatus; but on such articles depreciation may be charged.

*Transportation.*—The cost of maintaining an automobile or a team for professional use is an expense, and may be deducted. The original cost of the automobile, or horse and vehicle, however, is an investment and may not be deducted, although depreciation may be charged against it. The cost of maintaining an automobile includes gasoline, oil, tires, insurance, repairs, garage rental (when the garage is not owned by the physician), chauffeur's wages, etc. Allowable depreciation must be a reasonable depreciation, based on the actual diminution in the value of the car resulting from obsolescence and the use to which it is been subjected. If it is computed on the basis of an average, that average must cover the entire estimated life of the car, not merely the life of the car during the time when it is in the possession of the physician. If the automobile is used for professional and for personal purposes, or if it is used by the physician or his family for recreation, then the proportion of expense of operating the car for business purposes alone may be deducted. A physician doing an exclusive office practice, who uses his car merely to go to and from his office, cannot deduct depreciation or operating expense, since he is said to be using the car for his personal convenience and not as a means of gaining a livelihood. What has been said above with respect to automobiles applies with equal force to horses and vehicles, and the equipment incident to their use.

*Books and Journals.*—Medical journals are regarded as expendable supplies, and money paid for them is looked on as an expense and is deductible. Medical books are looked on as nonexpendable; money paid for them is regarded as an investment, and is not deductible. Depreciation may be charged.

*Medical Society Dues.*—Dues paid to medical societies of a strictly professional nature are looked on as a legitimate expense, and may be deducted. Dues for social organizations, however, even though their membership is limited to medical men, is looked on as a personal expense, and is not deductible.

*Traveling Expenses.*—The interpretation of the income tax law published last year (THE JOURNAL, Feb. 4, 1922, p. 373), that a physician's traveling expenses incident to attendance at meetings of medical societies were deductible, was denied by a ruling of the Commissioner of Internal Revenue, June 26, 1922, to which attention has heretofore been called (THE JOURNAL, Dec. 2, 1922, p. 1937). Briefly, the commissioner's ruling denies that such expenses are ordinary and necessary expenses arising out of the practice of medicine, and denies the right of a physician to take credit for such expenses in computing the income tax he is to pay. On behalf of the American Medical Association, urgent representations have been made, claiming that this ruling is not in harmony with the statute and urging that it be rescinded. The matter is now pending before the Commissioner of Internal Revenue, and a decision is expected at an early date. It will be



reported in *THE JOURNAL* immediately on its receipt. It is advised that in the meantime, and up to a reasonable time before the date when returns must be filed, March 15, those physicians who desire to take credit for traveling expenses incident to attendance at meetings of medical societies, postpone the filing of returns. Physicians who are not confronted with the problem of traveling expenses should file their returns as soon as possible.

*Cost of Postgraduate Study.*—The Commissioner of Internal Revenue holds that money expended for postgraduate courses is an investment, not an expense, and is not deductible.

*Laboratory Expenses.*—Physicians maintaining laboratories may deduct rental and maintenance expenses. They may deduct, also, salaries paid to laboratory assistants, and the cost of chemicals, breakable apparatus, roentgen tubes and plates. Expenditures for apparatus, equipment and furniture, of a permanent nature, are looked on as an investment, and cannot be deducted; but a reasonable deduction may be made on account of depreciation each year.

*Miscellaneous.*—Oculists who furnish glasses for patients may charge as a part of their incomes the money received for such glasses, in which event they may deduct as one of the expenses of their practice the amount paid by them for the glasses they supply. Entries on the physician's account books should in such cases show the charge for professional services separate and apart from the charge for glasses.

Uninsured and unrecoverable loss by fire, theft or other means, of strictly professional equipment, provided satisfactory evidence of the loss can be produced, and premiums for insurance against fire or other losses, of strictly professional equipment, are deductible.

## Miscellany

### THE ADVISORY COMMITTEE ON ANTHRAX

The Advisory Committee on Anthrax, appointed by the International Labor Conference, met in London, Dec. 5, 1922. The committee was composed of Prof. Oliver of Australia; Dr. Glibert, Belgium; M. Boulon, France; Dr. Frey, Germany; Sir William Middlebrook, chairman of the Departmental Committee on Anthrax, Great Britain; Dr. Loriga, Italy; Colonel Hutchinson, India; Dr. Konai, Japan; Dr. Dixon, South Africa; Professor Rocca, Spain; Mr. Ribbing, Sweden, and Dr. Dorset, observer for the United States.

The committee was charged with inquiring into and reporting on the prevention of anthrax contracted through hides, skins and other animal products, and the disinfection of wool and hair suspected of being infected with anthrax. It was agreed that the hair used in the brush-making and upholstering industries should be disinfected before using, and that wool and hair used in the textile industry should be disinfected before being handled industrially except: (1) when the country of origin is included in the list of countries where the danger is slight; (2) when the material to be imported has already been disinfected by a recognized process; (3) when wools and hair have to be sorted before washing, unless these products are not included in the list of harmless products, and (4) in such other cases as may be determined by the committee. The processes of disinfection must be approved by the International Labor Conference and conform with the opinion of the Health Committee of the League of Nations. A list of countries where the danger is slight will be brought up to date annually by the Advisory Committee on Industrial Hygiene of the International Labor Office, which committee will be guided by these criteria: (1) for importing countries: raw materials, the country of origin of which is known, and which have not caused a case of anthrax in the importing countries, or the absence of anthrax spores after bacteriologic examination; (2) for countries of origin: the absence of anthrax among animals, or the application of strict measures for stamping out any outbreaks at the source.

The committee was of the opinion that the best precaution against anthrax among flocks is: the compulsory notification

and official verification of cases of anthrax; the isolation of animals suffering from or suspected of suffering from anthrax; the destruction of the entire carcasses of animals dead or suspected to have died from anthrax, and disinfection of the immediate surroundings where the animal died as well as the premises where it was kept; and preventive inoculation against anthrax. It was decided that, in order to reach a practical conclusion of international character concerning disinfection, the International Labor Office should study this question in conjunction with the International Institute of Agriculture at Rome.

This resolution was adopted:

The committee is of the opinion that in most countries the principal danger of industrial anthrax arises in the manipulation of hides and skins, and recognizes the impossibility of securing at the present time complete disinfection to protect against this danger. The committee therefore recommends that regulations be laid down in the different countries having for their object the protection of the workers and the soil against infection by anthrax from hides and skins. The committee further suggests that the International Labor Office, in conjunction with the Health Committee of the League of Nations, should organize international research and invite nations and organizations chiefly interested to undertake such research in their respective countries. The committee considers that, in view of the fact that all countries using infected materials will be benefited by the discovery of a satisfactory process of disinfection, it is desirable that the governing body should take into consideration the possibility of finding grants in aid of research undertaken for that purpose.

The final report of the committee was adopted unanimously with the exception of one abstention, and two votes withheld on a point concerning wool.

### THE BOY WHO WONDERS WHY

*Sir:* In after centuries will not this generation be known as "The Silly Age"? Or have they all been that way?

M. Coué gave four performances at Orchestra Hall, seating about 3,700 persons, with a top price of \$2. On the one side of the footlights, 3,600 persons there to see a new show, something different to please their appetites sated with foxtrot dancing, cats and canaries, and Ziegfelds. On the other side of the footlights, the man who earnestly tries to tell them all that he is no miracle worker; behind him more than 100 cripples. Whether he cures some or not, I have a mental picture of a mother who sat in the front row on the stage, directly behind the man from Nancy, on her knees an 8-year-old boy whose eyes have never seen. The boy sat with bowed head, patiently, now and then twisting his slender fingers, an eager smile on his lips. He had been told he would be made to see.

There come storms of applause from the other side of the footlights.

"What is it?" the blind boy asks eagerly.

"Some one has been cured," he is told.

Outside, half an hour later, the boy patiently asks why M. Coué did not make him see with his eyes that have never seen.

On Saturday M. Coué sails for France, for Nancy. He will probably build himself a new chateau. Fifteen thousand persons at four Coué performances had a new thrill. The 8-year-old blind boy still sits patiently twisting long fingers and wondering why.

Yes, this will be the silly age.

XYLOID, in "Hit or Miss," *Chicago Daily News*.

**Mental Attitude as a Cause of Constipation.**—The mental attitude is no small factor in the cause of constipation. The laity do not understand that the colon is made to be a garbage can, and that its walls and mucous surfaces are prepared by nature to handle the fecal matter without harm to themselves or the body. They think only of the "harm" and "injury" coming to them from the retention of such matter as the feces. Naturally, they look upon the function of the tract from the mouth to the anus as one of absorption, and when constipated they conjure up in their minds wonderful mental pictures of the condition they are getting into by lack of bowel movement.—R. M. Clarke, *California State J. Med.* 21:22 (Jan.) 1923.



## Book Notices

**THE HISTORY OF HUMAN MARRIAGE.** By Edward Westermarck, Ph.D., Hon.LL.D., Martin White Professor of Sociology in the University of London. In three volumes. Fifth edition. Cloth. Introductory price, \$9.50. New York: The Allerton Book Company, 1922.

In 1891 appeared the first edition of this anthropologic work, which was destined to become one of the classics of its subject. The small volume of that period—200 pages—with an introduction by the renowned Alfred R. Wallace, has now grown to a three volume work with more than 1,800 pages. There is a bibliography over 125 pages in length, and an elaborate index. The author's approach to his subject is biologic. His consideration of secondary sexual character, of primitive means of attraction and of the effects of environment on life bears the stamp of this point of view. The effects of economic conditions on marriage and the social aspects of the subject, which chiefly concern the sociologist, are not, however, neglected. It is the broad presentation of a vast amount of data which marks this book as a scientific work. The author draws no morals from his inquiry into the customs of primitive peoples and of modern savages. He places his facts before the reader, and he interprets the facts in the light of evolution and the development of the various races. Professor Westermarck, who holds the Martin White Professorship in Sociology in the University of London, had access, in the preparation of this edition, to the vast material available in the reading room of the British Museum. The books are not, however, mere storehouses of data and description. The author's style is pleasant, and he has an instinct for passages in the authorities whom he cites that convey actual pictures of life in the communities described. The aim of the work has been completeness. Beginning with the method of the study, the author considers the hypothesis of promiscuity, and celibacy, sexual attraction, endogamy, exogamy, marriage by barter, marriage rites, monogamy, polygyny, polygamy, polyandry, group marriage and the duration and dissolution of marriage. The subject is fundamental to an understanding of the history and the most vital problems of the human race. Professor Westermarck's earlier editions have been translated into almost every language in the world. It is gratifying to have available a convenient, new fifth edition in English.

**LEHRBUCH DER GRENZGEBIETE DER MEDIZIN UND ZAHNHEILKUNDE FÜR STUDIERENDE, ZAHNÄRZTE UND AERZTE.** Bearbeitet und Herausgegeben von Dr. Julius Misch. Second edition. Volumes 1 and 2. Paper. Price, 1,200 marks. Leipzig: F. C. W. Vogel, 1922.

The close relationship between affections of the mouth, especially of the teeth and gums, and those of the rest of the body has been known for a long time. Only too frequently are the teeth made to suffer for woes attributed to them when the cause lies elsewhere. A clear understanding of what this relationship consists, what the limitations of dental practice are, and under what conditions dental aid is required would be a great boon to mankind. What is required by the physician is a clear-cut description of oral complications he may encounter in practice, and by the dentist, when to call medical aid. The authors have tried to meet this requirement, but unfortunately have put this information in two bulky volumes. One cannot criticize unfavorably the results of their labor. The whole domain of medicine is covered: internal medicine, pediatrics, rhinology, otology, laryngology, obstetrics and gynecology, dermatology, syphilis and occupational diseases. The illustrations, most of which are borrowed from the most authoritative sources, are reproductions of roentgenograms, colored histologic drawings and the like, and are excellent. As a textbook for the dental student, it would be admirable were it not for the innumerable excursions into unnecessary fields, such as the technic of auscultation, percussion, rhinoscopy, otoscopy, bronchoscopy and intubation. As a textbook for the physician, it would be far more valuable if only the oral or dental conditions of the diseases under consideration were described. The section on pediatrics is complete and profusely illustrated. The importance of careful prophylaxis in various conditions affecting childhood cannot

be overemphasized. A whole chapter is devoted to syphilis of the mouth. It is interesting to note that in the section on hysteria the authors point out the necessity of a careful diagnosis before embarking on dental work, in order to avoid any legal complications that may arise for unnecessary work when the symptoms, really of psychic origin, are attributed to an organic condition in the mouth. Dentists who still have a fear of plying their trade on pregnant women with teeth defects can take heart and proceed with their work after reading that nowhere is it more necessary to take care of the teeth than in pregnancy, and thereby avoid distressing after-effects. In spite of its bulk, this work is an excellent reference book. There is an exhaustive bibliography and a complete index.

**LAWSON TAIT: HIS LIFE AND WORK.** A Contribution to the History of Abdominal Surgery and Gynecology. By W. J. Stewart McKay, M.B., M.Ch., B.Sc. Cloth. Price, \$7.50 net. Pp. 579, with illustrations. New York: William Wood & Co., 1922.

This can scarcely be regarded as a biography, for of its 575 solid pages only twenty-five or thirty contain material that can be designated biographic. In the opening paragraph it is said that Tait was the son of Archibald Campbell Tait; yet in three different places in the body of the book the old story that Tait was the natural son of Sir James Y. Simpson is repeated, and in one place photographs of Tait and Simpson are reproduced on opposite pages, evidently to show the similarity of features and of physical characteristics of the two men. Casually the reader is told that "Tait is now [1897] living in Wales," but no reason is given for his leaving Birmingham. But while the book may not be an ideal biography, it is definitely what is claimed by its subtitle, "A Contribution to the History of Abdominal Surgery and Gynecology." The life and work of few medical men has left a greater impress on gynecology and surgery than did that of Lawson Tait. His personality, however, especially his aggressiveness and his intolerance in discussion, embittered many of his confrères against him and prevented that recognition which he otherwise would have received.

Tait was fortunate in that he commenced his professional work at the time when anesthesia had made surgical procedures painless, when the work of Pasteur and Lister had given the clue to safety in radical surgery, and when "hospital gangrene" and "laudable pus" were becoming things of the past. It was the ideal opportunity for the ambitious surgeon. It was during the quarter century from 1870 to 1895—approximately the period of Tait's active work in Birmingham—that abdominal and gynecologic surgery had its first great development, and in which were worked out the fundamental principles and procedures on which modern surgery has developed. This book is a record of this development; and though Tait's connection with it is the central idea, full credit is given to others. Naturally, diseases of, and operative procedures on, the ovaries and all the acrimonious discussion relating thereto, not forgetting the method of treating the pedicle, take a prominent place. Ectopic pregnancy, hysterectomy for fibromyoma, chronic inversion of the uterus, pelvic suppuration and evolution of hysteromyomectomy, the subjects of a few of the chapters, indicate the scope of the work and the variety of the subjects considered.

Of course Listerism was the vexed question of forty or fifty years ago. When Lister's views were finally being accepted in England, Tait came out in opposition and advocated absolute cleanliness—asepsis—and vigorously opposed the use of chemical antiseptics. Tait, as this author intimates, must be called the father of aseptic surgery.

An interesting chapter, and one well worth reading even now, is that on Tait's operation for the repair of the female perineum. It is well illustrated, and contains details of Tait's method. The chapter on cholecystostomy is an excellent review of the subject. The text for the review is a paper by Tait, "The Surgical Treatment of Gall Stones," 1879, in which he reported what he claimed to be "the first successful case on record." The present author goes back almost to prehistoric times, and finally shows that Bobbs of Indianapolis "was the first to perform the modern operation



of cholecystostomy." Other subjects are treated in similar manner, and the author has tried to be fair and give credit where due.

This book will be read with profit not only by those interested in Lawson Tait, but also by all who have any interest whatever in the history of the development of abdominal surgery.

**A MANUAL OF PHARMACOLOGY AND ITS APPLICATIONS TO THERAPEUTICS AND TOXICOLOGY.** By Torald Sollmann, M.D., Professor of Pharmacology and Materia Medica in the School of Medicine of Western Reserve University. Second edition. Cloth. Price, \$7 net. Pp. 1066. Philadelphia: W. B. Saunders Company, 1922.

The second edition of Dr. Sollmann's work contains all the admirable features which made the first contribution preeminent. But the present work also contains the author's estimates of the advanced therapeutic and pharmacologic data up to January, 1922. There have been incorporated important additional changes in all parts of the text; also introduced are excellent discussions of new topics, such as the "war-gases," the new antiseptics (hypochlorite derivatives, acridine dyes, mercury compounds, protargins) cuprein derivatives, and paraffin for films. The author states that these additions have enriched the bibliography alone by more than twelve hundred titles. Throughout the text American names as well as the newer nonproprietary designations are used; this is a particularly valuable feature to teachers of materia medica. The subject matter is of large scope; the broad conceptions, generalizations and certain detailed conclusions—all of great and practical pharmacologic importance—are printed in larger sized type; a large mass of minute detail—data for consultation—appears in smaller type. Thus may the manual serve for both study and reference. It is reliable and a distinct credit to American medicine as well as to pharmacology. Not only is it a work for the student and laboratory worker, but it is equally valuable for the practitioner. Progressive physicians realize that the estimate of a drug cannot be based on uncontrolled clinical observations or on uncritical statements handed down from book to book. Physicians abreast the times demand that all the scientific evidence concerning drugs—chemical, pharmacologic and clinical—shall have been considered. For their purpose, there could be no better addition to the library than Sollmann's Manual of Pharmacology.

**UNTERSUCHUNGEN ÜBER DIE EIGENREFLEXE (SEHNENREFLEXE) MENSCHLICHER MUSKELN.** Von Paul Hoffmann, Privatdozent für Physiologie in Würzburg. Paper. Price, \$1.20. Pp. 106, with 38 illustrations. Berlin: Julius Springer, 1922.

This is a scientific discussion of tendon reflexes by a physiologist. He objects to the term tendon reflexes and prefers to call them Eigenreflexe (proper muscle reflexes, idiomuscular reflexes). The tendon plays no important part, the reflex being produced by a sudden pull in the long axis of the muscle, and it is immaterial whether this is produced by tapping the tendon or moving the joint suddenly. The author deplores the use of the term "reflex" for such complicated phenomena as Pawlow's "conditional reflexes," in which association is involved. He shows that recent physiologic investigations have removed the objection to the true spinal reflex nature of the so-called tendon reflexes raised on the ground that the reaction time is too short. Apparatus and recording methods for the fine study of reflexes are described in detail.

**DIE EPIDEMISCHE ENCEPHALITIS.** Von Professor Dr. Med. Felix Stern, Oberarzt der Universitätsklinik für Psychische und Nervenkrankheiten Göttingen. Paper. Price, \$2.80. Pp. 228, with 12 illustrations. Berlin: Julius Springer, 1922.

This is No. 30 of the monograph series edited by Foerster and Wilmanns. It is a carefully worked out monograph discussing all features of the disease, based on the extensive clinical and pathologic work of the author and a critical review of the entire literature. American, English and French observations are considered as fully and impartially as those by German authors. It is by far the most comprehensive book on this disease published so far, and it enters more deeply into pathogenic problems than any other. While calling attention to all of the manifold symptoms and lesions

encountered, the main effort is centered on presenting a picture of the disease as a whole and to establish scientifically its nosologic entity. The discussion of its relationship to influenza is very fascinating and convincing, though no positive conclusion is reached except that a close relationship exists. It is thought that the filtrable encephalitic virus exists in a harmless form in the nasal mucosa of a great many persons and that it requires activation by the influenza virus and possibly by others of unknown nature. The possible relation to ordinary herpes is discussed. Much attention is given to the chronic and recurring forms, especially the parkinsonian form, and it is considered possible that toxins from the liver, kidneys or ductless glands may participate in their pathogenesis. So far very little material from old cases has been available for study, and it is not considered settled that we are dealing with the action of persistent encephalitic virus, as is the case with spirochetes in parietic dementia.

**FUNCTIONAL NERVOUS DISORDERS: THEIR CLASSIFICATION AND TREATMENT.** By Donald E. Core, M.D., M.R.C.P., Honorary Assistant Physician, the Manchester Royal Infirmary. Cloth. Price, \$6. Pp. 371, with 21 illustrations. New York: William Wood & Co., 1922.

This is an extremely difficult book to read because the author has developed a language of his own in which he uses many words such as "psychic dissociation" and "atmosphere" in a quite special sense, which is not always obvious. This very decidedly interferes with the purpose of the author in writing the book, which was the introduction of order into the chaotic vagueness which at present stamps the classification and conception of functional nervous disorders. Dr. Core, on premises of his own, which contain much food for thought, divides these disorders into regressive and progressive types. The former contains only hysteria, which is divided into primary, secondary and tertiary varieties dependent on "the atmosphere" in which the condition develops. The progressive disorders present symptoms referable, essentially, to disturbances in the sympathetic system. They are subdivided into "instinct-distortion neuroses or dysthymias," and "mnemoneuroses." The latter are usually end-stages of the dysthymias, and are fundamentally dependent on memory. There is also much discussion of the relation between functional disorders and structural disease. Great stress is laid on the causation of the latter by the former, and yet the reasoning is difficult to follow and ignores some facts of histopathology. The involved phraseology is distinctly unfortunate, because close study reveals original thought, and suggests constructive possibilities. There is much that is worth the labor of reading for the specialist, but the book cannot be recommended to the general reader.

**THE PROCESS OF DIAGNOSIS INCLUDING THE METHOD OF HISTORY-TAKING, AND PHYSICAL EXAMINATION OF SURGICAL CASES.** By E. Stanley Ryerson, M.D., C.M., F.A.C.S., Associate in Surgery and Secretary of the Faculty of Medicine, University of Toronto. Cloth. Price, \$1. Pp. 109. Toronto: University of Toronto Press, 1922.

This little book would be especially suitable reading for the intern entering on his hospital service. Such reading could not fail to improve the quality of the examinations of patients and of the histories written. The difficulty of eliciting facts by interrogation of the patient is well brought out by the author. He quotes Mlle. Borst, who found that "the degree of fidelity of the hesitating witness may be put down as 56 per cent.; of a confident witness, 86 per cent.; of a sworn witness, 92 per cent.," but considers these results too favorable, as those examined knew they were going to be tested, and endeavored to fix the facts in their memory. A similar test applied to fifty-four students, who had no warning, showed an average fidelity of 27 per cent. "The practice by many physicians of giving the history 100 per cent. value and making a diagnosis on this alone and prescribing treatment in accordance with this diagnosis is scarcely justifiable if the facts elicited really have only 27 per cent. truth in them." The subject is taken up chiefly from the standpoint of the surgeon; but the author does not intend to present a systematic treatise on surgical diagnosis. He aims merely to assist students in the process of diagnosis by suggesting the exercise of logic and the application of system.



## Medicolegal

### Medical Services for which Employer Is Not Liable

(*Gainesville Limestone Co. v. Robertson (Ga.)*, 113 S. E. R. 98)

The Court of Appeals of Georgia, Division No. 2, in reversing a judgment obtained by plaintiff Robertson against the defendant company, gives no further information about the case than is contained in the syllabus by the court that, in a suit in quantum meruit (a suit to recover the reasonable value of services), when it does not appear that the services rendered by the plaintiff were rendered to the defendant, or for the defendant's benefit, or, if rendered to a third person, were rendered in the performance of a duty which the defendant owed to such third person, no promise by the defendant to pay for the services will be implied.

Medical services rendered to an injured employee, such as the performance of an operation for the purpose of relieving him of the effects of the injury, and in giving him medical attention generally, are not services for the benefit of the employer when they are not rendered until after the injured person has reached his home and been cared for by another physician; and are not rendered in the performance of any duty which the employer may at the time of the injury owe to the employee, in the nature of emergency treatment, by way of a humanitarian or legal duty to minister immediately to and care for the injured employee.

When, at the time of injury to an employee, and after the employee had been informed that a certain physician had been summoned to treat his injury, the employee requested a fellow servant to summon the plaintiff, who was his own family physician, and the plaintiff was accordingly summoned, and, in company with the other physician, treated the employee's injuries, and continued in attendance on him; when, several days afterward, an authorized agent of the employer stated to the physician who had first been summoned that he desired that everything be done for the benefit of the injured employee, including the procurement of other physicians if necessary, and when this physician did cooperate with the plaintiff, the inference was not authorized that there was an express contractual relation between the plaintiff and the employer, obligating the employer to pay the plaintiff for any medical services rendered to the employee.

The verdict rendered for the plaintiff, being without evidence to support it, should have been set aside on the defendant's motion for a new trial.

### Invalid Ordinance and Revocation of License

(*Moorehouse v. Hammond (Utah)*, 209 Pac. R. 883)

The Supreme Court of Utah says that a complaint in writing was filed in the office of the defendant, as director of registration, in which it was charged that plaintiff Moorehouse had been guilty of unprofessional conduct in that he had wilfully failed to report to the health officer in writing a case of infectious disease which he had treated on a certain date, and that, having been charged with this offense before a justice of the peace, he had pleaded guilty and been adjudged to pay a fine of \$25. Thereafter, a hearing was had before the defendant and a committee of physicians, as provided by statute, and the committee, after hearing the evidence, reported that it found the accused guilty of unprofessional conduct as charged, and recommended that his license to practice medicine and surgery be revoked; after which the defendant entered an order of revocation.

The plaintiff was charged with violating a town ordinance that required a report "in writing," while the state statute merely requires a physician to report "the existence of any contagious or infectious diseases . . . to the local board of health." The ordinance required more from the physician than did the statute. While the cities and towns, including boards of health, in Utah, are given ample power to pass and enforce ordinances, to promulgate and enforce rules and regulations respecting the public health and to require certain things to be done in case of contagious and infectious diseases; when, as here, the statute specifically defines what act

or acts of commission or omission on the part of a physician shall constitute unprofessional conduct authorizing the revocation of his license to practice medicine, an ordinance, in the absence of express statutory authority, cannot impose greater or different duties in that regard than the statute imposes.

However, if it was held that the ordinance in question could impose the duty of reporting contagious and infectious diseases in writing, yet, in view of the fact that it did not denounce the omission or failure to report as unlawful nor impose any penalty or punishment for a failure to make a report, the ordinance was clearly unenforceable, and the imposition of the fine by the justice was beyond his power and constituted manifest usurpation.

Besides, a member of the board of trustees of the town testified that he was the authorized quarantine officer of the town; that he was present at the house of the afflicted person; that the plaintiff informed him, as quarantine officer and trustee, that the patient was afflicted with smallpox, and that, immediately on receiving this information, he put up a sign quarantining the house in which the patient was confined. The provisions of the statute were thus substantially complied with, and that is all that the law requires.

In concluding its opinion, the court desires to add that it is very reluctant to interfere with the orders of the boards of health in carrying into effect the rules, regulations and ordinances relating to the prevention of disease and the protection of the public health. In enforcing these rules, regulations and ordinances, the boards of health are exercising the highest functions of government, and they should not be interfered with unless it is clear that they have exceeded the bounds of their authority. When, however, as here, the rights of a citizen have been invaded and he has been condemned without authority of law and has had his license to practice his profession revoked, the court has no alternative but to correct the wrong by annulling and setting aside the order by which his privileges have been denied him.

### Physician Not Liable for Death of Child from Eating Tablets Left for Adult

(*Walker v. Chase (Ia.)*, 190 N. W. R. 397)

The Supreme Court of Iowa, in reversing a judgment for \$3,500 damages that was rendered against the defendant, a physician, for the death of a child, alleged to have been caused by the physician's negligence, says that the case was unique in that it had no precedent as an authority; that the court had examined the authorities cited in the brief for the plaintiff and found none that could fairly be called an authoritative precedent in support of a recovery in this action, which was brought by the father of the child as administrator of its estate. The evidence disclosed that the defendant was called to the home of a patient, 22 years of age, who was being attended by the mother of the child. He left in a china cup on the table twelve or fifteen pink tablets for the patient, each tablet containing one-sixtieth grain of strychnin. On the following morning, the child, who was 17 months old, was discovered in a chair at the table after she had eaten all of the tablets, less four. She went into convulsions and died within an hour. The plaintiff sought to make a point of the fact that the tablets were pink and therefore attractive to a child, and he argued that, in putting the pink tablets into the china cup and leaving the cup on the table within the possible reach of the child, the defendant exposed her to a danger which he ought to have foreseen and against which he ought to have guarded.

If, instead of setting the cup on the table, the defendant had placed it in the hand of the child's mother or of the other attendant, this circumstance would have wholly undermined the argument on the proposition that it was negligent for the defendant to put the tablets in a cup and to leave the cup on the table, and that his responsibility for this act continued as long as the tablets remained where he left them. In legal effect, the cup with its contents was put into the custody and control of the child's mother as effectively as by any other conceivable method. It was at her hand and in her care. In order to carry out the instructions of the defendant to give the contents to the patient in doses of



one tablet every four hours, she must necessarily handle the cup and assume control of it. It was not wrong for the trial court peremptorily to instruct the jury that the act of the defendant amounted to a delivery of the tablets to the child's mother. The care, custody and control of the cup with its contents passed that evening to her, and from that time forward, she, and not the defendant, was responsible for whatever method of care, custody and control she chose to adopt.

Nor was the defendant negligent in that he failed to warn the mother that the tablets, if taken by her child, would be injurious and dangerous. A formal warning to the mother would have been a mere formality, which would have added nothing to the knowledge she already had that it would be extremely dangerous for a child of the age of the one in question to swallow ten or a dozen doses of medicine. Though the petition charged a failure to label the tablets, it was not contended that the failure to do it was a violation of the statute. It was urged as a circumstance on the question of negligence. But an instruction was technically erroneous which implied that the burden of proof was on the defendant to show that the mother knew that the tablets contained drugs that were dangerous to the health and life of her child. On this question, the burden was on the plaintiff, not on the defendant. The conclusion of the supreme court is that the record disclosed no evidence of negligence on the part of the defendant, and that his motion for a directed verdict ought to have been sustained.

#### Duty as to Reporting Result of Physical Examination

(*Kelman v. Union Ry Co. (N. Y.), 195 N. Y. Supp. 313*)

The Supreme Court of New York, Appellate Division, First Department, reverses an order that was obtained by the defendant requiring the plaintiff, who was seeking to recover damages for personal injuries, to submit to a physical examination by two physicians named, which in its final form was in accord with an opinion that the physicians should file their report with the referee, and that they could furnish a copy of the report to the attorney for the plaintiff, as well as to the attorney for the defendant. The court says that the right to a physical examination of an adverse party did not exist in the state of New York prior to the adoption of the amendments to Section 873 of the Code of Civil Procedure. That section does not require the physician to make a report to any one. As the examination is made in behalf of the defendant, at its expense, and because it is ignorant of the nature and extent of the plaintiff's injuries, unless the physician communicated the result of the examination to the defendant's attorney, the attorney would be as ignorant of the plaintiff's physical condition after the examination as he was before. It is therefore to be expected that the results of the examination will be communicated to the defendant's attorney. The physician cannot be required to file a report, either with the referee or with the clerk of the court, nor can he be compelled to make a formal report to either party. Although the physicians are appointed by the court, they are not thereby constituted a commission to hold an inquisition on the physical condition of the plaintiff. They are simply to testify on the trial as other witnesses to the facts they ascertained from such examination.

#### Valid Ordinance to Protect Food from Flies and Dust

(*Barrett et al. v. Rietta et al. (Ala.), 93 So. R. 636*)

The Supreme Court of Alabama, in holding valid Sections 1099, 1101 and 1119 of the code of the city of Birmingham, says that the capacity of dust and flies to transmit or to disseminate disease germs or other infectious matter is generally appreciated. The municipal police power to preserve the public health comprehends the authority to enact ordinances to protect public consumption from the harmful or hazardous consequences of eating food that may become infected through exposure to dust and flies. Section 1099 makes it unlawful to sell or offer for sale any contaminated, adulterated or unfit food intended for human consumption "or any food which has been exposed to dust, flies or vermin." The alternative clause quoted must be referred to "any food" that has been so exposed while under the control or posses-

sion of the offender. This clause was not intended to penalize a dealer for exposures to dust, flies or vermin that had been accomplished before the food came into the possession of the local dealer. "Contaminated, adulterated, or unfit" food is forbidden sale by the preceding provisions of the section; hence, the court's conclusion that the section is not unreasonable, oppressive, or otherwise invalid as imposing irrational restraint on the sale of foods. Section 1101 makes it unlawful to maintain or conduct any place where food, milk, ices or beverages are manufactured, prepared, or served, unless all of the doors, windows or other openings are properly screened; provided, however, that screen doors may be kept open if electric fans are effectually used and effectually prevent flies from coming in. Considering Sections 1099 and 1101 together, the exposure to flies that these sections inhibit is not an exposure that contemplates perfect immunity from contact with flies. The inhibited exposure is that which results from failure to observe the provisions of Section 1101, or that which results from unnecessary or unreasonable subjection of articles of food to the contact of flies. So construed, these sections are valid. Section 1119 requires that foods sold or offered for sale be kept indoors, and all doors, windows or other openings be kept closed or screened as provided in Section 1101. This requirement that foods shall be kept inside the building is a reasonable regulation. Its design is to avoid the contaminating effect of dust and flies, an obviously reasonable precaution; and this section is valid. Furthermore, give the valid exercise of the authority to define offenses of the present nature, and to penalize infractions thereof, the ascription of a distinct offense to each day's failure to observe the municipal mandate is, manifestly, a valid exercise of the power conferred.

#### Damages for Mental Suffering—Injury to Pregnant Woman

(*Davis, Agent, v. Murray (Ga.) 113 S. E. R. 827*)

The Court of Appeals of Georgia, Division No. 2, holds that there may be a recovery for mental suffering resulting directly from a physical injury. Thus, a pregnant woman, who has, as a result of another's negligence, received a physical injury of such a nature as to produce within her mind a fear and apprehension that she will give birth to a deformed child as a result of the injury, may, whether such deformity actually occurs, recover damages for mental suffering resulting from the injury.

The fetus of a pregnant woman being part of her person, she is entitled to recover for any actual physical injury sustained by the fetus, including mental pain and suffering proximately resulting therefrom. When, as a result of an injury to such fetus, the child is born deformed, the mother is entitled to recover damages, not only for the physical injury, but also for her mental suffering on account of the mortification and disappointment at the birth of a deformed child. The pain and suffering to the mother thus caused may be continued throughout her entire life, and therefore be permanent, and in computing damages for the injury the permanency of the pain and suffering may be considered. The mother, however, cannot recover damages for any mental suffering which she may undergo occasioned by the child's deformed condition continuing after birth, nor for any pain and suffering which the child may undergo.

The foregoing principles of law were properly given in the charge to the jury in this case, in which Mrs. Murray sued for damages claimed by reason of a collision between a train and an automobile in which she was riding at a time when she was pregnant about two months, which was followed seven months' later by the birth of a child with two toes missing from the left foot. Demurrers to the plaintiff's petition were properly overruled. But, since there was no evidence which would authorize the jury to infer that the deformed condition of the child at its birth was caused by the physical injuries received by the plaintiff and alleged to have been inflicted by the defendant, it was prejudicial to the defendant for the court to instruct the jury on the assumption that there was an issue of fact as to whether or not the deformity was caused by the defendant's negligence, and for this reason the judgment obtained by the plaintiff is reversed, and a new trial is awarded the defendant.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### Archives of Dermatology and Syphilology, Chicago

January, 1923, 7, No. 1

- \*Experimental Study of Pathogenic Acid Fast Actinomycete (*Nocardia*). D. J. Davis and O. Garcia, Chicago.—p. 1.
- \*Contributory Factors in Postarsphenamin Dermatitis. J. H. Stokes and E. P. Cathcart, Rochester, Minn.—p. 14.
- \*Infantile Eczema and Examination of Stools. C. J. White, Boston.—p. 50.
- \*Treatment of Arsphenamin Dermatitis and Certain Other Metallic Poisonings. W. L. McBride and C. C. Dennie, Kansas City, Mo.—p. 63.
- Brief for More Accurate Classification of Industrial Skin Disease. C. G. Lane, Boston.—p. 77.
- Dermatitis Venenata; Study of Tropical Plants Producing Dermatitis. V. Pardo-Castello, Havana, Cuba.—p. 81.
- Case of Lacquer Dermatitis. W. A. Pusey, Chicago.—p. 91.
- Resistance of Hair to Certain Supposed Growth Stimulants. M. Trotter, St. Louis.—p. 93.
- Report of Committee on Statistics of American Dermatological Association for 1921. S. Pollitzer, New York.—p. 99.

**Pathogenic Acid Fast Actinomycete.**—The actinomycete described by Davis and Garcia was isolated from a human case. It was acid fast and pathogenic for animals. It belongs in the general group of *Nocardia*. The extracted organism is practically gram-negative and nonacid fast. The extracted fatty substance is acid fast and gram-positive. The organism is pathogenic to rabbits, rats, guinea-pigs and mice. Intravenous injection into rabbits produces typical tubercles in the lungs and other organs, containing characteristic raylike bodies. The organism may show striking conidia-like forms in liquid mediums which may be of value in identification. The antiformin method must be avoided in a suspected case of acid fast actinomycete (*Nocardia*) infestation.

**Postarsphenamin Dermatitis.**—It has been the experience of Stokes and Cathcart that cutaneous reactions to arsphenamin, in general, are not a function of the amount of the drug administered; and that they show a distinct tendency to occur early in the course of its administration, rather than late. Comparative and direct clinical analysis indicates that postarsphenamin cutaneous reactions have no clinically demonstrable connection with the administration of mercury (except as an external irritant in inunctions); neither do they seem dependent on any renal abnormality or injury detectable by the ordinary laboratory tests. In other words, no clinical evidence was found that arsenic retention due to renal injury by mercury is a cause of arsphenamin dermatitis. In a large proportion of cases there is evidence that chronic focal and acute prodromal or intercurrent infections form a part of the complex on which arsphenamin cutaneous reactions develop. The severity of the cutaneous reactions observed has stood in a rough direct relation to the extent of the infection factor. Circumstantial evidence is submitted which seems to render still more plausible the conception of infection as an important part of the causative background of the exanthematic and exfoliative syndromes complicating the administration of arsphenamin. The authors propose a theory of the mechanism of postarsphenamin dermatitis based on an allergic instability or idiosyncrasy produced either by colloidal changes secondary to arsphenamin injection, especially if accompanied by repeated reaction, or by chronic or sudden absorption of a bacterial sensitizing protein from a focal or acute infection, as the fundamental premise.

**Treatment of Infantile Eczema.**—The proper use of crude coal tar paste, rightly prepared, with the most conscientious regard to necessary general precautions, White asserts, will cure and cure promptly the great majority of cases of infantile eczema treated in private practice.

**Treatment of Arsphenamin Dermatitis.**—McBride and Dennie assert that sodium thiosulphate, given intravenously and by mouth, rapidly shortens the course of arsenical dermatitis. It is a successful neutralizing agent for acute and chronic mercurial poisoning. To secure the best results, it

must be given intravenously. In its pure form, it is nontoxic up to 2 gm. doses. Certain conditions which impair the liver or kidneys are predisposing factors in the production of arsphenamin dermatitis. Seven cases are reported. Two cases were due to neo-arsphenamin, and one case each to potassium arsenite, arsphenamin, sodium cacodylate, mercuric chlorid and mercuric salicylate.

#### Boston Medical and Surgical Journal

Jan. 11, 1923, 188, No. 2

- \*Value of Animal Experimentation to Physician in His Daily Work. W. B. Cannon, Boston.—p. 30.
- \*Aspects of Antitoxins in Relation to Animal Experimentation. E. H. Place, Boston.—p. 32.
- \*What Animal Experimentation had done for Exotic and Tropical Medicine. R. P. Strong, Boston.—p. 33.
- \*Benefit to Animals of Medical Experimentation. G. H. Parker, Boston.—p. 36.
- \*How Animal Experimentation has Assisted in Control of Contagious Diseases Among Animals. L. H. Howard, Boston.—p. 37.

**Value of Animal Experimentation.**—It is very important, says Cannon, that the public should know that the animals used in laboratories for experimental purposes are not treated cruelly or carelessly. To secure relief from pain and disease is the central purpose of medical investigation. In every medical school and in every institute for medical investigation in the United States rules governing the care of animals have been formally adopted—rules providing for the comfort and sanitary surroundings of the animals, and requiring all operations to be approved by the laboratory director. He is held responsible for the problems studied and the methods used in studying them. Further, the rules require that all operations likely to cause greater discomfort than going under an anesthesia shall be done under anesthesia and shall be followed by painless death. Only the director is permitted to make exceptions to these last provisions, and he is allowed to do so only in the rare cases in which anesthesia or death of the animal would defeat the object of the experiment. So confident are the directors of the laboratories that the condition of the animals and the uses to which they are put in medical investigation would be regarded as satisfactory by reasonable people that all the medical schools and medical research institutions in the country have publicly declared that representatives of humane societies may visit the laboratories and see for themselves what is going on.

**Relation of Antitoxins to Animal Experimentation.**—The lives saved by diphtheria antitoxin since 1895, Place states, are to be numbered by the million. The deaths from diphtheria, due to failure to receive antitoxin or to receiving it too late, in this country alone probably number about 15,000 yearly. It is possible scientifically, even if it may be impracticable, to live in good nutrition and health without the use of animal food. It is, however, absolutely impossible to provide a safeguard of any degree against diphtheria without the use of animals. With this use a thorough, practical means is at hand of removing the diphtheria menace almost completely with the saving of millions of lives, enormous suffering, and great economic loss, and this with less suffering and death of the animals than occur under natural conditions in the life of wild animals.

**What Animal Experimentation Has Done for Exotic and Tropical Medicine.**—Strong says that there is today, apparently, a great deal of misunderstanding on the subject of animal experimentation. Many people who have become violently opposed to animal experimentation have been brought to their belief by misrepresentation or misunderstanding of facts, or by ignorance. Sincere people are attending and holding meetings or are supporting and even issuing publications in opposition to animal experimentation in general, and are doing so solely because they are really unenlightened on the actual facts in regard to the necessity for animal experimentation in connection with the progress of medicine and the prevention and relief of suffering. Unless there is greater popular education on the subject, unless the general public can acquire a more correct knowledge of the value of animal experimentation in relation to human welfare, Strong says, misrepresentation by the misguided opponents



of animal experimentation and vivisection bids fair to have a clear field, and ignorance and error will be liable to play havoc in the combat for the prevention of disease and the protection of the public from it.

**Benefit to Animals of Medical Experimentation.**—Whenever preservation measures are undertaken, Parker points out, the knowledge gained by physicians from centuries of observation on human beings and from years of experimental work on animals is immediately made available in bettering the conditions in wild animal life. Wild animals, therefore, profit as much from the advancement of medical science through observation and experimentation as man does himself.

**How Animal Experimentation Has Assisted in Control of Contagious Diseases Among Animals.**—Veterinary science, on which is based all animal disease control work, according to Howard, depends for its advancement at the present day largely on the new truths which scientific investigators reveal to it, and the day which sees the restriction or prohibition of animal experimentation by competent men will also mark the decline of veterinary science and of the veterinary profession in its chosen field of service to the animal kingdom.

Jan. 18, 1923, 188, No. 2

- Opportunity to Enlighten Hospital Trustees. C. Frothingham, Boston.—p. 57.  
Epinephrin Therapy. A. Worcester and D. O'Hara, Waltham, Mass.—p. 58.  
What We Owe to Past Investigators for Our Present Methods of Prevention and Treatment of Tuberculosis. E. O. Otis, Boston.—p. 59.  
Medicine and Law. H. L. Shattuck, Boston.—p. 63.  
\*Case of Torsion of Greater Omentum. M. A. McIver, Boston.—p. 65.  
Preventorium and Its Relation to Tuberculosis in Childhood. R. Clifford, Boston.—p. 66.

**Torsion of Omentum.**—The main symptom in McIver's case was pain, localized just to the right of the umbilicus. It was sharp and knifelike in character, and did not radiate. There was no nausea or vomiting. The temperature was 102 F. A diagnosis of acute appendicitis was made. On opening the abdomen, an area of necrotic omentum was seen lying just to the right of the incision. At the base was a very definite twist which had evidently cut off the blood supply. The appendix, gallbladder and stomach were perfectly normal. The gangrenous portion of the omentum was resected. The patient was discharged well on the thirteenth day.

### Colorado Medicine, Denver

January, 1923, 20, No. 1

- Report of Three Years' Public Health Work of Denver Venereal Disease Clinic, Women's Division. M. C. T. Love, Denver.—p. 5.  
Causes and Prevention of Rickets. E. L. Timmons, Colorado Springs.—p. 11.  
Pasteur's Influence on Medicine. C. E. Edson, Denver.—p. 15.

### Journal of Infectious Diseases, Chicago

December, 1922, 31, No. 6

- \*Experimental Study of Methods Available for Enrichment, Demonstration and Isolation of *Bacillus Botulinus* in Specimens of Soil and Its Products, in Suspected Food, in Clinical and in Necropsy Material. B. J. Dubovsky and K. F. Meyer, San Francisco.—p. 501.  
\*Distribution of Spores of *Bacillus Botulinus* in California. II. K. F. Meyer and B. J. Dubovsky, San Francisco.—p. 541.  
\*Distribution of Spores of *Bacillus Botulinus* in Soil of a Restricted Area in California. III. G. E. Coleman, Santa Barbara, Calif.—p. 556.  
\*Distribution of Spores of *Bacillus Botulinus* in United States. IV. K. F. Meyer and B. J. Dubovsky, San Francisco.—p. 559.  
\*Distribution of Spores of *Bacillus Botulinus* in Territory of Alaska and Dominion of Canada. V. B. J. Dubovsky and K. F. Meyer, San Francisco.—p. 595.  
\*Occurrence of Spores of *Bacillus Botulinus* in Belgium, Denmark, England, The Netherlands and Switzerland. VI. K. F. Meyer and B. J. Dubovsky, San Francisco.—p. 600.  
\*Occurrence of Spores of *Bacillus Botulinus* in the Hawaiian Islands and China. VII. P. Schoenholz and K. F. Meyer, San Francisco.—p. 610.  
\*Occurrence of *Bacillus Tetani* in Soil and on Vegetables. VIII. B. J. Dubovsky and K. F. Meyer, San Francisco.—p. 614.  
Safe Method for Securing Anaerobiosis with Hydrogen. IX. A. C. Richardson and C. C. Dozler, San Francisco.—p. 617.  
\*Pathogenicity of *Bacillus Botulinus*. X. G. E. Coleman and K. G. Meyer, San Francisco.—p. 622.  
\*Heat Resistance of Spores of *Bacillus Botulinus* and Allied Anaerobes. IX. J. R. Esty and K. F. Meyer, San Francisco.—p. 650.

**Isolation of *Bacillus Botulinus*.**—In this paper Dubovsky and Meyer describe the methods employed for the enrichment and demonstration of *Bacillus botulinus* in specimens of soil and its products. The composition of the medium, the preparation and heating of the samples, the period of incubation and storage, the identification of the toxin and the isolation of the organism from toxic enrichment cultures are discussed and their value considered in the light of numerous experiments. It is emphasized that inexperienced workers should question their results until they eliminate the danger of laboratory contamination by continuous, painstaking vigilance, proper sterilization of the culture mediums, glassware, etc., and by repeated control examination. The methods applicable for the examinations of suspected food, clinical and necropsy material are described in detail.

***Bacillus Botulinus* in California.**—The examination by Meyer and Dubovsky of 624 specimens of soil, vegetables, fruits, feeds, manure and sewage collected in thirty-six counties of California and studied by means of 894 cultures definitely indicates that the spores of *Bacillus botulinus* are very widely distributed. Approximately 30 per cent. of the samples produced toxic cultures; 74.8 per cent. of the identified toxins were neutralized by a Type A; 22.1 per cent. by a Type B, and 3.1 per cent. by a polyvalent antitoxin. The evidence strongly suggests that the natural habitat of *B. botulinus* is found in virgin mountain or forest soil. *B. botulinus* is also present in cultivated garden and field soils and their products. Vegetables and fruits bought in various cities and towns of California carry the spores of *B. botulinus*. *B. botulinus*, Type B, occurs predominantly in cultivated and manured soils and is probably a mutant of the fixed Type A.

***Bacillus Botulinus* in California.**—It is shown by Coleman that the cultivated soils of a narrow strip of coast line in Santa Barbara County, California, are heavily contaminated with the spores of *Bacillus botulinus*, Type A, as well as with those of *B. tetani* and that the virgin soil from the mountain range behind this strip of land also contains the spores of *B. botulinus*, Type A.

***Bacillus Botulinus* in United States.**—A general survey made by Meyer and Dubovsky, during which 1,538 soil, vegetable, feed and manure specimens of every state of the United States, except Virginia, have been studied for the presence of the spores of *Bacillus botulinus*, reveals that *B. botulinus* is a common soil anaerobe of the Western states of the Cordilleran system. It is less frequently encountered in the Atlantic states and is relatively rare in the Middle states, the great plains and the Mississippi Valley. The soil of the Western states, inclusive of the great plains, yields, mainly, *B. botulinus*, Type A, while the Mississippi Valley and Great Lakes region is characterized by a striking predominance of Type B. Similarly prevalent is this latter type in the Atlantic states of Maryland, Delaware, New Jersey, Georgia and South Carolina, while scattered findings of Type A in Maine, New York and Pennsylvania indicate the existence of breeding places in virgin forests and mountains. Soils which are subjected to intensive cultivation and fertilization contain, as a rule, *B. botulinus*, Type B. *B. botulinus* spores are far more prevalent in virgin and pasture soils than in dirt, soil or manure collected from animal corrals, pig pens, etc. Vegetables, fruits and feeds are frequently contaminated with the spores of *B. botulinus*. String bean pods and leaves, moldy hay, ensilage and decayed vegetation may yield a relatively high percentage of positive cultures. Human and animal botulism is not infrequent in those states in which *B. botulinus*, Type A, predominates, or in which the percentage figures of positive cultures exceeds from 20 to 30 per cent. From a practical standpoint, however, *B. botulinus* is ubiquitous, and this survey gives no assurance that heat resistant spores cannot be found anywhere and at any time. The theory which claims that all the pathogenic anaerobes are regular inhabitants of the intestinal canal of animals, the authors assert deserves renewed investigation in the light of this survey on *B. botulinus*.

***Botulinus* Spores in Alaska and Canada.**—*Bacillus botulinus* has not been demonstrable in the coast land soil of the Aleutian Archipelago. *B. botulinus*, Type A, and occasionally



Type B, has been cultivated in moraine, glacier and mountain soil collected around Lake Louise in the Canadian Rockies. Soil samples obtained from the provinces of Prince Edward Island, Nova Scotia, Quebec, Ontario and British Columbia have also furnished positive cultures.

**Botulinus Spores in Belgium and Other Countries.**—*Bacillus botulinus*, Type B, has been demonstrated in soil and vegetable specimens collected in Belgium, Denmark, England, the Netherlands and Switzerland. *B. botulinus*, Type A, has been found consistently absent. The spores are widely distributed, but they are neither numerous nor very resistant to heat.

**Botulinus Spores in Hawaiian Islands and China.**—*Bacillus botulinus*, Type B, is frequently found in the soils obtained from the Island of Oahu, in the territory of Hawaii, and from the provinces of Chilili and Shansi, in China. Type A has been found only in two Hawaiian and in one Chinese soil specimen.

**Bacillus Tetani in Soil and on Vegetables.**—The spores of *Bacillus tetani* are frequently encountered in well manured, cultivated or garden soil, and on vegetables obtained from several states east of the Mississippi, Switzerland and China. In the United States even virgin forest soil has yielded cultures of *B. tetani*. The soil of the Western states is relatively free from this anaerobe.

**Pathogenicity of Bacillus Botulinus.**—Coleman and Meyer assert that massive doses of toxin-free spores of *Bacillus botulinus* are pathogenic when introduced into the animal body. These spores and the vegetative forms arising from them are rapidly disseminated throughout the tissues of the body. Toxin-free spores of *B. botulinus* germinate, and the vegetative forms arising from this germination multiply and liberate toxin in the animal body.

**Heat Resistance of Bacillus Botulinus Spores.**—The heat resistance of *Bacillus botulinus* spores in the juices of seventeen varieties of canned food examined by Esty and Meyer shows a variation from less than ten minutes to 230 minutes at 100 C.

### Kentucky Medical Journal, Bowling Green

December, 1922, 20, No. 12

County and Community Diagnosis Laboratory. V. R. Jones, Shelbyville.—p. 836.

Arteriosclerosis and Hypertension. J. W. Morris, Louisville.—p. 841.  
Present Views Regarding High Blood Pressure. F. C. Askenstedt, Louisville.—p. 845.

Deafness from Wax Impactions. Three Cases. S. G. Dabney, Louisville.—p. 854.

Partial Report of Examination of Eye, Ear, Nose and Throat of Patients in Eastern Kentucky State Hospital. J. A. Stucky, Lexington.—p. 855.

Case of Pernicious Anemia of Aplastic Type; Remarks on Pernicious Anemia. J. R. Morrison, Louisville.—p. 856.

### Missouri State Medical Association Journal, St. Louis

January, 1923, 20, No. 1

\*Arterial Hypertension. L. S. Milne, Kansas City, Mo.—p. 1.

Paralysis Agitans. D. S. Booth, St. Louis.—p. 4.

Scopolamin-Morphin Seminarcosis in Second Thousand Deliveries in Barnes Hospital. O. S. Krebs and L. R. Wilson, St. Louis.—p. 12.

Scarlet Fever. H. B. Norton, Center.—p. 22.

Endocrine Balance. M. L. Sands, Warsaw.—p. 24.

**Arterial Hypertension.**—Having determined the cause of the hypertension and the extent to which it has caused secondary systemic changes, Milne says that a rational dietary, calculated to support the nutrition and strength of the subject, should be adopted, in addition to the necessary limitation of exercise and various hygienic, psychopathic, eliminative, hydrotherapeutic, electrotherapeutic, and sometimes surgical remedies, administered to combat the etiologic factors involved and to lower the existing state of hypertension and so at least prevent the incidence of the serious terminal events of this disease.

### Nebraska State Medical Journal, Norfolk

January, 1923, 8, No. 1

Epigastric Hernia. A. J. Brown, Omaha.—p. 1.

Focal Infection. A. D. Dunn, Omaha.—p. 5.

Suprapubic and Perineal Prostatectomy; Advantages of Each. E. Davis, Omaha.—p. 9.

Medical Legislation; Public and Doctor. W. H. Wilson, Lincoln.—p. 14.  
Twentieth Century Obstetrics—Criticism. A. B. Somers, Omaha.—p. 16.

Chronic Cystic Mastitis. M. Emmert, Omaha.—p. 24.

Peritoneal Infections of Female Pelvis. B. A. Bobb, Mitchell, S. D.—p. 28.

### New York Medical Journal and Medical Record

Jan. 17, 1923, 118, No. 2

Migratory Tumors of Abdomen. A. W. Collins, San Francisco.—p. 65.  
Iodin and Iodotherapy Based on New Iodin Preparation. H. J. Novack, Philadelphia.—p. 69.

Biochemical Explanation of Iodin Molecule. P. R. Vessie, Gowanda, N. Y.—p. 74.

Immobility of Diaphragm; Report of Cases of Bilateral Immobility. J. H. Pryor, Buffalo, N. Y.—p. 75.

Rhinologic Surgeon's Position in Diseases of Maxillary Sinus and Relation of Antra to Affections of Other Sinuses. H. M. Hays, New York.—p. 79.

Case of Perisinus Abscess. J. C. Scal, New York.—p. 83.

Suicide Among American Physicians—Its Causes and Suggestions for Prevention. S. A. Knopf, New York.—p. 84.

Significance of Protein Skin Reactions in Bronchial Asthma. M. M. Peshkin, New York.—p. 88.

Fractional Test Meal Method of Rehfuß Versus Single Test Meal of Ewald. M. Golob, New York.—p. 94.

Gallbladder Surgically Considered. H. Cohen, New York.—p. 97.

Aseptic Local Anesthesia as Applied to Anal Region: With Especial Reference to Anesthetic Composition. E. G. Martin, Detroit.—p. 100.

\*Thoracic Abdominal Gate. J. J. Rectenwald, Pittsburgh.—p. 102.

Dawn of Surgery. Ritual Mutilations of Primitive Magic and Circumcision. J. Wright, Pleasantville, N. Y.—p. 103.

**Thoracic Abdominal Gate.**—The object of the instrument devised by Rectenwald is said to be to make a gate or trap-door for the pleura, lung, stomach, liver, colon, cecum, ovaries, uterus and bladder. By means of this instrument the thorax and abdomen can be opened and closed at will and treatments may be made over an extended period of time without repeated incisions. The conception of the instrument was brought about by Rectenwald's desire to apply radium directly to cancer of the stomach in the form of needles, tubes or plates over an extended period of time and avoiding repeated incisions.

### New York State Journal of Medicine

January, 1923, 23, No. 1

\*Use of Schick Test and of Toxin-Antitoxin Injections in Prevention of Diphtheria. W. H. Park, New York.—p. 1.

\*Results of Active Immunization with Diphtheria Toxin-Antitoxin in the Public Schools of New York City (Manhattan and the Bronx). A. Zingher, New York.—p. 6.

Gonococcic Vulvovaginitis in Children as a Hospital Problem. E. J. Wynkoop, Syracuse.—p. 7.

Trend of Attitude Toward Heart Disease in Children. G. R. Irving, New York.—p. 11.

\*Effect of Quinidin Sulphate on Ambulatory Case of Auricular Fibrillation. W. B. Farnum, New York.—p. 15.

Treatment and Prevention of Certain Mental Disorders. H. A. Cotton, Trenton, N. J.—p. 18.

\*The Problem Child. S. R. Leahy, Brooklyn.—p. 23.

Remarkable Freedom from Local Recurrence Following Chemical Removal of Advanced Cancerous Breast. C. W. Strobell, New York.—p. 27.

**Use of Schick Test and of Toxin-Antitoxin Injections in Prevention of Diphtheria.**—The New York Department of Health has under observation and has indexed 180,000 children, of whom 90,000 have been Schick tested. Of these 90,000 about 60,000 gave the negative Schick test originally; about 20,000 were negative on the retests after the injections of toxin-antitoxin, while about 10,000 of those who were originally positive and who received two or three injections, have either not been retested or, on retest, were found to be positive. During January, February and March, in 90,000 untreated schoolchildren, there occurred fifty-four cases of diphtheria and in 90,000 who had been Schick tested, and when positive were given two or three injections of toxin-antitoxin, there were only twelve cases. Therefore, among 90,000 untreated schoolchildren there developed four and one-half times as many cases of probable diphtheria as developed in the 90,000 tested children. Among 8,200 children who were originally Schick positive and were not retested after the injections, four cases of diphtheria developed. These 8,200 were, as a rule, among the latest to receive the injections. The 1,800 children who in spite of the injections developed insufficient antitoxin to prevent on a retest a moderately



positive Schick reaction, showed the highest incidence of the disease. This result emphasizes the necessity of a Schick test several months after the completion of the injections. Those children who still give the positive reaction should receive a second series of injections. As corroborative of these results, it is interesting to note that during the past six months diphtheria cases and deaths in New York City have been less numerous than ever before. Every effort is to be made to complete the immunization of every school child in New York City.

**Results of Active Immunization with Diphtheria Toxin-Antitoxin.**—The results of the retests for active immunity in injected children show that with the same mixture of toxin-antitoxin the immunity response in the schools has varied in different groups of children as much as from 21 to 75 per cent. A second series of one or two injections of toxin-antitoxin given at the time of the retest to the children who had failed to become immune after the first series of two injections was followed by the development of an active immunity in from 60 to 80 per cent. of the children so treated. Altogether the children in the various schools who are injected with from two to four doses of toxin-antitoxin developed an active immunity in the proportion of from 70 to 90 per cent. No symptoms of anaphylactic shock were noted with the giving of the second series of toxin-antitoxin injections. There are now being given in the schools three injections of toxin-antitoxin instead of two. The dose is 1.25 c.c. The injections are given at an interval of two weeks instead of one.

**Effect of Quinidin Sulphate on Ambulatory Cases of Auricular Fibrillation.**—Of twenty-two ambulatory cases of auricular fibrillation reported on by Farnum, only three responded to quinidin sulphate with normal auricular ventricular sequence. Of these three cases, one case remained regular for only a few days. The remaining two cases are still regular, the quinidin sulphate having been given about six weeks ago. In the three cases which became regular, the compensation was not bettered to the extent hoped for or reported by other investigators. In cases with unstable cardiac mechanism, with rapid rate, pulse deficit, and little cardiac reserve, no benefit was derived from the administration of quinidin sulphate. The patients were in some instances made worse. All were glad to return to digitalis, and soon regained their former compensation under that drug.

**The Problem Child.**—It is Leahy's opinion that the future usefulness of psychiatry lies in preventive measures. These preventive measures, in order to have their greatest effect, must be applied early in the life of the individual when he is still learning to face reality and to emancipate himself from his former egocentricity. This means that the problems presented in the conduct disorders of early childhood are not exclusively disciplinary but often entirely psychiatric.

### Southern Medical Journal, Birmingham, Ala.

January, 1923, 26, No. 1

- \*Transformation of Intestinal Flora. C. C. Bass, New Orleans.—p. 1.
- Problem of Negro Child. J. R. Snyder, Birmingham.—p. 8.
- Relation of Radiology to Cancer Control. T. A. Groover, Washington, D. C.—p. 11.
- \*Case of Epilepsy with Megacolon (Hirschsprung's Disease) and Polymastia. E. B. Block, Atlanta, Ga.—p. 15.
- Science vs. Magic in Evolution of Preventive Medicine. S. W. Welch, Montgomery, Ala.—p. 18.
- Our Southern Problem. E. G. Williams, Richmond, Va.—p. 20.
- Posthospital Care of Surgical Patients. H. H. Trout, Roanoke, Va.—p. 26.
- Future of Orthopedic Surgery in South. W. B. Owen, Louisville.—p. 31.
- Railroad Surgeon: Present, Past and Future. L. E. Burch, Nashville.—p. 33.
- \*Torsion of Appendices Epiploicae; Report of Case. S. O. Black, Spartanburg, S. C.—p. 35.
- Certain Anatomic and Physiologic Considerations Bearing on Heterophoria. W. B. Lancaster, Boston.—p. 38.
- \*Dermoid of Conjunctiva; Report of Case. C. M. Miller, Richmond, Va.—p. 42.

**Transformation of Intestinal Flora by Lactose.**—Bass again calls attention to his work with lactose given to transform the intestinal flora. Daily ingestion of sufficiently large amounts of lactose results in rapid increase of *Bacillus*

*acidophilus* and in due course of time, if the quantity is sufficient, all other bacteria in the intestinal flora are reduced to a negligible quantity. In some instances, however, it required more than 300 gm. of lactose per day to establish *Bacillus acidophilus* as the predominating organism. Unfortunately the quantity of these sugars necessary is too large to be continued over long periods of time, hence the practical application of this method must be very limited. The researches made by Bass on the use of cultures of *B. acidophilus* for therapeutic purposes, including a large number of experiments on twenty-three different human subjects, have yielded results which practically agreed with those of Rettger and Cheplin. A note of warning is sounded against making the same kind of mistake with *B. acidophilus* that was made with *B. bulgaricus*. Already enthusiastic workers have reported most striking therapeutic results from the administration of broth cultures of *B. acidophilus* in teaspoonful doses, only a small fraction of the amount of culture that others have found necessary to change noticeably the intestinal flora. Commercial interests have already placed on the market *B. acidophilus* in the form of tablets, capsules and liquids, and physicians are prescribing them. Bass examined some of these preparations to determine the number of viable *B. acidophilus* contained therein. In the instance of tablets, none of those examined was found to contain as many as 1,000 viable bacteria of any kind per tablet. If it should be granted that all the viable bacteria present were *B. acidophilus*, it would take more than 1,000,000,000 tablets, or more than 20 tons, to contain as many bacilli as are contained in 1,000 c.c., or the usual daily dose, of the acidophilus milk, the quantity found, by most investigators at least, to be necessary to transform the flora. Bacteria were more numerous in the commercial liquid cultures examined. If they were all *B. acidophilus*, a patient would have to drink 7 or 8 gallons daily to get as many as he would in 1,000 c.c. of the acidophilus milk culture. Only fresh cultures produced according to the proper bacteriologic methods should be used.

**Epilepsy with Megacolon and Polymastia.**—Discussing the etiology of epilepsy, three possibilities are considered by Block: (1) epilepsy and megacolon may represent (equally) evidence of defective development of the nervous system; (2) the megacolon by pressure may produce an alteration in the cerebral circulation; and (3) the resulting constipation from megacolon may furnish a toxic cause for convulsions in those predisposed to them. In the case reported no other physical defect could be found except polymastia, a convolutional atrophy of the skull, from apparent pressure, but without the usual symptoms of pressure being present, full tortuous veins in the right fundus, and the megacolon. While the last was not of the extreme degree found in many of the published reports and fatal cases, it is still sufficient to produce abdominal distension, tympany, and constipation, and Block says must be regarded as pathologic. The occurrence of polymastia, Block says, must be regarded as a stigma of degeneration, but whether such atavistic phenomena should be regarded as evidence of physical strength or weakness is undecided. The conclusion reached by Block in regard to his case is that increased intra-abdominal pressure caused a gradual increase in intracranial pressure, which in turn caused a convolutional atrophy of the skull, and tortuous veins of the right retina.

**Torsion of Appendices Epiploicae.**—Black asserts that only sixteen cases of true torsion of the appendices epiploicae within the abdominal cavity have been reported in the literature. He adds one case. A man, aged 60, after serving as an active pallbearer at the funeral of a friend whose casket was very heavy, suddenly felt a rather severe pain in the mid left region of the abdomen, which disappeared almost immediately. Four or five hours later he felt an indefinite soreness through the left lower abdominal region which disappeared on recumbency. He slept soundly and awakened the following morning feeling well. He had not long been out of bed before the soreness returned about 2 inches to the left of, and 2 inches below, the umbilicus. A tedious job and a long automobile trip aggravated the discomfort. The following morning the soreness was lessened, but that afternoon



it returned, became rather severe, and the man went to bed. At 9 o'clock the next morning he felt perfectly well, but the leukocyte count was 9,000. At 3 p. m. the leukocyte count was 10,000 and there was unquestionable tenderness on pressure over the left middle and lower abdominal regions. The next day, at about 10 a. m., the fourth day since the onset, the temperature was 99 F., the white blood cells numbered 11,200, and the soreness and tenderness had distinctly localized over a point on the left side corresponding to McBurney's point on the right. It looked like a typical left sided appendicitis. It was decided to operate. Lying immediately beneath an edematous peritoneum, almost completely encompassed by the left border of the omentum, was a large bluish black mass the size of an orange. It was rapidly becoming gangrenous and when isolated was found to be an appendix epiploica, attached to the lower portion of the descending colon. Its pedicle was twisted several turns on itself.

**Dermoid of Conjunctiva.**—In Miller's case the family history and personal history were negative. A few weeks after birth, the child's parents noticed a growth under the left eyelid. A short time later a hair or two projected under the lid and these continued to grow in length and increase in number until there were six or seven long black hairs growing from under the lid. These hairs grew rapidly and were frequently cut to prevent their hanging too far down on the face, but they were always left sufficiently long for the cut ends to project beyond the lids. The tumor was removed. It contained a yellowish fluid, and a small bony mass the shape and size of the crown of a canine deciduous tooth.

### Texas State Journal of Medicine, Ft. Worth

December, 1922, 18, No. 8

- Chronic Nontuberculous Lung Diseases. W. W. Watkins, Phoenix, Ariz.—p. 396.  
Pulmonary Abscess. J. N. White, Texarkana.—p. 398.  
Indications and Contraindications for Artificial Pneumothorax in Pulmonary Tuberculosis. A. E. Greer, Houston.—p. 400.  
Tuberculosis Responsibility. H. L. Wilder, Clarendon.—p. 402.  
\*County Sanatoria for Far Advanced Consumptives. J. B. McKnight, Sanatorium.—p. 405.  
Relationship Between Chronic Suppuration, Nasal Sinusitis and Pulmonary Infections. E. M. Sykes, San Antonio.—p. 408.  
\*Administration of Antitoxin in Early Treatment of Diphtheria. L. M. Whitsitt, Ft. Worth.—p. 410.

**Hospitals for Advanced Cases of Tuberculosis.**—The hospital for advanced cases of tuberculosis in McKnight's opinion should be so situated, constructed and managed, as to draw from the community the vast number of advanced cases spreading infection in family circles, in addition to the group of homeless or near-homeless forming at present the bulk of cases in such institutions. In the interest of the community, as well as of the individual patient, the admission of these cases to an institution should come early in their course. With the right arrangement and regimen, calculated to relieve suffering and lead, where possible, to improvement or arrest of the process, the hospital for advanced cases is bound to win rapidly the support of the medical profession and the community, and become a powerful agency in the fight for the suppression of the disease.

**Prevention of Diphtheria.**—Whitsitt emphasizes that the mortality would be materially reduced if physicians would insist on a more hygienic condition of the nose and throat, removal of enlarged tonsils and adenoids, keeping away from poorly ventilated public places, especially during the fall, winter and early spring, when catarrhal conditions are more common. The use of the Schick test and the establishment of a prolonged immunity by the use of toxin-antitoxin, and the universal use of antitoxin in all exposures, will prove specifically prophylactic. It will never be possible, Whitsitt believes, to lower the mortality from diphtheria by elimination, as has been accomplished in typhoid and yellow fever, because of the great number of carriers. While diphtheria is contagious to the nonnatural immune, he is of the opinion that a large percentage of cases in children between the ages of 1 and 2 years, are of auto-infectious origin, because they are carriers, and at the first opportunity presented, which is caused by a catarrhal throat or nose, the germs become active.

### FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### Annals of Tropical Medicine and Parasitology, Liverpool

December, 1922, 26, No. 4

- \*Unusual Type of Nodular Leprosy in Sudan. R. G. Archibald.—p. 341.  
Ancylostoma Braziliense. C. Lane.—p. 347.  
Intra-Uterine Infection with Ancylostoma Caninum in Dogs. S. Adler and E. J. Clark.—p. 353.  
Cestodes from Indian Birds; Ligula Intestinalis. T. Southwell.—p. 355.  
\*New Malaria Parasite of Man. J. W. W. Stephens.—p. 383.  
Bionomics of Stegomyia Calopus, Meigen, in Brazil. C. J. Young.—p. 389.  
Occurrence of Larvae of Onchocerca Volvulus (Leuckart, 1893), in Skin of Natives of Gold Coast. J. F. Corson.—p. 407.  
Case of Sleeping Sickness (T. Gambiense) Treated by "Bayer 205." J. W. W. Stephens and W. Yorke.—p. 421.  
Bionomics of Stegomyia Calopus, Meigen, in Brazil. Part II. R. M. Gordon.—p. 425.  
\*Rôle of Cockroaches in Disease. J. W. S. Macfie.—p. 441.  
Occurrence of Xenopsylla Astia, Roghs., in West Africa. A. M. Evans.—p. 449.  
\*Case of Blackwater Fever. A. Patrick.—p. 451.  
Case of Trypanosomiasis. A. J. Mackenzie.—p. 457.  
Onchocerca Volvulus. J. W. S. Macfie and J. F. Corson.—p. 459.  
New Species of Filarial Larva Found in Skin of Natives in Gold Coast. J. W. S. Macfie and J. F. Corson.—p. 465.

**Unusual Type of Nodular Leprosy in Sudan.**—In the case reported by Archibald, the eruption apparently commenced on the face in the form of small shotty papules, similar ones eventually appearing on the forehead, ears, trunk and upper and lower extremities. The eruption caused little or no inconvenience. On examination, it was found that the skin of the face, neck, anterior and dorsal aspects of the trunk, and the flexor and extensor aspects of the arms and legs showed numerous miliary papules varying from 0.3 to 0.5 cm. in diameter. The majority of these lesions were discrete, with a smooth surface, circular contour, pink color, and of a shotty consistency; some of them showed a slight inflammatory reaction at the base. In certain areas, more especially on the neck and arms, many of the papules showed a circular depression or umbilication in the center, while others showed simply a pale central area. No pustulation was noted. The largest lesions were on the face, and here the majority of them were discrete, whereas those on the ears had coalesced and caused considerable thickening of the tissues, producing an appearance not unlike that of hematoma auris. Papules were also present over both superciliary regions, where a slight degree of madarosis was noted. The skin of the arms was more affected than that of the lower extremities, both flexor and extensor aspects being involved. The intervening portions of the skin presented no abnormalities, except in a few areas on the face where there was a certain degree of erythema. No nodules or ulcers were detected in the buccal mucous membrane; but the posterior fauces and larynx were slightly inflamed. The submaxillary and axillary lymph glands were slightly enlarged and firm on palpation. The diagnosis was made only when microscopic examination of hematoxylin-eosin stained preparations showed numbers of acid-fast bacilli, morphologically resembling leprosy bacilli.

**Plasmodium Ovale: New Malaria Parasite.**—The characteristics of the parasite found by Stephens, so far as concerns the medium forms, are: a nonameboid, pigmented, compact, round or oval parasite, resembling the quartan form, in a red cell showing Schuffner's dots, which is either normal in size or only slightly enlarged. The pigment, so far as can be judged in stained specimens, appears to be brownish black, and granular rather than spicular. A double infection of a red cell was only seen once. No forms that could be interpreted as gametes were seen. This parasite appears to resemble that found by Ahmed Emin in 1914 in the case of six pilgrims at Camaran in the Red Sea, and figured and described by him as *Plasmodium vivax*, var. *minuta*. Stephens proposes to term his organism *Plasmodium ovale*.

**Rôle of Cockroaches in Disease.**—The following organisms appeared to pass unharmed through the intestine of the cockroach, *Periplaneta americana*: *Bacillus tuberculosis*, *B. leprae*,



cysts of *Endameba histolytica*, *E. coli* and of an endameba of a monkey resembling *E. coli*, cysts of *Giardia intestinalis*, and eggs of *Ancylostoma duodenale*, *A. ceylonicum*, *Necator americanus*, *Ascaris lumbricoides*, *Trichuris trichiura*, *Taenia saginata*, and *Schistosoma haematobium*. On the other hand, gonococci, *Endameba histolytica*, *E. coli*, and an endameba of a monkey resembling *E. coli* (in the vegetative stages), eggs of *Aphiochaeta xanthina*, and, in two experiments each, *B. typhosus*, *B. paratyphosus* B, and *B. dysenteriae* (Flexner Y) were not recovered in the feces of cockroaches after experimental feeding. No evidence was obtained that any of the organisms used in the experiments established themselves as parasites in the intestine of the cockroaches.

**Case of Blackwater Fever.**—A case is described by Patrick in which hemoglobinemia was marked. The blood urea was found to be much increased after a short period of anuria.

### British Medical Journal, London

Jan. 6, 1923, 1, No. 3236

Acute Constitutional Symptoms Due to Radiations. H. Rolleston.—p. 1.

\*Investigation of Dyspeptics. J. Ryle.—p. 5.

\*Further Clinical Experience with Insulin in Treatment of Diabetes Mellitus. F. G. Banting, W. R. Campbell and A. A. Fletcher.—p. 8.

\*Possible Mode of Causation of Diabetes Mellitus. L. B. Winter and W. Smith.—p. 12.

\*Vitamin Content of Certain Proprietary Preparations. K. H. Coward and A. J. Clark.—p. 13.

\*A pituitarism and the Anencephalic Syndrome. D. L. Barlow.—p. 15.

\*Purpura Treated by Injection of Human Blood. M. Dixon.—p. 16.

\*Treatment of Epilepsy. J. McCartney.—p. 16.

\*Trauma and Appendicitis. C. J. G. Taylor.—p. 17.

Variations of Normal Temperature. H. H. Haward.—p. 17.

**Investigations of Dyspeptics.**—Ryle does not believe that there is, or ever will be, a place in medicine for such a specialism as gastrology. Probably less than one third of all chronic dyspepsias are due to disease of the stomach, and even in many of these the primary factors have been situated elsewhere. The introduction of chemical and radiographic diagnostic methods has been of inestimable value, but the chief value of these methods, Ryle believes, will finally be in the direction of helping to make a better interpretation of symptoms and so to become more skilled at clinical diagnosis. Early and accurate diagnosis is the first essential for adequate treatment. Early diagnosis depends on appreciation of possibilities and causes and on good clinical sense; accurate diagnosis, in many of the dyspepsias, can be arrived at only with the aid of routine investigations.

**Insulin Treatment of Diabetes Mellitus.**—A general plan of investigation and treatment of patients has been adopted provisionally by Banting and his associates to determine those patients who require treatment with insulin and the requisite dosage to be employed. On admission to hospital the history and physical condition of each patient is investigated. Patients admitted in coma or in the precomatous state, whether of the accidental type, occurring with a good carbohydrate tolerance, or as a sequel to slowly deteriorating carbohydrate tolerance, are immediately given insulin treatment. For other cases a diet based on the normal basal calory requirement for the age, height, weight and sex of the patient is calculated. This diet contains sufficient protein to maintain nitrogenous equilibrium, and carbohydrates and fats in such a ratio as to avoid the excessive production of acetone and diacetic acid. Having patients fast for a day has helped to attain constancy of sugar excretion more rapidly. Patients are kept in bed for a variable period following admission to hospital, and afterward only light exercise is permitted. Examinations of the blood and urine are carried out daily for a period of a week or more. At the end of this period on a constant diet the patients who are sugar free are advised to continue dietetic treatment in view of the shortage of insulin. Those who are showing decided glycosuria and hyperglycemia, with possibly various degrees of acidosis in addition, are selected for insulin treatment. Having a preparation of insulin known to be potent and to contain approximately one unit to 1 c.c. according to the pharmacologic assay, the patient is given an amount calculated to be somewhat less than that required to render the

urine sugar free. Insulin is administered, according to the amount required, in one, two, or three doses, at or shortly before meals. Subcutaneous injection is the method of choice. By examination of the urine at short intervals it is determined approximately when the patient becomes sugar free, and the subsequent dosage is adjusted to maintain this condition. Special care is taken that the food consumed by each patient is appetizing in appearance, palatable to the taste, and well served. Complete records are kept of twenty-four hour specimens of urine, which is collected in the usual manner, and examined qualitatively and quantitatively for sugar, acetone, diacetic acid and total nitrogen, and the usual routine tests are made for volume, specific gravity, albumin, and character of the sediment. Up to the present time more than fifty cases of diabetes mellitus have been treated with insulin, and some have been under treatment continuously for several months. Although the most striking results have been seen in children and young adults, all patients have been benefited by the treatment. Under treatment with insulin, in patients who are not otherwise amenable to treatment, (a) glycosuria is abolished; (b) ketones disappear from the urine and the blood; (c) blood sugar is markedly reduced and maintained at normal levels; (d) the alkali reserve and alveolar carbon dioxide of patients suffering from acidosis and in a state of coma return to normal; (e) the respiratory quotient shows evidence of increased utilization of carbohydrates; (f) the cardinal symptoms of diabetes mellitus are relieved and the patients show marked clinical improvement. Insulin is a specific in the treatment of diabetic coma. Certain procedures are suggested as a guide in its administration. Hypoglycemic reactions in man have been studied. Hypoglycemic reactions following insulin are relieved by the administration of carbohydrates and also by the injection of epinephrin.

**Cause of Diabetes Mellitus.**—It has been shown by Winter and Smith that the normal blood sugar in man and animals has a lower rotatory power than would be given by the  $\alpha$ - $\beta$  equilibrium form of glucose as deduced from the copper reduction value. Various facts mentioned suggest that normal blood sugar is gamma glucose. That ingested glucose or fructose is rapidly converted into normal blood sugar was shown by feeding experiments on normal persons. After administering from 100 to 150 gm. glucose or fructose no alteration in the nature of the blood sugar could be detected. In cases of diabetes mellitus this sugar is not present in amounts susceptible of detection by the method employed. The polarimeter reading in these cases is initially greater than the copper reduction value, and the curve gradually falls until the copper value is reached. This suggests that besides  $\alpha$ - $\beta$  glucose, disaccharids or other substances with a polarimeter: copper reduction ratio greater than that of  $\alpha$ - $\beta$  glucose are present in the blood of diabetic persons. The author suggests that  $\alpha$ - $\beta$  glucose cannot be directly stored or utilized, but that an enzyme is responsible for the conversion of  $\alpha$ - $\beta$  glucose into gamma glucose. The absence or inactivation of this enzyme is suggested as the direct cause of diabetes mellitus.

**Vitamin Content of Certain Proprietary Preparations.**—The vitamin content of certain well known proprietary preparations which are advertised in the medical press as containing vitamins was investigated by Coward and Clark. The preparations tested contained vitamins A and B, except in one instance in which case the tests failed to show the presence of vitamin A in the quantities tested. A comparison between the vitamin content of the proprietary preparations and the vitamin content of those ordinary foods which are rich in vitamins shows that the former contain less vitamins than the latter. The vitamin A content of the proprietary foods was in all cases less than that of butter obtained from grass fed cows, and less than one hundredth that of active specimens of cod liver oil. The vitamin B content of the proprietary foods was in all cases less than that of wheat germ or of yeast. None of the preparations is considered to be a substitute for cod liver oil as a source of vitamin A, for in no case does the total daily adult dose of the proprietary food contain as much as one tenth of the vitamin A content of a teaspoonful of cod liver oil.



**Apituitarism and Anencephalic Syndrome.**—Four anencephalic fetuses were examined by Barlow. In each instance the anterior (pharyngeal) portion of the pituitary gland was found without much difficulty in its usual situation and resting on the body of the sphenoid. In none of the cases was any real attempt at the formation of a sella turcica apparent, though the gland was of a size approximating that in a normal full time fetus. In one instance a process of apparently neuroglial tissue, probably representing the pars nervosa, was found; and it is noteworthy that this was the only one examined comparatively soon after delivery. In all cases microscopic sections displayed a structure corresponding with the epithelial segment of the pituitary body—namely, strands of polygonal cells with somewhat granular protoplasm and rounded nuclei, separated by a loose connective tissue, in which were abundant thin walled vessels. From the position and structure of these glands Barlow has no doubt that they represent the epithelial portions of the pituitary. As a result of the discovery of the anterior segment of the pituitary gland in four successive typical examples of the anencephalic syndrome, Barlow thinks it may be concluded that the other features of the condition are certainly not due to apituitarism, and that any conception of the functions of the gland based on such an assumption is erroneous.

**Purpura Treated by Injection of Human Blood.**—The success of the treatment of hemorrhage of the new-born by injection of parental blood suggested to Dixon the use of the same method in purpura. The result has been most encouraging. Dixon has injected from 2 to 5 c.c. of blood, taken from the brachial cephalic vein, into the gluteal muscles. Clotting is prevented by sterilizing the syringe and needle in a solution of magnesium sulphate. The method has been used in four cases, with gratifying results in all, and in the very early cases with complete abortion of the attack.

**Treatment of Epilepsy by Potassium Bromid and Borax.**—Eighteen patients have been treated by McCartney by this method. He found that he obtained the best results with potassium bromid, 15 grains; borax purificatus,  $7\frac{1}{2}$  grains; Fowler's solution, 2 minims; three times daily. The changes noted in the condition of the patients were: (1) marked general mental improvement; (2) freedom from stupor after convulsions; (3) disappearance of irritability and quarrelsome tendencies; (4) complete change of habits. The continuous treatment has had no deleterious effect on the health of the patients.

**Trauma and Appendicitis.**—In both of the cases reported by Taylor the attack was definitely ushered in by violence—in the one by a direct blow on the abdomen, in the other by a severe strain.

### Journal of Laryngology and Otology, Edinburgh

January, 1923, 38, No. 1

Present Status of Radium in Laryngeal and Esophageal Cancer in United States. H. H. Forbes, New York.—p. 1.

Septic Sinus Thrombosis: Diagnosis and Treatment. W. Milligan.—p. 9.

Identification of Larvae of Diptera (Flies) Which Cause Nasopharyngeal and Aural Myiasis in Man. W. S. Patton.—p. 18.

Spasmodic Rhinitis: Critical Review. St. C. Thomson.—p. 28.

### Medical Journal of Australia, Sydney

Dec. 16, 1922, 2, No. 25

\*Basal Metabolic Rates in Exophthalmic Goiter. R. L. T. Grant.—p. 697.

Chronic Suppurative Otitis. H. M. Jay.—p. 704.

Postgraduate Work in Europe. J. W. D. Hooper.—p. 707.

Uterovesicovaginal Fistula. H. Bullock.—p. 709.

**Partial Thyroidectomy Better than Medical Treatment of Exophthalmic Goiter.**—The basal metabolism of ten cases of exophthalmic goiter and one case of toxic goiter was studied by Grant. In every case the basal metabolic rate was raised above the standard accepted as the normal average when taken prior to any active treatment. From observation of these cases Grant is convinced that the medical treatment of exophthalmic goiter is unsatisfactory and that the best results are given by removal of part of the affected gland. The majority of the patients in this series had their operation performed under local anesthesia, procain being used.

### South African Medical Record, Cape Town

Dec. 9, 1922, 20, No. 23

The Legal Case. S. V. Elliott.—p. 449.

Control of Malaria in South Africa. G. A. P. Ross.—p. 450.

Case of Late (Tenth Day) Postpartum Eclampsia. H. B. Walker.—p. 458.

Undulant (Malta) Fever in South Africa. D. P. Marais.—p. 459.

Modern Treatment of Asthma. A. Bloom.—p. 464.

### Annales de Médecine, Paris

December, 1922, 12, No. 6

\*Hirschsprung's Disease. R. Bensaude and P. Hillemand.—p. 425.

\*Treatment of Rheumatism. M. Roch and S. Katzenelbogen.—p. 463.

\*Secretin. K. Djenab.—p. 475.

\*Diabète Insipidus. Lortat-Jacob and Turpin.—p. 480.

**Megacolon.**—Bensaude and Hillemand review the question of megacolon. The diagnosis of typical cases is not difficult: extreme constipation; great enlargement of abdomen; characteristic roentgenograms; the tumor presents peristaltic movements at times; and the rectum, which is usually empty, will retain 2 or 3 liters of enema without discomfort. Some cases may give clinical signs of pneumothorax. Medical treatment should be tried, although it is usually without success. Surgery gives better results. Ileosigmoidostomy is comparatively easy and may be sufficient. Colectomy is dangerous, yet may insure a final cure.

**Treatment of Rheumatism with Casein.**—Roch and Katzenelbogen gave intramuscular injections of 0.5 to 2 c.c. of a 10 per cent. solution of casein repeated after four or five days, in twenty-six cases of rheumatism. The best results were obtained in acute cases. Subacute cases sometimes were also influenced favorably. One case of sciatica recovered perfectly. They advise this protein therapy only as supplementary to salicylic medication, not in its place.

**Secretin.**—Djenab found that secretin from the deep layers is more efficient than from the superficial layer of the mucosa. The action is much weaker if it is injected into a mesenteric vein and thus passes through the liver. Injections into arteries are also less effective than into the saphenous vein. Feeding animals with fats increases the amount of secretin.

**Diabetes Insipidus.**—Lortat-Jacob and Turpin give an extensive review of diabetes insipidus.

### Bulletin de l'Académie de Médecine, Paris

Dec. 12, 1922, 88, No. 41

\*Tuberculosis and Pregnancy. E. Sergent.—p. 466. Idem. V. Wallich.—p. 477.

\*Medicolegal Aspect of Therapeutic Abortion. V. Balthazard.—p. 480.

\*Herpes Zoster. G. Marinesco.—p. 487.

"Knock-Out" and War Psychoses. L. Livet.—p. 501.

\*Organotherapeutic Action of Milk. Cassoute.—p. 503.

The Prizes Offered by the Académie.—p. 506.

**Tuberculosis and Pregnancy.**—Sergent emphasizes that there are two principal types of tuberculosis to be considered. In one the tuberculosis was present before the pregnancy, in the other it became manifest during pregnancy or after delivery. In the first type three varieties can be distinguished: (1) Clinically recovered cases in which the infection flares up during the first weeks of pregnancy. Usually the women are young. An early abortion saved the lives in three such cases in Sergent's experience. In another case a pregnancy, occurring against his advice three years after an affection of an upper lobe, had been allowed to come to term, because the woman never felt as well as during the pregnancy. Ten days after delivery, the tuberculous process in the lungs was relighted and the patient succumbed in two months. (2) Cases with active, but stationary lesions. These women, contrary to the first variety, are usually over 30 or 35 years of age. They appear to have adapted themselves to tuberculosis. These cases form the bulk of the statistics, which show that some women, even with lung cavities, can endure several pregnancies. (3) Women with active tuberculosis which becomes more acute with the pregnancy. There is no indication for abortion in these cases, because death is inevitable. The second principal type includes women with latent tuberculosis, in which distinct clinical signs did not appear before gestation. In unilateral cases, pneumothorax may be of use. Bilateral cases die. If the signs start after



delivery, the prognosis is comparatively good. Sergeant insists on the frequency of tuberculosis in pregnancy. In his private practice, in almost 26 per cent. of eighty-nine tuberculous women, tuberculosis appeared less than ten months after delivery. In two thirds it was the first pregnancy. It is impossible to dogmatize; case must be considered individually.

**Tuberculosis and Pregnancy.**—Wallich points out that even the optimists are not in reality optimistic about the relation of pregnancy to tuberculosis. Obstetric statistics are not reliable, because tuberculous pregnant women are usually sent to the medical clinic to avoid exposure of healthy mothers and infants.

**Medicolegal Aspect of Therapeutic Abortion.**—Balthazard discusses the medicolegal questions arising from the fact that the French law prohibits every interruption of pregnancy. After discussing several theories, he agrees with those who see the legal foundation of therapeutic abortion in a state of necessity, the life of the mother being in extreme danger. The French law allows the physician to make any intervention which aims to cure the patient. He believes that this is better than the laws of other countries where the conditions for therapeutic abortion are specified. The French custom is to call a consultation before the abortion is done. He recommends this custom, but is opposed categorically to a law compelling it and especially any obligation to report it to magistrates. Such a law might protect the physician against trouble, but it would cause violation of professional secrecy and disadvantage to the patient.

**Herpes Zoster.**—Marinesco confirms the results of Lipschütz who found it difficult to inoculate the cornea of rabbits with herpes zoster. He classes the disease among the neurotropic epithelioses, and believes the virus is propagated along the nerves. The eruption is not a mere cutaneous trophic lesion, but a localization of the virus.

**Organotherapeutic Action of Milk.**—Cassoute points to the fact that symptoms of cretinism do not develop as long as the infant is nursed, and believes therefore that an important part of the value of unsterilized milk is a combination of the fresh products of all the endocrine glands.

Dec. 19, 1922, 88, No. 42

- \*Discussion on Tuberculosis and Pregnancy. L. Bernard et al.—p. 579.  
Partial Aphemia in a Case of Nephritis. E. Lenoble.—p. 606.  
\*Ulcers of Ileum. Mériel.—p. 613.  
Photomicrography. G. Durante.—p. 616.

**Continued Discussion on Tuberculosis and Pregnancy.**—In this great debate, Bernard shares the view of those who oppose the optimism of Dumarest and Brette. He agrees that pregnancy has a bad influence on tuberculosis, but his statistics show that about half of the tuberculous women survive pregnancy. If a tuberculous woman becomes pregnant, the main question is whether abortion will stop the progress of the tuberculosis. There is no evidence to prove this. Unilateral tuberculosis may be arrested by pneumothorax. Bar explains some points, quotes some cases, and draws parallels with similar debates during the last century. He compares abortion in tuberculosis to extirpation of a pregnant uterus for cancer. The change in regard to abortion in management of contracted pelvis has been due to the good results of asepsis in cesarean section. The end of the present question will be similar.

**Ulcers of Ileum.**—Mériel describes a fatal case of ileus after posterior gastro-enterostomy in a robust man. The operation was performed although there were only indistinct symptoms. The ileus was due to fixation of an ulcer in the lower ileum to the posterior surface of the bladder. The ulcer perforated during the second operation.

### Journal de Chirurgie, Paris

November, 1922, 20, No. 5

- \*Stomach Complications of Diaphragmatic Hernia. G. G. Moppert.—p. 453.  
\*Encysted Hematoma of the Spleen. Lombard and Duboucher.—p. 464.

**Gangrenous Perforation of the Stomach as a Complication of Diaphragmatic Hernia.**—Moppert reports three cases of diaphragmatic hernia with gastric perforation, which, while

presenting different aspects of the condition, have many points in common and afford sufficient details for a study of the clinical history of this affection.

**Encysted Hematoma of the Spleen.**—Lombard and Duboucher describe in a man, aged 44, who had suffered from malaria, off and on, since childhood, a hematoma of the spleen, which had been enlarged for years. The development of the tumor had not been preceded by traumatism but coincided with a severe attack of the malarial infection. It proved to be an encysted hematoma, but it had no cellular lining on its internal surface, which was formed solely of connective tissue, and indicated inflammatory reaction. The changes in the tissue of the spleen adjoining the cyst proved that the process was old.

December, 1922, 20, No. 6

- \*Treatment of Tuberculous Spondylitis. J. Calvé and M. Galland.—p. 565.  
Inguinal Hernia after Appendectomy. Oudard and Jean.—p. 584.

**Treatment of Tuberculous Spondylitis.**—Calvé and Galland applied the Albee implant in 5 men and 3 women, and the Hibbs method in 6 men. The Calvé method of osteosynthesis was applied in 2 other cases. All were adults, and the tuberculous spondylitis had reached the phase of apparent cure. Reexamination from one and a half to three years later revealed that the hump had become more pronounced in two cases, and in 2 others the abscess had returned. In 2 others pains in the roots persisted. Consequently the operation can be considered a success only in 13 cases, and in nearly all of these a celluloid jacket had been worn for two years after the operation. The implant method has proved a failure in children, and it is not needed for well-to-do adults who are not liable to be called on for violent efforts. They should wear a celluloid jacket for life. But for laboring men and women the implant method has advantages; it should be supplemented with the supporting jacket. The 16 cases are reported in detail; 11 cases were repeatedly reexamined with the roentgen rays. The only instance of the Albee operation on a child was done by Albee himself. No supporting jacket was worn, and the implant fractured at the end of eight months. Suppuration then flared up anew and proved fatal.

### Presse Médicale, Paris

Dec. 9, 1922, 30, No. 98

- \*Tar Cancer. G. Roussy et al.—p. 1061.  
\*Transolecranon Operations. H. Vulliet.—p. 1065.  
\*Treatment of Human Anthrax. L. Cheinisse.—p. 1066.

**Tar Cancer.**—Roussy, Leroux and Peyre applied tar to 509 mice. They publish their results with illustrations and describe the evolution of the lesions. Metastases were rare and usually affected the lungs.

**Transolecranon Operations.**—Vulliet shows the great advantages of the transolecranon method in the operative treatment of certain injuries of the elbow.

**Treatment of Human Anthrax.**—Cheinisse reviews different methods of treatment of human anthrax as published in different countries. He cites in particular Vaccarezza's favorable experience with protein therapy, summarized in THE JOURNAL, Sept. 23, 1922, p. 1085. One or two intramuscular injections of 30 c.c. of a 5 per cent. solution of Witte's peptone daily seemed to give good results (6.77 per cent. mortality in fifty-nine cases).

Dec. 13, 1922, 30, No. 99

- \*Hepatic Insufficiency. A. Chauffard.—p. 1073.  
\*General Endocrine Symptoms. A. Sézary.—p. 1075.

**Hepatic Insufficiency.**—Chauffard recalls his maxim of 1890: The diagnosis is drawn chiefly from physical signs and the prognosis from chemical signs. He reviews all the signs of hepatic insufficiency, starting with alimentary glycosuria. A very typical behavior of these cases consists in an intermittent excretion of sugar, bilirubin, and methylene blue. The proportion of urea nitrogen to total nitrogen in the urine is normally 0.82 to 0.95. In pathologic cases it is lower, and goes even below 0.50 in phosphorus intoxication. Since this coefficient depends also on the quality of the kidneys, Brodin replaced it by the azotemic coefficient which



is about 0.8. The nonprotein nitrogen in the serum increases in hepatic insufficiency to 0.2 or 0.25. Widal's colloidoclastic test shows an insufficiency of the proteopexic faculty of the liver. Roger showed that the antitoxic action of the liver depends on its glycogenic function. Instead of starving the patient before general anesthesia, it is better to give him carbohydrates for protection against toxic icterus. The different opinions on the genesis of urobilinuria do not diminish the clinical value of this excellent sign of hepatic insufficiency. Besides these general signs there are others of a more special nature, which may become important in the clinical diagnosis. The liver retains considerable amounts of uric acid during digestion of food rich in purins. Cholesterolin is excreted by the bile, partly as such and partly in the form of cholalic acid. In gallstone disease, the bile contains much cholesterolin and little biliary acid. This may explain the precipitation of cholesterolin and the formation of stones. The liver is fundamentally an organ which fixes substances which pass through it. The fixation of proteins (proteopexy) is proved, but that of amino-acids is still uncertain. Glycopexy is well known since Claude Bernard's investigations. Adipopexy can be seen histologically and determined clinically. Chromopexy (hemoglobin), toxicopexy and fixation of nontoxic substances (2 mg. of methylene blue) by the healthy liver are known. On the contrary, the hepatic barrier is open for substances assimilable directly by the whole body, like amino-acids and cholesterol.

**General Endocrine Symptoms.**—Sézary draws attention to symptoms which may be due to troubles of different glands. These general endocrine symptoms often cause uniglandular affections to be considered as pluriglandular. For instance, the increased tonus of the sympathetic in exophthalmic goiter may lead to a suspicion of increased action of suprarenals, and a lowered action of the same glands may be suspected because of the frequent asthenia and pigmentation. Other glands have been also incriminated in exophthalmic goiter. The question is whether the affection of the thyroid alone cannot explain all of these symptoms. The correlated action of the glands is a fact, and there is not sufficient ground to assume a pluriglandular affection. Melanoderma may occur in hepatic insufficiency, exophthalmic goiter, tumors of the pituitary, and affections of ovaries and testicles, without histologic changes in the suprarenals. Asthenia is another general endocrine symptom. Obesity can originate in affections of many glands. Amyotrophy, infantilism, virilism, have various causes. The general endocrine symptoms explain cases of supposed pluriglandular affections without corresponding histologic findings.

### Revue de Médecine, Paris

1922, 39, No. 8-9

- \*Nervous Manifestations in Endocarditis. Claude and Oury.—p. 449.  
Anemia of Pernicious Type of Tuberculous Origin. G. Bickel.—p. 470.  
\*Thymic Death in Young Woman. A. Pulawski.—p. 495.  
Diseases with Neurotropic Virus. H. Godlewski.—p. 500. Cont'n.

**The Nervous Manifestations in Endocarditis Lenta.**—At the onset of the malignant endocarditis in the woman, aged 25, symptoms of meningitis predominated. Other symptoms suggested irritation of the pyramidal tracts, and aphasia was pronounced. The endocarditis was not recognized for several weeks. The diagnosis had been meningitis, and a tuberculous origin had been considered. This case and some others cited confirm the existence of malignant endocarditis with symptoms almost exclusively cerebromeningeal. The negative spinal fluid findings and positive blood cultures give the clue. The diversity of the nervous symptoms is also instructive. Meningeal and pyramidal disturbances are rarely found associated in true meningitis.

**Thymic Death in Adult.**—The woman, aged 29, died after an attack of hysteria following a quarrel with her fiancé. She was sleeping calmly at the time, and her death seemed inexplicable until necropsy revealed the large thymus (47 gm.) and hyperplasia throughout the lymphatic system. This is the second thymic death Pulawski has encountered within two years. In this patient the brain seemed to be too large for the skull.

### Archivio di Ostetricia e Ginecologia, Naples

November, 1922, 16, No. 1

- \*Cicatricial Atresia of Vagina. S. Piccoli.—p. 3.  
\*Glycuronuria in Pregnancy. C. Volpe.—p. 10.  
\*Placental Grafts. F. Spirito.—p. 32.

**Cicatricial Atresia of Vagina.**—Piccoli describes a case of complete cicatricial atresia of the vagina with hematocolpos after a complicated delivery. The plastic operation which relieved the condition is described in detail.

**Spontaneous and Induced Glycuronuria in Pregnancy as an Index of Liver Function.**—Volpe examined fifty-five pregnant women and thirty-nine after delivery for spontaneous excretion of glycuronic acid, and for that induced by injections of camphorated oil. Although absence and diminution of glycuronic acid are not sure signs of liver insufficiency, they should be periodically looked for in pregnancy.

**Placental Grafts.**—Spirito repeated Romano's injections of placental emulsions into the peritoneum of rats, and used also emulsions of other organs and placentas from other species. Some of the placental and other tissues survived after seven months, and appeared to be organized. Heterologous placentas gave almost the same results.

### Chirurgia degli Organi di Movimento, Bologna

November, 1922, 6, No. 6

- \*Fusion of Atlas with Occipital Bone. M. Lupo.—p. 625.  
\*Symmetrical Hereditary Osteitis. M. Camurati.—p. 662.  
\*Treatment of Contracture of Fingers. S. Ciaccia.—p. 666.  
Coxa Plana from Tuberculous Osteitis of Neck of Femur. M. Camurati.—p. 685.  
\*Supracondylar Fracture of Humerus in Children. F. Satta.—p. 689.  
Pathogenesis of Talipes Equinus. L. Della Valle.—p. 705.

**Fusion of Atlas with Occipital Bone.**—Lupo explains the mechanism of what he calls occipitalization of the atlas. In five of the six cases illustrated the atlas seemed to belong to the skull rather than to the spine. The neck was short and torticollis was frequent.

**Hereditary Osteitis.**—The symmetrical osteitis involved the lower third of the femur and the upper two thirds of the tibia in both legs in a boy, aged 7. The disturbances were vague, with paroxysmal exacerbations. The father had had a similar affection at the same age but had outgrown it. Other instances were known in four generations—a total of ten cases. The disturbances had always subsided by the age of 20, and the subjects were otherwise healthy. All, with one exception, were males.

**Contracture of the Fingers.**—Ciaccia reviews the various disturbances from "rigidity of the hand," and the treatment required. He emphasizes the necessity for combating the circulatory, muscular and trophoneurotic changes in and around the joints.

**Supracondylar Fracture of the Humerus in Children.**—Satta's five cases confirm the excellent results from operative treatment in supracondylar fracture with grave dislocation of the epiphysis. The bone must be exposed for reduction, and it is best to secure the fragments with a nail. Healing is rapid and complete as is evidenced by the illustrations of the cases.

### Policlinico, Rome

Dec. 15, 1922, 29, Surgical Section No. 12

- \*Nonparasitic Cyst in Liver. O. Margarucci.—p. 649.  
Changes in Intestine Above Stenosis. P. Marogna.—p. 677.  
\*Ligation of Hepatic Artery in Rabbits. B. Poletti.—p. 691.  
\*To Insure Continence of Artificial Anus. G. Baggio.—p. 697.

**Nonparasitic Cyst in Liver.**—Margarucci summarizes fifty cases of nonparasitic cystic affections of the liver with operative treatment. In another series of six cases the cyst was discovered at necropsy. He describes with illustrations two personal cases. The unilocular cystadenoma contained 8 liters of fluid in one case, and was safely removed. It had first attracted attention eight years before. In the other case, the myriads of small cysts forming the cystadenoma were all in the right lobe, and conditions were inoperable. The patients were women, aged 58 and 67.

**Ligation of Hepatic Artery.**—Poletti relates that five of the six rabbits in which he ligated the hepatic artery survived in apparently good health, and the changes in the liver were minimal in the one that died on the third night. There were



signs of degeneration in the liver of those killed later. It is evident that the blood supply of the liver does not suffer materially from a ligature around this one artery.

**Continence of Artificial Anus.**—Baggio compares the different means that have been devised to insure continence. None, he comments, are completely successful. He favors mechanical occlusion which can be removed when the desire is felt. On the cadaver, he has found that passing the stump of the bowel through one buttonhole in the transverse and another in the oblique muscle squeezes the bowel flat by muscular tension when the trunk is erect. The passage gapes and the lumen opens up when these muscles relax as the trunk is bent forward. He has found this operation simple and apparently effectual on the cadaver, but has not tried it on the living subject.

### Archivos Latino-Amer. de Pediatría, Buenos Aires

November, 1922, 16, No. 11

- \*Diabetes in Children. P. Nobécourt et al.—p. 705.
- \*Hydatid Cyst in Child Brain. Morquio.—p. 710.
- \*Infant Welfare Work. Clemente Ferreira.—p. 720.
- \*Triplets of Tuberculous Mother. M. Armand Ugón.—p. 744.
- \*Tardy Inherited Syphilis. José Bonaba.—p. 748.
- Aphasia and Quadriplegia in Child with Typhoid. Cavazutti.—p. 756.
- \*Intraperitoneal Infusion in Infants. R. O. Crola.—p. 761.
- Meningeal Syndrome in Hydrocephalus. A. Segers.—p. 764.
- Cephalic Tetanus in Infant. J. C. Navarro.—p. 769.
- \*Typhoid Phlebitis. F. Pozzo.—p. 772.

**Diabetes in Children.**—Nobécourt, Bidot and Paraf call attention to diabetes in children with arrest of growth. A typical case is described in which the girl, aged 15, looked only 12. The diabetes developed at the age of 13. The child was fairly well nourished, but it was impossible to free the urine from sugar. Loss of weight and general depression followed too strict dietetic measures.

**Hydatid Cyst in Brain of Children.**—In one month Morquio had three cases in his service. The operation proved successful in only one, a boy, aged 6. His total of seven certain cases and three suspects in a few months has confirmed the absence of eosinophilia in echinococcus cyst of the brain.

**Report of the Public Health Service.**—Ferreira, director of the child welfare section for the state of S. Paulo, reports the death rate as 4.3 per cent. among the 1,081 infants supervised. The general infant death rate in the city of S. Paulo for the year was 24.3 per cent.

**Triplets of a Tuberculous Mother.**—The three children are thriving and the mother's general condition has improved since delivery. The triplets were removed at once, and tuberculin tests have been negative.

**Tardy Inherited Syphilis.**—The apparently healthy girl, 9 years old, was in the hospital for treatment of chorea of emotional origin. She recovered, but developed hydrarthrosis of both knees and keratitis. Rapid improvement under specific treatment confirmed the syphilitic origin. The great danger in these tardy cases is that the readily curable lesions may be mistaken for tuberculous affections. A negative Wassermann reaction in children is not decisive. Bonaba cites a case in which the skin, gland, bone and other lesions all melted away under specific treatment after having persisted for nine years. In Laurent and Müller's case forty years elapsed before the true nature of the process was recognized.

**Intraperitoneal Infusion.**—Crola injected physiologic saline or sugar solution into the peritoneum in sixteen infants with alimentary toxicosis. The benefit was prompt and pronounced in ten of the children. The amount was never more than 50 gm. at one time, and 100 gm. in the twenty-four hours.

**Typhoid Phlebitis.**—The girl, 10 years old, was convalescing from typhoid when phlebitis occurred in the right femoral vein. The leg was put in a splint and the fever subsided in seventeen days. The splint was removed five days later, with complete recovery.

December, 1922, 16, No. 12

- \*Habitual Vomiting in Infants. M. Acuña.—p. 785.
- \*Congenital Ataxias. J. Orrico.—p. 799.
- Chronic Tropho-Edema. A. Casabón and A. Pepa.—p. 810.

- Scurvy in Infant. M. Armand Ugón.—p. 815.
- Herpes Zoster and Varicella. M. A. Guerrero.—p. 818.

**Habitual Vomiting in Infants.**—Acuña relates that five infants with inherited syphilis were promptly cured of incessant vomiting by systematic mercurial treatment. In three other infants there was nothing to indicate an inherited taint, but the habitual vomiting was arrested by mercurial treatment just as promptly and completely as in the other group.

**Congenital Ataxia.**—The ataxia was of the cerebellar spastic type in two boys, 5 years old. It had been noticed at the first attempts to walk.

### Brazil-Medico, Rio de Janeiro

Dec. 2, 1922, 2, No. 48

- \*Operative Treatment for Ptosis of Eyelid. E. Campos.—p. 345.
- Flagellates of Human Intestine. III. A. Marques da Cunha and G. Pacheco.—p. 349. Idem. IV. Idem.—p. 357.
- \*Avidity of Antitoxins. R. Kraus and Rocha Botelho.—p. 349.
- Brazilian Vegetable Oil in Leprosy. Belmiro Valverde.—p. 353.
- Mosquitoes of Cellia (Theobald) Species. Neiva and Pinto.—p. 355.

**Operative Treatment of Ptosis of Eyelid.**—Campos remarks that the large number of methods for correction of ptosis indicates that none is entirely satisfactory. He found Panas' method disappointing. The Hess method gave excellent results in two congenital cases. The weak point in all methods is that the results are not symmetrical. In one case an attack of supra-orbital neuralgia with transient conjunctivitis in a hysteric young woman had entailed ptosis which persisted for nine years. An operation on the eyelid was followed by complete cure of both ptosis and neuralgia. Campos adds that possibly strapping up the eyelid with adhesive plaster might have proved equally effectual.

**Titration of Antitoxins.**—Kraus reports further research to confirm his statements that the antitoxin acts on the toxin not only in proportion to its quantity but also to its avidity. The latter is a variable quality, and the antitoxins should be titrated for it. He reiterates that Ehrlich was mistaken in his assumption that the preventive and the curative action of an antitoxin necessarily run parallel.

### Prensa Médica Argentina, Buenos Aires

Nov. 10, 1922, 9, No. 16

- \*Leprosy in Argentina. M. Aberastury.—p. 447. Conc'n in No. 17.
- Prophylaxis of Malaria. A. Bachmann.—p. 456.
- Blastocystis Hominis in Diarrheic Stools. S. Mazza.—p. 460.
- \*Arcus Juvenilis. Esteban Adrogué.—p. 463.
- Proposed Changes in Military Medical Service. C. Trejo.—p. 466.
- Stenosis of Pylorus from Gallstone. E. Pozzi.—p. 471.

**Leprosy in Argentina.**—This is the report presented at the recent American Leprosy Congress by the official delegate from Argentina.

**Arcus Juvenilis.**—Adrogué gives illustrations of two cases. The location and aspect in the eyes of the young man were exactly like those of senile arcus. In the other patient, a girl, aged 13, one eye presented this type; in the other eye there was in addition an embryonal cataract.

Nov. 30, 1922, 9, No. 18

- \*Gallstone Operations. A. J. Bengolea.—p. 517.
- \*Ovarian Tumors in the Pregnant. D. E. Centanaro.—p. 533.
- Methods for Testing Arterial Pressure. A. Navarro.—p. 538.
- \*Treatment of Tuberculous Epididymitis. Astraldi.—p. 541.

**Gallstone Operations.**—Bengolea tabulates the details of operation and the results, immediate and remote, in 271 cases of cholelithiasis. In 7 cases a second operation was required for recurrence of symptoms. Gallstones were found in the common bile duct in 2 cases. The mortality as a whole was 4.79 per cent. and of 203 cholecystectomy cases, 1.92 per cent.

**Ovarian Tumors in Pregnancy.**—Centanaro analyzes 19 cases of ovarian tumors complicating pregnancy. He agrees that removal of the tumor is the only means to guarantee against interference with delivery. A further argument for prompt removal is the liability to malignant degeneration later.

**Conservative Treatment of Tuberculous Epididymitis with Fistula.**—Astraldi assumes that the epididymitis is of hematogenous origin, and secondary to a tuberculous process in the seminal vesicles or prostate. Hence he severs the vas deferens between two ligatures. Two cases are described.



## Archiv für klinische Chirurgie, Berlin

Oct. 28, 1922, 120, No. 4

- \*Double Nerve Grafting. P. Manasse.—p. 665.  
\*Mammary Cancers in Men. A. Mülleder.—p. 686.  
\*Traumatic Epithelial Cysts. K. Blond.—p. 695.  
\*Local Changes in Structure of Bone. H. Maass.—p. 704.  
Origin of Loose Bodies in Joints. A. Hartwich.—p. 732.  
Regeneration of Bone from Periosteum. B. Martin.—p. 744.  
Plastic Operation for Flail Knee. R. Bonn.—p. 751.  
\*Perforated Gastric and Duodenal Ulcers. J. Prader.—p. 758.  
Appendicular Peritonitis. E. Melchior.—p. 796.  
\*Collateral Circulation in Portal System. F. Walcker.—p. 819.  
Appendicitis and Peritonitis in the Pregnant. A. Szenes.—p. 859.  
Isolated Luxation of Scaphoid Bone. E. Just.—p. 879.

**Double Nerve Grafting.**—Manasse expatiates on the ease and good results of implanting both stumps of the injured nerve in an adjacent sound nerve. The sound nerve thus gets the benefit of the nerve fibers that develop between the stumps and bridge the gap. In all of the eight cases in which this *doppelte nervenpropfung* was applied, the radial paralysis was more or less completely corrected. In one case, absolutely normal function was regained. The details of the cases are given with illustrations of the technic.

**Mammary Cancers in Men.**—This communication from Eiselsberg's service at Vienna confirms that fully 2 per cent. of all mammary cancers occur in men. There were twelve cases in men to 600 in women during the last twenty years at the clinic. Mammary cancers in men seem to be exceptionally malignant, with early metastasis in the spine. If an excised scrap shows cancer, the growth should be removed immediately.

**Traumatic Epithelial Cysts.**—Blond concludes from six cases that these tumors should be called epidermoids when congenital. Several in his group were traumatic epidermoids.

**Local Development of Bone.**—Maass insists that the organic and the mechanical work of the growing bone have to be considered separately. The predisposition to deformity of the bone lies in the muscles rather than in the bone. If the muscles are kept habitually in the fatigue position, pathologic pressure and weight bearing exert a much stronger influence than when the muscles are normal. The bone may yield, regardless of whether it is abnormally soft or not. Even temporary pressure or traction is liable to switch the growth of the bone onto a wrong track. Even a slight injury, entailing merely temporary shriveling or contracture of soft parts, may lead to severe deformity of bone which is completely normal in itself.

**Perforated Gastric and Duodenal Ulcer.**—In the 51 cases analyzed, the 19 perforated duodenal ulcers, and 28 of the 32 perforated gastric ulcers were in men. In 5 cases the perforation occurred in apparent good health; in 5 other cases, during bed rest; in 12 after a brief period of stomach symptoms. The importance of primary suture of the abdominal wall is emphasized by the ultimate outcome. Tampons and gauze induce local retentions liable to entail complications later. Even with profuse escape of stomach and duodenum content into the abdominal cavity, healing proceeded smoothly after primary suture in most of Prader's 17 cases. The interval before the operation was less than ten hours in 13 of them. In the one fatal gastric case and the fatal duodenal case the interval had been twenty-one and eighteen hours, respectively. The effusion from the reaction to the perforation is not a peritonitic effusion at first. No bacteria were found in the peritoneal effusion in 4 of the 10 cases examined during the third or fourth hour, and in one case at the twelfth hour. The acidity in these cases was high, from 10 to 15. This probably helped to check bacterial proliferation, until the reaction veered from acid to alkaline. The acidity, the bacteriologic findings, and the length of the interval decide whether primary suture can be ventured.

**Collateral Circulation in Portal Vein System.**—Walcker comments on the great variety of anastomoses.

## Klinische Wochenschrift, Berlin

Dec. 9, 1922, 1, No. 50

- \*Etiology of Goiter. A. Schwenkenbecher.—p. 2457.  
\*Death from Goiter. F. J. Lang.—p. 2461.  
\*Water Metabolism. R. Siebeck.—p. 2464.  
\*Test Glycosuria in Pregnancy. Gottschalk and Strecker.—p. 2467.  
\*Determination of Bilirubin in Blood. A. Adler and E. Meyer.—p. 2468.

- \*Experimental Recurrentis Infection. A. Buschke and H. Kroó.—p. 2470.  
\*Prophylaxis of Measles. E. Schilling.—p. 2471.  
Treatment of Blood Poisoning in Anthrax. E. Baumann.—p. 2472.  
\*Simple Acroparesthesia. F. Heissen.—p. 2473.  
Sun Irradiation at Different Altitudes. F. Baur.—p. 2476.  
Coagulation of Serum by Heat in Syphilis. E. Hachez.—p. 2477.  
\*Non-Protein Nitrogen and Toxicoses of Pregnancy. Hellmuth.—p. 2478.  
Bilateral Trigeminal Neuralgia Due to Lymphoma of Both Gasserian Ganglions. R. Henneberg.—p. 2479.  
Treatment of Abortion. F. Götting.—p. 2480.  
To Bring Undernourished Children up to Normal. Davidsohn.—p. 2483.  
Nature of Coagulation of Blood. B. Stuber.—p. 2486. Conc'n.

**Etiology of Goiter.**—Schwenkenbecher reviews the different theories of the etiology of goiter.

**Conditions Leading to Death in Goiter.**—Lang discusses conditions which may lead to sudden death in persons suffering from goiter. One group is due to the toxic influence on the cardiac nerves. The persistence of the thymus in these cases points to the possibility that the cause of the sudden death may be more complex. Compression of the trachea is more pronounced in deeply or abnormally located goiters than in large ones which can expand freely. Lang discusses the causes for expiratory stenosis in intrathoracic goiter and inspiratory stenosis in goiter of the neck. The function of the nonstriated musculature of the lung is one of the important factors to be considered.

**Fundamental Features of Water Metabolism.**—Siebeck's opinion is that the exchange of water between blood and the tissues depends upon all three components: the blood, the endothelium of the vessels and the tissue. Any explanation which considers only one of these three points is unsatisfactory. The question whether the exchange of water is conditioned by a vital secretion and resorption, or simply by diffusion, is not stated correctly. There is no question about the existence of diffusion in living bodies, but the point to be studied is the regulation and coordination of this diffusion. Siebeck considered erythrocytes as a good object for such study, and found a very constant relation (1:2) of chlorids between erythrocytes and serum. According to Warburg, narcotics of the aliphatic series inhibit the diffusion of chlorids from the corpuscles, when applied in concentrations in which they inhibit oxidations. Relations to the surface tension were also distinct, and Siebeck concludes that diffusion is regulated by the dispersity of protoplasmic surfaces, which can be changed by surface-active substances. Such a physical coordination is not limited to single points, but affects the whole organism. The question whether the regulation of water is renal or extrarenal, is wrong; both factors are important, and the main point is the coordination of the whole organism.

**Alimentary Glycosuria in Pregnancy.**—Gottschalk and Strecker give to pregnant women 100 gm. of levulose by the mouth on an empty stomach. Levulosuria is a probable sign of pregnancy, although a negative result does not exclude it. Renal excretion of sugar seems to be more frequent in the early than in the advanced stages of pregnancy.

**Elimination of Sources of Error in Determination of Bilirubin in Blood.**—Adler and Meyer use Thannhauser's modification of van den Bergh's technic, but do not evaporate the chloroform from the bilirubin solution. It is sufficient to add alcohol until the chloroform dissolves in it. They use Ostwald's absolute colorimetric method for the determination, and note the color only once with the standard solution. Adsorption of bilirubin to the albumins can be prevented by diluting the serum.

**Presence of Spirochetes in Brain in Experimental Recurrentis.**—Buschke and Kroó examined histologically brains from mice infected with *Spirochaeta recurrentis*. The spirochetes were present in large numbers in the gray matter of the brain, between the cells and in the cells of the glia, but never in the ganglion cells nor in the white matter. The spirochetes had invaded the brain in large numbers twenty-four hours after the infection, when there were only few in the blood.

**Prophylaxis of Measles.**—Schilling had good results with injections of serum from convalescents. As few adults are subject to measles, it is impossible to obtain sufficient quantities of serum. Further investigations are necessary to determine whether nonspecific proteins have any protective value.



**Simple Acroparesthesia.**—Heissen describes acroparesthesias without visible spasm of the vessels.

**Nonprotein Nitrogen and Toxicoses of Pregnancy.**—Hellmuth found, in healthy pregnant women, low nonprotein nitrogen in the blood: 0.03 per cent. was the highest. Urea nitrogen constitutes about 30 per cent. of the total nonprotein nitrogen in pregnancy. Uric acid figures are about the upper normal limit; creatin and creatinin are normal. In eclampsia and nephritis in pregnant women, the total nonprotein nitrogen was maximum normal, while the proportion of urea nitrogen was increased. Uric acid was increased in all of these cases.

### Zeitschrift für Geburtshilfe und Gynäk., Stuttgart

Oct. 28, 1922, 85, No. 2

Genesis of Intraligamentary Fat Infiltration with Ovarian Dermoid Cysts. R. Benda.—p. 225.

Anatomy of Lower Segment of Uterus. H. R. Schmidt.—p. 233.

Adenomyosis of Female Genitals. W. Lahm.—p. 292.

\*Origin of Genital Flora. R. Salmon.—p. 306.

\*The Bladder During Delivery. E. Vogt.—p. 333.

\*Biologic Changes in Blood During Pregnancy. K. v. Oettingen.—p. 340.

Action of Combination of Organ Extracts on Uterus. Kosaka.—p. 364.

**Origin of Genital Flora.**—Salomon took smears every hour from the mouth of girl babies for ten days after birth. This research was part of an extensive study of the genital flora in women. The findings confirm anew the paramount importance of asepsis in the care of the new-born.

**The Bladder During Delivery.**—Vogt calls attention to the symptoms liable to develop when the bladder is pushed out of place during childbirth. It may be pushed entirely outside of the peritoneum, low down in the pelvis, and here interfere with the dilation of the soft parts. If this impediment to delivery is not recognized and corrected, the bladder or the uterus may rupture from the strain. Two cases are described in detail, in which catheterization of the bladder allowed the delivery to proceed smoothly. In two other cases the bladder had been forced into an hour-glass shape. The causes for this extraperitoneal displacement of the bladder may be various, mechanical or pathologic. The obstetrician should be on the lookout for them.

**Biologic Reactions in the Blood During Pregnancy.**—Oettingen remarks that uniform causes are probably responsible for the parallel behavior of the biologic reactions in the blood during pregnancy. We have six biologic tests at our command, speed of sedimentation of the erythrocytes, precipitation and coagulation of the plasma, agglutination of bacteria, action of hemolytic serum, and cobra venom activation.

### Zeitschrift für klinische Medizin, Berlin

Nov. 30, 1922, 95, No. 4-6

\*Treatment by Inactivation of Protoplasm. J. Burmeister.—p. 237.

\*Endocrine Obesity. A. Loewy and H. Zondek.—p. 282.

\*Intraspinal Arsphenamin Treatment. A. Wittgenstein.—p. 293.

\*Monocytes. H. W. Wollenberg.—p. 321.

\*Pathogenesis of Typhoid. H. Oeller.—p. 328.

\*Action of Epinephrin in Blood Diseases. A. Hittmair.—p. 367.

\*Influence of Carbohydrates on Blood Sugar. W. Eliassow.—p. 384.

\*Alimentary Glycosuria. J. E. Holst.—p. 394.

\*Infusions of Glucose in Heart Disease. R. Niemeyer.—p. 405.

\*Hemoclastic Crisis. H. Eisenstädt.—p. 414.

\*Uric Acid Determination. J. Rother.—p. 427.

\*Clinical Import of Stalagmometry. F. Breuer.—p. 433.

\*Endemic Osteomalacia and Late Rachitis. H. Higier.—p. 445.

\*Bilirubin in Serum and Bile. G. Hetényi.—p. 469.

**Treatment by Nonspecific Passive Protection or Inactivation of the Protoplasm.**—Burmeister reviews extensively the field of protein therapy and of calcium therapy. The aim of passive-protection treatment is to suppress the reaction of the body to the toxic agent, because a disease begins only by the reaction of the cells. In such cases, the organism overcomes the infection simply by not taking notice of it: The protoplasm is inactivated against it. It is not yet certain in every instance which drugs activate the protoplasm and which inactivate it. Proteins seem to be activating; heavy metals, calcium, quinin and some dyes inactivate. The symptoms of activation correspond surprisingly to those of exophthalmic goiter, while inactivation is well represented in myxedema.

**Endocrine Obesity.**—Loewy and Zondek found normal metabolism in pituitary obesity. They emphasize the clinical picture of localized obesity (especially in upper or lower extremities) which is in relation to some changes in the endocrine apparatus, but does not present any of the typical pictures. These cases cannot be explained by a lowering of basal metabolism, and thyroid treatment may reduce the whole body except these masses of fat. It looks as if in a certain sense they might lie outside of the general metabolism. These cases resemble Simon's lipodystrophy. One case of obesity had a low excretion of water, which became normal after thyroid treatment.

**Endolumbar Treatment with Arsphenamin.**—Wittgenstein reports her experiences in 300 intraspinal injections of arsphenamin. She never saw a severe or permanent injury from the small doses ( $\frac{1}{2}$  mg. to 2 mg.) given in large amounts of cerebrospinal fluid, without undue pressure. Cerebrospinal syphilis and especially lumbar tabes are very sensitive;  $\frac{2}{3}$  mg. is a maximal dose and should be given in at least 60 c.c. of cerebrospinal fluid. Asymptomatic syphilis of the meninges requires from 1 to 1.8 mg. in 50 or 90 c.c. of fluid. The patient must be kept strictly in a horizontal position for forty-eight hours after the injection, which is repeated in from three to four weeks. In all cases of clinically asymptomatic syphilis of the meninges, the Wassermann reaction became negative. The reaction should be tested every six months. For recurrences, two more injections are sufficient. The results were better in the combined treatment with intravenous and intraspinal injections than with intravenous injections alone. The method did not give satisfactory results in general paresis. The cerebrospinal fluid should be examined in every case of latent syphilis, and the public should be educated to permit this.

**Monocytes.**—Wollenberg confirms Lucey's observation that the first two blood drops taken from the tip of the ear contain, in many cases, monocytes. Endocarditis lenta leads perhaps to a specific proliferation of the endothelium of all capillaries, especially in the tip of the ear.

**Pathogenesis of Typhoid.**—Oeller does not differentiate strictly between typhoid fever with extensive changes in the lymphatic apparatus and typhoid sepsis. The latter is due to the inability of the cells to fix the virus (a parallel to the leukopenia). If this inability is complete, pure septicemia results. The hopeless fight is limited in such cases to the blood stream and hemopoietic organs, which act only serologically on the bacteria. New-born children with typhoid infection present sometimes such a state. Streptococcus infections may have points in common with this conception of typhoid. Oeller observed streptococcus and staphylococcus septicemias which recovered after a transitory pyemic stage (localizations in skin and joints).

**Action of Epinephrin in Blood Diseases.**—Hittmair examined the blood after injections of epinephrin in different diseases of the hemopoietic system. He found no specific changes.

**Influence of Carbohydrates on Blood Sugar.**—Eliassow used 50 gm. of glucose and equicaloric amounts of levulose, wheat flour and inulin in twelve sugar-free diabetics, and examined their blood and urine. Glucose increased the glycemia strongly, wheat flour less, levulose markedly less, and inulin not at all. He believes that the slow resorption of inulin accounts for this.

**Alimentary Glycosuria.**—Holst examined the urine of 159 persons, without apparent trouble in carbohydrate metabolism, after an ordinary sweet meal; 19.5 per cent. of them became glycosuric. The amount of carbohydrates in the meal was smaller than the amount usually necessary to produce alimentary glycosuria. It would be a mistake to treat these persons as diabetics, but they should be advised to eat less sugar, and to have the urine examined periodically.

**Infusion of Glucose in Heart Disease.**—Niemeyer did not find hypoglycemia in heart trouble more frequently than in healthy people. Arteriosclerotics with a tendency to spastic contractions of vessels do not feel well after infusion of highly concentrated solutions of glucose. Contrary to Büdingen, Niemeyer saw no marked therapeutic results from such infusions in heart disease.



**Hemoclastic Crisis.**—Eisenstadt confirms generally Widal's test leukopenia, but believes that in diseases of the liver it represents rather a special instance of an "abdominal vagus reflex" (Glaser). He does not attribute any value to it for the clinical diagnosis of liver disease.

**Uric Acid Determination.**—Rother admits that the Folin-Wu method gives very exact values of uric acid in pure solutions. Yet the coagulated proteins of the blood may retain a considerable quantity of uric acid. There is no known method which will prevent this.

**The Stalagmons in Cancer.**—Breuer used Schemensky's method in sixteen ulcers of the stomach, sixteen carcinomas of the stomach, and eighteen other cases (mostly tumors). Stalagmons are colloidal substances which change the surface tension. They are easily absorbed by animal charcoal, and the principle of the method is to determine the surface tension of urine before and after this treatment. The urine is brought to a specific gravity of 1.010 and one portion is used directly and another after acidifying with hydrochloric acid to the point of change of Congo-red. The relation between the number of drops before shaking with charcoal and the number counted after it, is the stalagmometric quotient. Breuer's results were very good, but it seemed that the tumor must be of a certain size before an increase of the stalagmometric quotient appears. Nonspecific reactions also occur.

**Endemic of Osteoarthropathy, Osteomalacia and Late Rachitis.**—Higier observed during the second half of 1917, in Warsaw, seventy cases of osteomalacia in people between 19 and 56. Lack of vitamin A was the probable cause.

**Simultaneous Determination of Bilirubin in Serum and Bile as Efficiency Test for the Liver.**—Hetényi determined the bilirubin in blood and bile by Hijman van den Bergh's method. He considers amounts of bilirubin under 6 mg. or over 20 mg. in 100 c.c. of bile, or over 2.2 mg. in blood, as pathologic. Laennec's cirrhosis gave increased amounts in blood, low in bile. Decompensation of the heart gave normal or increased concentration of bilirubin in bile. The liver function is sometimes impaired in the course of pernicious anemia. A number of other diseases were also tested.

### Zeitschrift für urologische Chirurgie, Berlin

Oct. 7, 1922, 11, No. 1-2

- \*Bilateral Pneumococcus Paranephritis. H. Hammer.—p. 1.
- Hypoplastic Kidney with Twin Ureters Opening in Ejaculatory Duct. W. Rech.—p. 6.
- \*Cystic Enlargement of Lower Ureter. F. Hübner.—p. 25.
- \*Case of Syphilitic Disease of the Bladder. R. Picker.—p. 43.
- Congenital Cleft Abdomen. G. B. Gruber.—p. 51.

**Bilateral Pneumococcus Paranephritis.**—Both kidneys were entirely covered with a thick exudate, a phlegmon of the adipose tissue surrounding the kidneys. There had been no symptoms, no fever, although the infection must have been of nearly four months' standing. The pneumococcus was cultivated from the paranephritic process.

**Cystic Enlargement of Lower Ureter.**—Hübner has compiled from the literature more than 100 cases of operative treatment of intravesical ureterocele. He discusses the mechanism and the operative technic, with an illustrated description of a personal case. The patient was a woman, aged 28, who had had pains in the right inguinal region since the age of 16. The pain varied in severity but persisted constantly, with occasional colic-like paroxysms. It was relieved by reclining on the right side. The superfluous mucosa was resected after a catheter had been introduced into the ureter, and the mouth of the ureter was reconstructed with four stitches. There has been no return of symptoms since.

**Syphilitic Disease of the Bladder.**—Picker's illustrations show the cystoscope findings in a young man who complained of increased frequency of urination, with smarting and itching in the urethra. There was no hematuria, but the bladder mucosa was swollen and bluish near one ureter. In the patch were two small necrotic gummas, with a small recent one adjoining. Under two months of iodid the cystoscopic findings returned to normal. Picker does not hesitate to advise tentative potassium iodid treatment in large doses for two or three weeks with bladder symptoms which do not fit into the usual frames, even when tests for syphilis are negative.

### Zentralblatt für Chirurgie, Leipzig

Dec. 16, 1922, 49, No. 50

- \*Treatment of Esophageal Strictures. A. Henle.—p. 1850.
- Plastic Operation to Restore Patella. S. Kofmann.—p. 1851.
- Suturing, Following Resections, of Portions of Intestine Not Covered with Peritoneum. F. Mandl and M. Gara.—p. 1855.
- Encapsulated Residual Abscess as Cause of Fistulas After Appendectomy. M. Cohn.—p. 1858.
- Comment on Chiari's "No Tampons for Incision Wounds." Hedri.—p. 1861. Idem. Wolf.—p. 1862.
- Addendum to "Treatment of Coxa Vara." E. Bircher.—p. 1863.

**Treatment of Esophageal Strictures.**—Henle describes his success in treating esophageal strictures. On account of difficulties from kinking in the introduction of rubber tubes into the esophagus, Henle had a number of smoothly polished ivory "olives" made, of varying diameter, the length varying with the diameter. The olives were strung on a silk cord at intervals of from 10 to 12 cm. A knot tied above and below each olive served to keep it in place. In treating a child, aged 3, who had swallowed, six months previously, a caustic fluid, he introduced two threads into the esophagus, passed one thread, to serve in an emergency, out through the nose, and the other through the mouth. Once or twice daily, he attached the string of olives, well oiled, to the thread passing out of the mouth. The smaller olives were below, with the more conical ends downward. Through a gastric fistula, the string of olives was then drawn through the esophagus. As the olives passed the stricture, a certain resistance was noted, which served to give an idea as to the position and length of the stricture, and also whether there was more than one stenosis. In the case given, there were two strictures 5 cm. apart. At first he used olives of from 3 to 7 mm. diameter. Then the olives of smaller size were left off and larger ones were added to the string as needed. After the size 11 mm. passed through readily, longer intervals (two or three days, and later, two weeks) were allowed to elapse. In the meantime, the child had, for some time, eaten solid food—bread with the crust—without any difficulty. Therefore, the stomach drain and the threads were removed. The treatment was completed before the end of six months. The child continues in good health and has no trouble in eating any kind of food. The gastrostomy, which was performed before the case was referred to Henle, healed spontaneously.

### Zentralblatt für Gynäkologie, Leipzig

Dec. 9, 1922, 46, No. 49

- \*Etiology of Leukorrhoea. R. T. von Jaschke.—p. 1938.
- Heart Block and Spontaneous Childbirth. W. Walz.—p. 1941.
- \*Researches on Blood Transfusion. L. Nürnberger.—p. 1945.
- \*Rate of Sedimentation of Erythrocytes. R. Pewny.—p. 1951.
- Normal Pregnancy Three Years After Operative Reduction of Complete Inversion of Puerperal Uterus. K. Teufik.—p. 1956.
- \*Roentgen Irradiation in Gynecologic Hemorrhage. Hirsch.—p. 1957.
- Note on Torsion of Fallopian Tube. J. Schwartz.—p. 1959.
- Torsion of Healthy Adnexa in Childhood. F. Neugebauer.—p. 1961.
- Zeiss Method of Illuminating Operating Room. Hartinger.—p. 1962.

**Etiology of Leukorrhoea.**—Jaschke refers to the researches by Manu af Heuerlin which go to show that, with rare exceptions, leukorrhoea is associated with an abnormal flora. It likewise seems proved that a normal flora of the vagina cannot be preserved unless the vaginal wall remains biologically intact. The glycogen depots that have been shown to exist in the vaginal epithelium also play an important rôle, since glycogen is doubtless the most important precursor of lactic acid, which produces the normal acid reaction of the vaginal secretion and prevents abnormal bacterial growth. The normal, healthy vagina eliminates very soon bacteria that do not belong there. Jaschke's researches show that there is a parallelism between the glycogen content and the lactic acid content, on the one hand, and the condition of the bacterial flora. A low amount of glycogen and lactic acid was very commonly associated with contamination of the vaginal secretion. There were, however, many exceptions and inconsistencies, so that the subject needs to be studied further.

**Clinical and Experimental Researches on Blood Transfusion.**—Nürnberger compared the blood of donor and recipient biologically; that is, search was made for hemolysins and hemagglutinins. Irrespective of the result, the recipient was given a preliminary dose of 10 to 20 c.c. of the donor's



blood. Then several minutes were allowed to elapse to see whether or not any manifestations would occur in the recipient. If typical symptoms of transfusion shock appeared (dyspnea, cyanosis, restlessness, a feeling of oppression in the chest, weakening of the pulse, heat flashes over the body, and pain in the back), the transfusion was stopped; but if not, the transfusion was completed. If only hemolysins were present (irrespective whether in the donor's or the recipient's blood), he never observed the slightest disturbance. The presence of hemagglutinins in the donor's blood seldom had any bad effect, but in all cases in which hemagglutinins were found in the recipient's blood, there appeared typical symptoms of transfusion shock. This confirms the findings of various other writers.

**Rate of Sedimentation of Erythrocytes as a Diagnostic Aid in Gynecology.**—Pewny found that the rate of sedimentation could be used only during the later months of pregnancy to differentiate between gestation and myoma; during the first months of pregnancy it cannot be relied on. However, this test will differentiate between benign tumors without complications and malignant tumors, between hemorrhagic and serous tumors of the adnexa, between chronic and acute inflammations of the adnexa and between benign tumors of Douglas' pouch and inflammatory exudate or hematocele. If the blood to be tested has been allowed to stand, the rate of sedimentation will usually be retarded, which fact seems to indicate that, among other factors, colloidal changes play an important part in this test.

**Indirect Roentgen-Ray Treatment of Gynecologic Hemorrhage.**—Hirsch states that, by using 60 per cent. of an erythema dose, which was applied to the pituitary gland from two fields, he was able to produce a prompt inhibitive effect on metrorrhagia. He observed no bad effects or disturbances arising from this procedure. No sugar nor albumin appeared in the urine following such irradiation, and no disturbances of function were noted in the vegetative nervous system. In fifteen myomas, which were subjected to this treatment, unusually prompt retrogression occurred; the time was much shorter than had been required to accomplish this by ovarian irradiation. In four weeks the myomas often decreased from the size of a child's head or a fist to the size of a walnut. Immediately after irradiation, a distinct swelling of the uterus was frequently noted. In each individual case we must consider whether ovarian or hypophyseal irradiation should be employed. In the case of a growing organism, if roentgen-ray treatment of hemorrhage is to be considered at all, the pituitary gland, from which so many growth impulses go forth, should be avoided. For hemorrhages at the menopause, whether caused by a myoma or dysfunction of the ovaries, hypophyseal irradiation has special advantages, since the reduction in the function of the pituitary gland accelerates the retrogressive changes in the genitalia. This brings about a condition that corresponds more closely to the menopause than is accomplished by ovarian irradiation.

Dec. 16, 1922, 46, No. 50

- Pulvermacher and Torsion of Ovarian Cysts. H. Sellheim.—p. 1986.  
Chemobiologic Treatment of Leukorrhea. Schweitzer.—p. 1999.  
\*Etiology and Treatment of Tubal Pregnancy. Mauthner.—p. 2005.  
Sex Determination. D. G. Wesslink.—p. 2011.  
Neglect of Carcinoma Cases in Germany. H. Naujoks.—p. 2012.  
Hematoma After Torsion of the Adnexa. H. Becker.—p. 2019.  
Bacteriologic Indications in Febrile Abortion. E. Sachs.—p. 2021.

**Etiology and Treatment of Tubal Pregnancy.**—Mauthner does not deny the possible influence of mechanical factors, but he doubts whether they are dominant. The biologic factor must be considered. A damaged ovary may produce a pathologic product. The nonpregnant tube should not usually be removed, unless much changed. In the past, 40.5 per cent. of all his patients with tubal pregnancy have been sterilized.

### Hospitalstidende, Copenhagen

Nov. 29, 1922, 65, No. 48

- Progressive Lipodystrophia in Man. V. Christiansen.—p. 801.  
\*Ovarian Pregnancy. K. Bierring.—p. 810.

**Ovarian Pregnancy.**—Bierring removed a cystic right ovary three months after suppression of the menses. The supposed cyst proved to be an ovum.

Dec. 6, 1922, 65, No. 49

- \*Width of Bronchioles. C. Sonne.—p. 817. Conc'n No. 50, p. 841.  
From Mendel to Morgan. History of Research on Heredity. O. Thomsen.—p. 831. Conc'n No. 51, p. 875.

**Pathogenesis of Asthma.**—The extensive experimental and clinical research reported was done to ascertain the relative width of the bronchioles, under different conditions, as a factor in asthma.

Dec. 20, 1922, 65, No. 51

- \*Radioactive Substances in Soluble Form. S. Lomholt.—p. 865. Conc'n No. 52, p. 897.

**Radioactive Substances in Fluid Form.**—Lomholt discusses the application of alpha rays in skin disease. In forty-four cases of psoriasis all except one showed more or less favorable influence. Small recurring patches yielded promptly to the treatment. The only drawback is the brownish discoloration that it seems to entail. He used thorium X, dissolved in alcohol, to paint the surface. Actual cure in lupus and psoriasis is rare, but more or less benefit always followed the treatment.

### Hygiea, Stockholm

Nov. 30, 1922, 84, No. 22

- \*Epidemic Encephalitis. C. Kling.—p. 913. Conc'n.  
History of Cancer in Sweden. V. Djurberg.—p. 926.

**Epidemic Encephalitis.**—Kling was unable to confirm statements as to the identity of herpes virus and the virus of epidemic encephalitis.

### Ugeskrift for Læger, Copenhagen

Dec. 14, 1922, 84, No. 50

- \*Case of Obesity with Arrhythmia. E. E. Faber.—p. 1741.  
Associated Syphilitic Nervous Affections. H. Vedsmand.—p. 1744.  
Experimental Optic Nystagmus. G. V. T. Borries.—p. 1748.  
\*Blepharitis and Its Treatment. H. Rønne.—p. 1752.  
\*Auricular Fibrillation in Hyperthyroidism. C. Schwensen.—p. 1756.

**Obesity with Arrhythmia.**—Faber's patient was a man 182 cm. in height who weighed 146 kg. There were signs of cardiac weakness. Under a course of Carell treatment, from 3,000 to 4,000 c.c. of urine was voided, the weight rapidly declined and the heart action improved. Under quinidin, the arrhythmia subsided but recurred. It finally subsided permanently, two weeks after suspension of the quinidin.

**Blepharitis and Its Treatment.**—Rønne declares that blepharitis is easily recognized and treated, and yet is frequently overlooked. A true hordeolum is a certain sign of blepharitis. The hard dry scab in the eyelashes must be removed. The main thing in treatment is persistence. The salve should be rubbed into the edge of the lids every night on retiring. Blepharitis of many years' standing will yield to systematic scraping off of the scales and application of the salve. If there is ulceration, all eyelashes involved should be pulled out. The fat in the salve is the main thing. Acute exacerbations promptly subside, but chronic blepharitis continues its course until conquered by patience and perseverance.

**Auricular Fibrillation in Exophthalmic Goiter.**—Subsidence of auricular fibrillation after operative treatment of exophthalmic goiter has been reported by Fridericia and others. Schwensen reports a case associated with irregular heart action and auricular fibrillation. The heart beat was 160, the radial pulse 100. After roentgen-ray treatment, the symptoms became much aggravated for five weeks but then improved, and the electrocardiogram soon became entirely normal. The right ventricle returned to normal size at the same time.

Dec. 21, 1922, 84, No. 51

- \*Splenectomy in Pernicious Anemia. E. Holm.—p. 1781.

**Splenectomy in Pernicious Anemia.**—Holm says that the benefit from splenectomy in pernicious anemia was remarkably constant in the 85 cases compiled by Kriese. The blood improved as in a pronounced spontaneous remission, but the improvement did not last. In Holm's personal case, the erythrocytes numbered only 760,000 but they slowly increased after splenectomy to 1,725,000 in eleven months, and the general condition materially improved. Of Eppinger's 18 cases, 2 lived more than four years after the splenectomy, and 6 more than two years.



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## THE RESOURCEFUL GENERAL PRACTITIONER OF MODERN MEDICINE\*

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CHICAGO

The time has come for plain statements in regard to modern medical practice, with the purpose of bringing the public and the members of the medical profession as a whole back to good common sense views. It is my purpose to attempt to show how the general practitioner may continue to occupy the important place in the field of practice which was his until recently. For the time being, therefore, specialists in medicine and surgery and special forms of the prevailing methods of modern practice, such as diagnostic groups and pay clinics, will not be discussed.

In a consideration of the general practitioner it will be necessary to discuss the opportunities which he enjoys, and the problems and difficulties which beset him. In their work, not all general practitioners are resourceful and sure of themselves. This fault is due in some instances to inadequate early training, but in a majority of men it is due to laziness and failure to take advantage of the opportunities afforded all physicians. From the time of his graduation until he retires from work, the whole professional life of the physician affords opportunities to study morbid processes as evidenced by anatomic changes and altered function and so to manage and treat the patient that partial or complete restoration occurs—dependent, in part, on the nature of the malady. The physician who makes all possible use of his daily clinical opportunities learns something new and useful every remaining day of his professional life.

The determination to take advantage of the daily clinical opportunities and of other educational available aids are the essential factors which produce resourcefulness and ability in the physician. Naturally, this daily clinical study develops the powers of observation and manual dexterity in physical examination and in treatment. The knowledge which this ever increasing experience affords is refined and stabilized by purposeful reading of standard textbooks and periodicals, by association with fellow practitioners and in discussion of papers read before medical societies, and by writing papers on subjects which the physician's daily clinical observations justify.

Something additional must be said of the educational aids available to physicians in most communities. Although medical books and periodicals are relatively expensive, most physicians can afford standard textbooks on physical diagnosis, practice of medicine, gen-

eral surgery, obstetrics, pediatrics, dermatology, neurology and on other special subjects which they feel are necessary, and one or two good general medical periodicals, which should include THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. The daily clinical observations fortified by selective reading in standard textbooks and good medical journals afford a method of self-education of the greatest value.

Membership in and active participation in the work of the county medical society is of great educational benefit to the physician. It affords personal contact with fellow practitioners in the courteous discussion of medical subjects and professional problems, promotes mutual respect and good will, and is a potent factor conducive to increased self-respect and self-reliance on the one hand, and to a decrease in the size of the hat, if imaginary megalomania makes one a nuisance to his fellows.

Concise written reports of interesting clinical observations presented before medical societies and for publication are a splendid means of self-education, and are justified because they furnish a valuable addition to medical literature. In this connection it will be recalled that some of the best and earliest clinical descriptions of epidemic cerebrospinal meningitis, infantile paralysis and other epidemic diseases prevailing in the United States were written by the rural general practitioners, and in some instances in pioneer sections of the country.

### DIAGNOSIS

Diagnosis is the most important factor in the practice of medicine. Until the diagnosis is made, treatment may be ineffectual and often is irrational. Modern medical science is characterized by the development of many laboratory and instrumental methods of diagnosis. Concerning these I repeat what has been said on several occasions: With due regard for the value and need of all the splendid ultrascientific laboratory and instrumental methods of physical and functional diagnosis in investigatory medical work, they are needed in the routine clinical care of not to exceed 20 per cent. of all the patients of any urban or rural community. Unfortunately, many lay people have been made to believe and apparently a large number of physicians think that the routine application of the ultrascientific methods of diagnosis is necessary in the majority of cases. The fact is that the diagnosis can be made in fully 80 per cent. of all cases by a resourceful general practitioner who will efficiently use his brain, special senses, hands and an always available simple and inexpensive laboratory and instrumental equipment. In a discussion of the means of diagnosis available to the general practitioner, the history of the past and present condition of the patient is one of the most important, if not the most essential, factor.

\* Read before the Tri-State District Medical Association, Peoria, Ill., Oct. 31, 1922.



## MEDICAL HISTORY

To obtain a satisfactory medical history is an art which can be perfected by painstaking care and experience. The difficulties encountered in garrulous, taciturn, conceited, opinionated and stupid patients can usually be overcome by patience and tact. In most instances the patient can be encouraged to tell a rational story of the main symptoms of the complaint. The physician should be careful not to misdirect the story of the patient by questions which may encourage indicated replies, but should guide the patient in his story to an orderly recitation of symptoms referring to the most important complaints. If the symptoms refer to the gastro-intestinal tract, the quiz should be confined to this subject until all necessary information is obtained, before proceeding to any other system of the body. This orderly method of procedure impresses the patient with the importance of accuracy of statement; and if each system of the body is taken up in turn and completed, the information obtained will be amplified, will be of greater value, and in the end will save time. In addition to the symptoms of the present disease, in chronic conditions, especially, it is very important to obtain accurate information of former diseases because of the possibility of a relationship to the present condition. It is also important to learn the habits of the patient in regard to food, drink, sleep, work, recreation and the habitual use of tobacco, alcohol and drugs. If insufficient training and lack of experience at the beginning of the professional career prevents the physician from obtaining from the patient all the information available, this will be overcome by taking advantage of the daily experience in clinical observation, selective reading, attendance on society meetings, and other methods of professional advancement. A majority of practitioners do not make written records of their patients: these are absolutely essential to accuracy in diagnosis and efficiency in practice. To obtain an efficient history and make a written record require time. Many practitioners have told me they could not afford the time to do this. My own experience justifies the statement that this is a mistake. Accurately written records, brief though they be, properly filed to be available for future reference, are time-savers of the future weeks, months and years. As written records of patients accumulate and are properly filed to be available, the practitioner possesses information which attaches patients and their families to him and affords him time-saving data of inestimable value in the future care of patients and as material for medical reports and papers to be presented to medical societies or for publication.

## PHYSICAL EXAMINATION

The conscientious practitioner will make a careful, general physical examination of practically all patients who seek his services. An occasional patient with a slight ailment, and especially those with slight injuries or lesions requiring surgical treatment, are exceptions. But with many patients the present complaint is often an expression of an older morbid process which has been disregarded by the patient or overlooked by the physician. The physical examination must be made methodically. I need not mention what should be learned by inspection, palpation and auscultation. If each is used carefully, and if the results recorded to insure accuracy are considered with the findings of the available simple laboratory and other tests, these valuable positive and negative data will enable the physician

to make a probable diagnosis. In some instances, further examinations may be necessary to reach a true diagnosis. Here, again, the daily opportunity in clinical and laboratory examinations, and the correlation of the findings affords an experience which will insure steady improvement in technical skill and in judgment. Daily practice in technic and judgment is the program which every physician must follow to become a skilled diagnostician. The practitioner can gain much by observing others at work in organized clinics or by taking postgraduate courses in diagnosis, when these are available; but the efficiency of the practitioner in diagnosis is mainly dependent on his own industry and determination to make the most of his own clinical opportunities.

## SPECIAL EXAMINATIONS

The general practitioner cannot be proficient in the more refined methods of examination which are necessary in the practice of the specialties of medicine and surgery. But he can and should be able to recognize the more common diseases of the eye, ear, pharynx, accessory nasal sinuses, locomotor apparatus, rectum and female pelvic organs with the simple available means at hand; furthermore, he should possess and use in routine practice a simple chemical equipment and standardized urinometer for urinalysis, a microscope, blood counter, hemoglobinometer, rectal, aural and vaginal specula, laryngeal mirrors, head mirror, blood pressure instrument, stethoscope, stomach tube; and an inexpensive electric light device, with storage battery, if this is needed, is now available for transillumination of the accessory nasal sinuses, jaws and other tissues. Daily use of these instruments will develop technical skill and make them valuable aids in diagnosis.

There is a growing custom in urban practice for general practitioners to have the routine laboratory examinations, such as urinalysis, blood estimations and other simple tests, made and the results interpreted for them at the numerous available commercial laboratories. In my opinion this is a great fault in practice; it would be quite as rational for the practitioner to depend on available organized clinics for the physical examinations and diagnosis of patients.

For the few patients who require laboratory or instrumental tests which involve special knowledge and technical skill in their application, such as blood chemistry, serology, bacterial cultures, elaborate blood counts, electrocardiography, efficient roentgenology and the like, the practitioner should make use of the excellent commercial laboratories, public clinics and available state, county and municipal public health laboratories.

## PHYSIOLOGY AND MODERN MEDICINE

Modern medicine is still engaged with the importance of the morbid anatomic lesion as to its etiology, nature, evolution and its modifications by management and treatment. But, today, we have quite as great a concern in the coincident functional disorder. That is, a study of pathologic physiology is recognized as of great importance in the practice of medicine. Therefore, the interest in pathologic physiology has resulted in the elaboration of laboratory and instrumental functional tests in diagnosis which require such great technical skill and experience in their application that they are valueless to the general practitioner. Fortunately, these refinements in functional diagnosis are not needed in more than 20 per cent. of the patients of any community. Unfortunately, the clinicians and laboratory workers who have devised these tests and



instruments have not indicated how some of the ultra-scientific functional tests may be modified to make them utilizable by the general practitioner. It is my privilege to attempt to describe how the physician may use available simple methods to ascertain the approximate function of some morbid anatomic conditions.

#### CHRONIC NEPHRITIS

As a rule, the general practitioner has the opportunity to see patients in the early stage of disease. At any rate, most patients with chronic disease seek aid comparatively early. Therefore, the general practitioner will have an opportunity to test out the function of organs with manifest morbid anatomic changes before severe constitutional symptoms develop.

When the practitioner finds albumin and casts in the patient's urine, he is justified in making a diagnosis of nephritis. But he must understand that chronic nephritis is often associated, soon or late, with morbid cardiovascular changes, varying degrees of edema of the soft tissues, dyspnea on exertion, and other symptoms and signs indicative of constitutional disturbance.

To appreciate and comprehend the relationship between nephritis and the morbid tissue changes in other portions of the body, I would recommend that the general practitioner adopt the excellent clinical classification of nephritis made by Dr. Henry A. Christian of Harvard, which is as follows:

1. Acute nephritis.
2. Chronic nephritis:
  - (a) With edema.
  - (b) With vascular hypertension.
  - (c) Mixed or combined type.
3. Essential vascular hypertension progressing to chronic nephritis.
4. Renal arteriosclerosis progressing into chronic nephritis.

This is not a formidable and incomprehensible classification such as prevails in the literature, but is a good working basis for every-day practice.

Now, the general practitioner is likely to discover evidence of nephritis in his patients before the constitutional disturbances appear. However, he should know that constitutional evidences of the body changes associated with chronic nephritis may be present, and should make a thorough physical examination, which will include the blood pressure, the condition of the heart, the presence or absence of edema in the soft tissues, and the presence or absence of dyspnea on exertion.

He should avail himself of a simple means of testing the function of the kidneys. The kidney excretes water, salts, and nitrogenous and other elements. The epithelial cells lining the kidney tubules possess the special function to resorb the threshold elements, such as sodium chlorid, from the water which reaches the tubules from the blood passing through the glomeruli. Were it not for this important function of the kidney, the blood and other body fluids would be deprived of the necessary amount of these threshold substances to maintain their chemical and physical equilibrium, which would be disastrous to life.

The general practitioner can test with approximate accuracy the ability of the kidney to excrete water and salines by the following simple method:

For a patient living in the ordinary routine, the urine of the night is collected for a period of twelve hours, is measured, and the specific gravity is taken and noted. At noon the patient is given a liberal mixed meal containing meat and other albumins, and a liberal amount of common salt as a condiment. Following the meal, the urine is collected in a

separate receptacle every hour for four or five hours, is measured, and the specific gravity of each specimen is noted. On the second day, in the morning while fasting, the patient drinks three or four pints of pure water. Then for five hours the urine is collected in a separate receptacle every hour, measured, and the specific gravity of each specimen is taken and noted.

These tests afford the following information: The ability of the kidney to excrete water, which is evidenced by the increase of the water output during the fasting period when the patient is drinking water freely, as compared with the bulk of urine passed during the night and that excreted after the hearty meal. The ability of the kidney to concentrate and excrete salines, which is evidenced by a specific gravity of higher degree of the specimens of urine voided after the hearty meal, when compared with the specific gravity of the night urine and of the specimens voided while taking water freely. The ability of the kidneys to concentrate and excrete salts indicates a fairly good function in the excretion of nitrogenous waste and other poisons. The tests will show a very good function of the kidney when the urine is notably increased by water drinking, and when the specific gravity of the urine taken after the hearty meal is comparatively high. The reverse of these findings would indicate poor or very bad function. These tests will be of the greatest value in those patients who show little or no constitutional disturbance. A patient who is suffering from anasarca would be unsuitable for these tests because, no matter what the cause of the dropsy, the power of the kidney to excrete water would probably be poor.

The utility of the test depends on its use in the early stage of nephritis. When so used, the information given will enable the practitioner to give a rational prognosis, and to apply appropriate management and treatment.

For those patients who show very poor function of the kidneys, the conscientious practitioner will desire to apply more refined functional tests of the kidneys. If his patient is financially able, he can be sent where blood chemistry and other tests may be applied. For the poor who are unable to pay for the transportation necessary to reach these centers, there is at present no usual means to afford them this important service. Later I shall mention what should be furnished each community to make available to the practitioner the refinements in diagnosis and in treatment which a few patients require.

Lack of time and space prevents a consideration of the various types of nephritis, their recognition and the indicated management and treatment. The subject is important, but would require more time than is allotted for its consideration alone. However, if the practitioner has the ambition and the energy to perfect himself in a knowledge of nephritis, he may avail himself of the excellent literature of recent periods, and especially of the reports of Dr. Henry A. Christian and his co-workers in the Peter Bent Brigham Hospital at Boston.

#### HEART DISEASE

The condition of the myocardium and the ability of the heart muscle to function is a question of far greater importance to the patient and to the general practitioner than the anatomic diagnosis. As long as the myocardium has the ability to function anywhere near normally, the patient's health, as far as the heart is concerned, is usually fairly good, and there is no immediate



jeopardy to life. It is true that degenerative changes in the myocardium are caused by or are hastened by certain morbid anatomic lesions. For example, mitral stenosis interferes mechanically with the passage of blood through the heart, causing overwork, dilatation of the left auricle, and comparatively rapid myocardial changes.

In heart conditions the practitioner should avail himself of every available simple means to acquaint himself with the anatomic condition of the heart; that is, its size, the presence or absence of murmurs, and its rhythm, and at the same time should note by careful physical examination the presence or absence of other morbid conditions of the body. For example, he may find toxic goiter, chronic nephritis, neurosis associated with neurasthenia, and other constitutional disturbances which cause heart symptoms.

To test the functions of the heart, he should have the patient exercise for short periods of a minute or less, with a rest period following, by hopping on one foot for fifty to a hundred times, by walking or running for twenty-five or fifty yards, by climbing stairs, or by calisthenic exercise of any kind. Before, during and after the exercise, the rapidity, rhythm of the heart action and the number per minute of the radial pulse should be noted, the presence or absence of undue dyspnea, the presence or absence of actual pain in the heart region, and changes in the color of the skin. If a patient is able to take these exercises without great objective disturbance of the heart, which would include a return of the number per minute of normal heart beats or the number before exercise, within one minute after the cessation of any one form of exercise, the manifest anatomic diagnosis is unassociated with any serious damage to the myocardium. On the other hand, if the pulse remains rapid after exercise for three or four minutes, if the patient has an undue dyspnea on exertion and there is evident precordial pain and disturbance of the circulation of the skin, the myocardium is damaged and requires rational management and treatment.

In 1918, while in England, I visited the heart military camp at Colchester, which was under the direction of Sir Thomas Lewis. The patients in the camp were soldiers on furlough with disability due to alleged heart disease. As you are aware, Sir Thomas Lewis has been one of the most efficient investigators of the normal and pathologic physiology of the heart and of its diseases. In this work of investigation he utilized the electrocardiograph and the polygraph. At this heart camp I was gratified to find that he did not maintain a laboratory with these instruments of precision which he used in his investigatory work, but relied entirely on the simple available means of diagnosis which are possessed by every practitioner of medicine. After making a complete physical examination of each patient to ascertain the presence or absence of other constitutional disturbances, he noted the presence or absence of heart murmurs, the presence or absence of hypertrophy, and then tested the function of the heart by the means I have outlined. By these measures he was able to make an accurate estimate of the heart condition of the soldiers, and a majority of them were returned to active duty in the field.

The general practitioner can learn to do this himself; furthermore, if he will follow this method of practice he will be able to allay the anxiety of many of these patients by giving a rational prognosis based on the

ability of the heart to function. For those patients with heart lesions who present evidences of poor function, he will apply the appropriate treatment, referring those who require greater knowledge and technical skill than he possesses to qualified colleagues. Time and space do not permit a discussion of the treatment of the failing heart. I will recommend that the general practitioner secure and read *Clinical Diseases of the Heart*, by Sir Thomas Lewis, and also *Diseases of the Heart*, by Sir James Mackenzie.

#### DISEASES OF THE LUNG

There is no short and easy road to the accurate diagnosis of diseases of the lung. Of these, tuberculosis is one which requires acquired skill in the application of physical diagnosis with the experience which comes from daily practice. But the physician who applies himself earnestly to physical examination of the lungs will qualify himself to recognize the evidences of pulmonary tuberculosis. The failure to recognize the disease is due to the neglect thoroughly to examine a majority of patients. Too often the patient is subjected to the expense of a roentgen-ray examination of the chest which does not reveal, as a rule, morbid changes which cannot be detected by ordinary available means of physical diagnosis. As a refinement and to satisfy one's curiosity to know whether the physical findings discovered are correctly interpreted, a roentgenogram or a fluoroscopic examination may be made of the chest. It is important to examine the sputums for tubercle bacilli, and this knowledge is available to the practitioner through existing laboratories if he is not able to make the examination of the sputum himself.

#### DISEASES OF THE STOMACH

The technic of using the stomach tube efficiently is easily acquired, and the general practitioner should utilize this useful aid to diagnosis. By means of this instrument he will be able usually to verify the diagnosis of ulcer of the stomach or anatomic obstruction of the pylorus due to any cause, and its use will afford satisfaction. If a hearty meal is given at bedtime and the stomach tube reveals food in the stomach in the morning, it is a sure index of organic pyloric obstruction. With diseases of the stomach, as in other conditions, one must obtain a satisfactory history from the patient and make a general examination. It must be remembered constantly that gastric symptoms, particularly those ascribed to peptic ulcer, are often caused reflexly by chronic appendicitis, less frequently by gallbladder disease, and by morbid lesions of other abdominal and pelvic organs.

Carcinoma of the stomach, especially in its early stages, is more difficult of diagnosis, but the associated poor appetite, lessened strength and endurance, the incidence of pain immediately or shortly after taking food, the frequent nausea and occasional vomiting, and the low acidity of the gastric juice should make the practitioner awake to the possibility of cancer. In my opinion, in these patients, early exploration by the surgeon is justifiable with the hope that the disease, if found, may be wholly eradicated.

#### CHOLECYSTITIS

Cholecystitis, with or without gallstones, is of frequent occurrence in medical practice. The condition occurs with gallstones in persons past the meridian of life more frequently than in younger individuals. Frequently the disease is latent, but even here is apt to



cause functional disturbance of the digestive organs. In the absence of other symptoms pointing to intrinsic disease of the stomach, these symptoms should arouse the suspicion in the mind of the practitioner that his patient has gallbladder disease. Pain in calculous cholecystitis is rather characteristic in the fact that it is often agonizing in character and is often associated with pain at the spine of the right scapula, and in some patients it radiates to the mediastinum, and the heart is disturbed. Attacks of gallstone colic are sometimes precipitated by mental emotion, by lifting heavy weights or by riding over rough roads, and sometimes it is brought on by an overloaded stomach. When the gallstone reaches the common duct, the pain is usually aggravated, as compared with that of cystic duct stone, and jaundice usually supervenes and confirms the diagnosis. Cholecystitis, of a latent character even, is associated with tenderness of the gallbladder. This may be elicited with the patient in a supine position by percussion over the gallbladder region while the patient takes a full inspiration and maintains it for a moment. This percussion is best accomplished by placing the points of the fingers of the left hand flexed at the middle joint over the gallbladder region and striking them a sharp blow with the right hand.

#### APPENDICITIS

Acute appendicitis in the primary attack is practically always sudden in its onset, and is associated with a reflex nervous disturbance often manifested by nausea and vomiting, and there is usually irritation of the peritoneum, manifested by rigidity of the abdominal muscles, and tenderness over the appendix region, and there is always constitutional disturbance manifested by rise of temperature, quickened heart beat and general discomfort. In such primary attacks the disease should be treated surgically and at once. In chronic appendicitis the clinical history will usually reveal former attacks, and quite as frequently there will be associated disturbance of the stomach often simulating peptic ulcer. In my opinion, recurring appendicitis does not require the immediate surgical emergency of the primary form of the disease. But the practitioner who fails to have the patient with chronic appendicitis operated on soon or late, and especially soon, is not conscious of his responsibility to his patient.

#### PERNICIOUS ANEMIA

We do not know the cause of pernicious anemia. The condition is associated with morbid anatomic changes in the alimentary tract, the bone marrow, the spleen and other blood-making organs. A general examination reveals a marked anemia with deformed red blood cells, some of which are very large and others much smaller than the normal. Much is made of the usual relative percentage predominance of the hemoglobin over the percentage of red blood cells, which is expressed by a so-called plus color index. With many physicians, the diagnosis is chiefly based on the blood examination. Now, the fact is that every true case of pernicious anemia presents physical evidences which are so characteristic that the diagnosis may be made on this evidence alone when they are recognized. These consist of a smooth tongue partly or wholly denuded of its epithelium, which shows evidences of irritation amounting in some regions of the organ to inflammation, and is accompanied by burning, smarting and other discomfort. There is practically always an achylia gastrica, evidenced by the absence of acid in

the gastric juice; frequent disturbances of the bowel, characterized by diarrhea, with alkaline liquid stools containing protozoa; and the pallor of the skin is characterized by a yellowish tint. The patient always presents more or less evidence of parasthenia in the form of numbness and tingling to the fingers, hands, toes and feet and sometimes extending to the proximal limbs. The practitioner is justified, therefore, in making a diagnosis of pernicious anemia when the patient presents these conditions, even if he is not able to make a thorough blood examination.

The importance of the recognition of pernicious anemia is to avoid unnecessary and expensive treatment. Under ordinary good rational management with attention paid to the diet, the avoidance of fatigue and other hygienic measures, the patient's life will be conserved, as a rule, quite as long as if he submitted to all of the modern measures practiced, including splenectomy and blood transfusion. I make this statement advisedly, based on an experience with more than two hundred patients suffering from pernicious anemia who died in spite of the application in some of them of these alleged curative forms of treatment. Time and space do not permit a discussion of other types of anemia.

#### ACUTE DISEASES

The problems which confront the general practitioner in the diagnosis of the acute diseases are many, but are less difficult to solve than those which are presented by many of the chronic diseases.

In these conditions he will not usually distress a patient suffering from an acute disease in an attempt to secure an exhaustive history of his family or of the habits and other data so important in the recognition of chronic diseases. Here, with the patient in bed, time may be taken, even over a period of two or three days, to make observations to insure the proper diagnosis, provided, of course, that in the contagious diseases or when one suspects or apprehends a contagious condition, the other members of the family and the community will be safeguarded by proper preventive measures. In suspected diphtheria, antitoxin will be used because it is known that the earlier the specific remedy is applied, the more likely is the life of the patient saved. The subject of the diagnosis of acute diseases is too large to enter on here. The progressive practitioner will keep himself informed of all the newer available and especially the simple methods of diagnosis, and will utilize the available commercial, clinical, state, county and municipal laboratories for the bacteriologic and serologic specific tests which are often necessary in the diagnosis of cases of acute disease. Time and space will not permit a broader discussion of diagnostic problems which are difficult of solution.

#### ECONOMIC CONSIDERATIONS

I am very mindful of the economic difficulties which embarrass many medical practitioners. The rural practitioner is subjected to physical and mental fatigue from long hours of work, often with insufficient sleep, and exposure to inclement weather, and frequently is inadequately paid for his services. In consequence, he is disinclined to use thorough, painstaking methods of diagnosis, becomes careless, is apt to avoid medical society meetings, and reads medical literature with but little interest. Of course, there are many exceptions.

In the city the general practitioner meets a comparatively larger number of poor pay or wholly indigent patients than are found in rural districts. The impos-



sibility of collecting an adequate fee from many poor patients begets in many city practitioners the habit of superficial methods of practice. Then, too, competition is usually great in the city, and it is probable that the average general practitioner of the city has a smaller annual income than his rural medical brother. But the city physician has opportunities for professional advancement, if he will take advantage of them, by attendance on public clinics and medical society meetings, and by reading good medical literature in accessible libraries.

But whether one is a practitioner in the city or in the country, the economic conditions peculiar to each can be greatly improved by one's own efforts. The fundamental principle which each practitioner must adopt to overcome his economic embarrassment is to improve himself professionally. To accomplish this, I believe he must steadily follow the methods of clinical practice and other self-educational opportunities which I have outlined. I sincerely believe that if he will do this, he will attract to himself a large number of patients, will receive more adequate financial reward, and will find real enjoyment in his work.

Many years ago an observing philosopher said, "The pathway to the door of the qualified man, desirous of giving honest, efficient service to the public, is worn smooth by the passage of many feet."

I believe that the preservation of the general practitioner, as the most important factor in the field of practice, is dependent, chiefly on himself. He must keep abreast of the advance of modern medical knowledge and practice, chiefly by his own efforts. If he strives to improve and help himself he will be successful; will justify his importance in the medical field, and will attract the ill and injured to his door because of his professional individual superiority as compared with men in narrower fields of practice, alone or in public or private groups.

#### FACILITIES NEEDED BY GENERAL PRACTITIONERS

Many general practitioners of the city lack hospital facilities for the small percentage of their patients who require hospital care. For the small number of his patients who require blood chemistry, electrocardiography and other technical refined tests, he can avail himself of the services of commercial clinical laboratories and those conducted by public and private clinics.

The practitioner in most rural communities lacks both the hospital and available laboratory facilities for the refined physical and functional diagnostic tests which his practice demands for 10 or 15 per cent. of his patients.

The necessity for the preservation of the general practitioner in the city and in rural districts, for the general public good, justifies and demands that the organized medical profession should assume leadership in educating the public to understand and comprehend the need of hospital centers, including diagnostic facilities in every community financially capable of self-support.

Perhaps this much to be desired improvement of the facilities for general practice is unattainable in most communities, for the reason that the medical profession as a whole does not accept its responsibility, and without the leadership of the medical profession the public will remain ignorant of its own welfare needs and will not act.

There is another possible solution of the problem which may afford the general practitioner the support

and facilities he requires to furnish all of his patients efficient service.

#### PRIVATE GROUP PRACTICE

Private group practice is a modern development. If the specialists in surgery, internal medicine and the narrower fields of medicine and surgery and the laboratory experts who form the group are men of broad minds, unselfish, sympathetic and desirous of giving efficient service to the community, including the members of the medical profession not connected with the group, they could furnish a great need in city and rural practice. From 15 to 20 per cent. of the sick in a community require their specialized service in diagnosis and treatment; but they would and should act only as diagnostic consultants and advisers of treatment of patients sent by the general practitioner for these purposes only. An unselfish policy of this kind would justify private group practice, and would be a material professional assistance to the general practitioner and a great benefit to the community. On the other hand, the adoption of a selfish policy by the private group which would disregard and ignore the professional and economic welfare of the general practitioner will result in injustice to the public and disaster to the private practitioner and to the group itself.

The American family home has been and must continue to be the very foundation of this nation. Bolshevistic socialism, anarchy and public discord cannot exist in a nation of family homes. The integrity and perpetuation of this nation is dependent chiefly on the maintenance of family life; and the continuance of the family home demands the preservation of the family physician, the general practitioner.

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#### SUCTION IN THE TREATMENT OF LARYNGEAL DIPHTHERIA \*

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With the introduction of intravenous antitoxin, direct laryngoscopy with swabbing of the larynx, and finally suction, the mortality figures in laryngeal diphtheria have gradually decreased.

#### HISTORY OF THE RELIEF OF THIS DISEASE

The earliest records of catheterization of the larynx, for cases of inflammatory stenosis, is found in the writings of Hippocrates. Cannulas were carried into the throat along the jaws so that air might be drawn into the lungs. This procedure was practiced until the discovery of tracheotomy by Aschopiadon in the first century B. C. Catheterization was lost sight of until 1780, when it was revived by Chaussier, who proposed the use of a laryngeal tube in the asphyxia of the new-born and to overcome obstruction due to disease.

Dissault, in 1801, and many others after him appear to have had some measure of success in the treatment of laryngeal stenosis by this method, particularly in adults; but the retention of one end of the tube in the trachea while the other protrudes either from the mouth or from the nose is obviously impracticable in children.

\* A preliminary report from the group service at Willard Parker Hospital.



THE RÔLE OF INTUBATION

The first to advocate the treatment of laryngeal obstruction by intubation was Bouchut, in 1858, and it was he who demonstrated that the larynx will tolerate a tube. The profession of Paris condemned and even ridiculed the new method and said it could only rarely supplant tracheotomy, which was used to relieve obstruction of the larynx until 1885, when O'Dwyer first introduced suitable instruments for intubation. Beginning with a tube like a bivalve speculum, he experimented for a number of years, until his well known tubes were perfected. Considerable modifica-

quently had immediate relief. By this method Thomson reduced the mortality by about 10 per cent.

THE USE OF SUCTION

Tracheobronchial diphtheria, the type of case with a low membrane, does not, however, yield promptly to the applicator treatment. What is considered a further step in the relief of laryngeal diphtheria is the use of suction to draw up the obstructing membrane and mucus.

In an effort to avoid intubation, we have in the past permitted our patients to remain dyspneic for hours, sometimes to the point of exhaustion, struggling for air; we had hoped that they might ultimately expel the membrane, or that the antitoxin might check its rapid formation. At present we employ suction promptly, and as frequently as indicated. The patient is wrapped in a mummy bandage as for intubation, and through a Jackson laryngoscope the membrane and mucus are aspirated by means of a 16 to 18 French silk or metal catheter, which is connected to an aspirating bottle, and in turn connected to an ordinary electric suction pump, capable of producing from 5 to 10 inches of vacuum.

A TYPICAL CASE

The citation of a fairly typical case, one in which, undoubtedly, intubation would have been performed, will illustrate our method of treatment:

A boy, aged 3½ years, admitted, 9 p. m., Oct. 14, 1922, had been ill three days. He appeared acutely ill, and was of poor color. He had a croupy cough with moderate intercostal and epigastric retractions. In addition, he had an extensive membrane on the tonsils which spread onto the posterior pharyngeal wall. Because of difficulty in striking a vein, 15,000 units of antitoxin was given intramuscularly. He had had 10,000 just before admission.

Examination of the larynx revealed membrane on the arytenoids, on the aryepiglottic folds, and extending below the cords.

A silk catheter, as described, was passed through the lumen of the laryngoscope, and the membrane was aspirated from the larynx so that it was fairly well cleared of membrane.

TABLE 1.—COMPARISON WITH THE RESULTS OF PREVIOUS YEARS

	—May-December—	
	1921	1922
Total cases of laryngeal diphtherias.....	158	106
No local treatment—mild cases.....	43	21
Applicator treatment .....	13	12
Applicator and intubation.....	18	0
Intubation .....	84	18
Suction .....	0	46
Suction and intubation.....	0	9
Total deaths.....	41	14
Mortality .....	25—%	13+ %

tions have been made since, and shortly before his death Lynah devised the non-cough-up tube.

While intubation has saved many lives in diphtheria and other diseases affecting the larynx, Thomson<sup>1</sup> emphasized the disadvantages of intubation and stressed the value of avoiding it when possible. The tube, no matter how carefully introduced, may cause slight injuries to the larynx. A bronchopneumonia may follow; or a chronic stenosis of the larynx, requiring the prolonged use of an indwelling tube with its attending dangers, is not an infrequent result. The chronic stenosis may be due to ulceration brought about by retention of secretion and stenosis from tube decubitus.

OBVIATING INTUBATION

Loosened diphtheric membrane is frequently the cause of obstruction to the breathing, and the removal of this membrane is desired. O'Dwyer himself recognized this, for he wrote, "I have devised and tried several instruments for the removal of pseudomembrane from the trachea, but they have not proved satisfactory."

Drug therapy had failed to eliminate the membrane, and not until the introduction of the antitoxin intravenously was the rapid formation of the membrane somewhat checked. With this method of administration of the antitoxin a good number of the patients that require intubation need it after the first twenty-four hours. While this eliminates some of the cases, others still remain which require intubation.

In taking cultures directly from the larynx, Thomson and others at this hospital noted that the dyspnea was caused either by loose membrane drawn into the lumen of the larynx on inspiration, or by a thick, mucopurulent material, which the patient seemed unable to cough up. In only a small number of cases was the dyspnea due to the attached membrane above or to an inflammatory stenosis. We noticed that this loose membrane came away frequently on the swab, and the cough following the swabbing cleared the mucus away, so that a child ready for intubation fre-

TABLE 2.—THOMSON'S FIGURES OF 1920 COMPARED WITH 1919

	—Oct., Nov. and Dec.—	
	1919	1920
Total number of cases of laryngeal diphtheria....	159	132
Number of cases not treated.....	84	79
Intubation .....	75	16
Applicator treatment not intubated.....	0	37
Total number of deaths.....	42	20
Mortality .....	26%	15%

There was immediate relief, breathing became easier, retractions disappeared, and the color improved. About six hours later the patient became restless and had attacks of difficult breathing and cyanosis. At 5:30 a. m., eight and one-half hours after admission, the patient was again examined with the laryngoscope. A thin film of membrane had formed, and two pieces of membrane could be seen flapping under the cords with each expiration. Suction was again employed, with relief to the patient.

During the rest of the day the patient was fairly comfortable, with only occasional attacks of dyspnea. That night, however, suction was again indicated; small shreds of membrane and considerable mucus was obtained. The patient was comfortable for the remainder of the night. The temperature, pulse and respiration dropped to normal on the third day, and the patient's color was good. For forty-eight hours longer he was still somewhat croupy, but from then on he made a speedy recovery.

1. Thomson, C. A.: Removal of Diphtheritic Exudate from the Larynx; Employment of an Applicator for the Purpose of Avoiding Intubation, J. A. M. A. 78: 1198 (April 22) 1922.



## COMMENT

In the larynx and the trachea, the pseudomembrane is apparently less intimately attached than in the throat, and its removal does not leave as much and, in fact, very little bleeding surface. In the case cited, removal of the membrane relieved obstruction promptly.

From May until the last part of December, 1922, 106 patients with laryngeal diphtheria were admitted to the croup service at Willard Parker Hospital. There were twenty-one mild cases which required no treatment. Twelve patients received applicator treatment. Intubation was performed in eighteen cases. Nine patients received suction and intubation. There were forty-six cases in which suction was used exclusively. The total number of deaths was fourteen, a mortality of 13 + per cent.

Of the eighteen patients subjected to intubation, eight died with terminal bronchopneumonia. Three of these were moribund on admission; eight have been discharged cured, and two are still in the hospital, and cannot go out without their tubes for any considerable length of time.

Two patients who underwent tracheotomy died.

Of the nine patients treated by suction and intubation, two died, and the rest recovered. Both patients had bronchopneumonia on admission.

The remaining two deaths occurred in the series in which suction was used exclusively. Both these patients had toxic tracheobronchial diphtheria. They were ill about four days before admission; one had, in addition, a pharyngeal involvement.

## CONCLUSION

1. Suction is especially advocated for cases in which there is a low membrane, which cannot be reached by either intubation tube or tracheotomy.

2. Laryngoscopic examination with suction in severe cases may be repeated when necessary every six or eight hours. It is interesting to note that many of the cases required but one treatment; in these the membrane was loose in the larynx; intubation was indicated, and the foreign substance was removed by suction.

3. In reference to the cases in which suction and intubation were employed, these being only 16 per cent. of the total number of cases in which suction was employed, it was noted that intubation was necessary because of a persisting edema.

4. Convalescence from laryngeal diphtheria has been shortened by sparing the intubation patients the strain they were formerly subjected to in the desire to avoid intubation.

5. The avoidance of intubation has no doubt diminished the incidence of "chronics," or patients who cannot endure removal of the cannula.

6. By employing visually guided suction, our mortality has been reduced.

**The Environmental Influence on Child Development.**—The environment of the young child is one of the most important influences in his development. Because of the force of reflex imitation working with this factor of plasticity, the emotional attitudes of those by whom he is surrounded leave their impress on the child before he has lived thirty months. His disposition is being formed; he is becoming irritable, quick-tempered, moody, or sunny and cheerful; just which, however, being determined to a larger extent than people realize by the nature of the adults surrounding him, and this all unconscious to himself, simply as a result of the modifiability of his neurones.—W. P. Lucas. *Hospital Social Service* 7:13 (Jan.) 1923.

## CARBON TETRACHLORID IN THE TREATMENT OF HOOKWORM DISEASE

## OBSERVATIONS ON FIFTY THOUSAND CASES \*

S. M. LAMBERT, M.D.

SIWA, FIJI

In a recent issue of *THE JOURNAL* I<sup>1</sup> reported on the use of carbon tetrachlorid in the treatment of 20,000 cases of hookworm disease in Fiji. My observations were based on experiments conducted up to June 1, 1922. By the end of October, 1922, we had treated an additional 30,000 cases, making 50,000 in all.

The picture presented by the earlier article, while true in the light of experience up to the time of writing, may give the unwarranted impression that carbon tetrachlorid is entirely harmless. I desire, therefore, to submit here the results of our further experience in Fiji with this drug.

We continued the exclusive use of carbon tetrachlorid in the treatment of intestinal parasites with good results till we had treated 42,000 cases. The dosage used was 0.2 c.c. (3 minims) of the drug for each year of age up to 15 years. Adults were given from 3 to 4 c.c. (45 to 60 minims). Up to this time the symptoms reported were few indeed; and "mass treatment" with the drug became so increasingly popular among the natives that we contemplated treating whole populations from a central location in each district instead of continuing our house-to-house method of campaign, which is slow in a country where the homes are so widely scattered. Trial of the new plan in one district showed that it was feasible.

We used, until it was exhausted, a supply of carbon tetrachlorid which showed on analysis a small amount of carbon disulphid, insufficient to do harm. For the last 8,000 cases we used a presumably chemically pure drug. Among these cases there were three deaths. The government chemist, Mr. C. H. Wright, analyzed the new supply of the drug and found it far from chemically pure. A sample of the drug sent to New York was too small for adequate analysis; it showed, however, a fair amount of impurity of unknown nature.

Protocols of the necropsies in the three fatal cases are given below:

**FATAL CASE 1.—History.**—A boy, aged 7, an East Indian of Madras parentage, was treated, Tuesday morning, August 22, with 28 minims (1.75 c.c.) of carbon tetrachlorid. Magnesium sulphate was left with his parents with instructions to give it at the end of two hours. On Thursday the mother reported that the boy was ill. Subassistant Surgeon Kalamkar reported that his illness was not severe. On Friday afternoon, the district medical officer was asked to see him, and he kindly attended him until the end, giving him careful symptomatic treatment. The boy refused to enter the hospital till Saturday, and died early Sunday morning. During the interval from Tuesday until his death, he passed nearly fifty ascarids by mouth and by rectum.

**Clinical Course** (Reported by Dr. D. C. Ogilvie, District Medical Officer, Navua).—When seen on Friday, August 25, at 5 p. m., the boy was semicomatose, occasionally uttering a cry, and pressing his abdomen with his hand as if in pain. He could not be sufficiently aroused to speak. The abdomen was very tympanitic, the liver, slightly enlarged. The heart was beating strongly, about 80 a minute. There were no

\* The treatments described in this paper were given during the progress of a campaign for the control of hookworm disease, conducted by the government of Fiji in cooperation with the International Health Board of the Rockefeller Foundation.

1. Lambert, S. M.: Carbon Tetrachlorid in the Treatment of Hookworm Disease: Observations in Twenty Thousand Cases; *J. A. M. A.* 79:2055-2057 (Dec. 16) 1922.



murmurs. The heart sounds were clear. The patient was in a state of semicomma. The pupils were dilated. The knee-jerks were absent. The corneal reflex was present. There was marked trismus. Occasionally there occurred clonic convulsions of the arms and legs lasting for only a short time. The temperature was normal.

Enemas were given and were returned clear. On Friday the patient passed urine naturally. Trismus interfered with the administration of medicine; what was given was for the most part vomited. On Saturday the coma was deeper. The corneal reflexes were absent. Clonic convulsions were more frequent. Trismus was unaltered. The bladder was distended with urine. The temperature was 102.4 F. Treatment on this day was unavailing; the pulse grew weaker in the night, and the boy died at 1 o'clock, Sunday morning.

**Necropsy** (Reported by Dr. D. C. Ogilvie).—The body, examined at 11 a. m., August 27, ten hours after death, was well nourished, with no external signs of disease. The abdomen was protuberant from the presence of tympanites. The heart muscle was rather pale, but presented no marked pathologic change. Antemortem clots were present in both ventricles. It weighed 4 ounces (113 gm.). The lungs were normal. About 2 drams of fluid was present in each pleural cavity. The liver was enlarged, weighing 25½ ounces (725 gm.). Its appearance was most striking, being of a yellow putty color, with the surface beneath the capsule dotted closely with small petechial hemorrhages. On section, the outline of the lobule was obscured by the degenerative changes. The bile ducts were patent. The kidneys were congested, and showed macroscopic evidence of cloudy swelling. The weight of the left kidney was 2½ ounces (70 gm.); right kidney, 3¼ ounces (92 gm.). The bladder was distended, and contained urine and gas. The urine contained a small amount of albumin; acetone was present, but no sugar. The stomach presented a small area of inflammation, with small submucous hemorrhages on the posterior wall. The intestine was moderately distended with gas. Fifty ascarids were found, most of them alive. The intestine contained no feces, but many worms were seen full of ingested feces. Twenty *Trichuris trichiura* worms were also discovered, but no hookworms. In the second part of the duodenum there was a coiled mass of thirteen ascarids, distending the intestine but not packed so tightly as to cause obstruction. Nothing abnormal was found in the large intestine.

The diagnosis was death from carbon tetrachlorid poisoning.

Dr. S. T. Darling of Baltimore examined specimens of the liver and kidney from this case. The liver showed a very severe necrosis of the central and intermediate zones of the lobules. Perhaps from one half to two thirds of the liver substance had been destroyed. There was an associated cellular proliferative change around the bile ducts. The kidneys appeared normal.

Immediately after this death we had from the same area, within a period of three weeks, five patients who became ill in the same manner. I saw two of them. Both were seriously ill. To the first, a small child of 3 who was unable to stand and was carried to the laboratory in her father's arms, I gave 6 drops of oil of chenopodium. When she was brought in one could see the intestines writhe beneath the thin abdominal walls. She had passed a number of ascarids, estimated by the parents at thirty or forty, and I believed that she still suffered from these. The next day she was all right, after passing about sixty more worms. The four other persons who developed serious symptoms were immediately taken to the hospital and given santonin. They passed ascarids numbering from nearly 100 to more than 150. When they were relieved of these, their symptoms disappeared.

**FATAL CASE 2.—History.**—An Indian boy, aged 5 years, whose parents were Madras born, until three weeks previous to treatment lived at Naitata, Navua. He was treated September 27, with 15 minims (1 c.c.) of carbon tetrachlorid.

Magnesium sulphate was said to have been given two hours later. The patient became sick on the 28th. He was taken to the Colonial Hospital on the 29th, and died three hours after admission.

**Necropsy** (reported by Dr. Basil M. Wilson, Resident Medical Officer, Suva Colonial Hospital).—The body was well nourished. The liver showed many small petechial hemorrhages under its capsule. Otherwise the organ appeared normal and healthy. The other organs appeared healthy. A portion of the liver and one kidney were removed for microscopic examination. More than 100 roundworms (*Ascaris lumbricoides*) were found in the gastro-intestinal tract.

**FATAL CASE 3.**—At the end of October the third death occurred. The postmortem examination gave the same findings in the liver that were shown in the other two cases.

Specimens of liver and kidney from Cases 2 and 3 will be available for diagnosis.

A striking feature in connection with these deaths in a comparatively small community is the fact that, although they were given wide publicity, they had no hindering effect on our campaign. No one refused to take the treatment because of the fatalities, and in one district, where examination showed so light an infection that we did not want to carry on mass treatment and had instead established a dispensary, we were overwhelmed the first day by the rush of applicants, and in a few days treated nearly the whole population.

#### MODIFICATION OF CARBON TETRACHLORID TREATMENT

After our experience with the heavy *Ascaris* infection in Navua, it was thought wise to modify the treatment for young children by adding to the carbon tetrachlorid a vermifuge more effective for *Ascaris*. Oil of chenopodium is considered such a drug. It was added in the proportion of one part of chenopodium to eleven parts of carbon tetrachlorid. The dose of the mixture remained at 3 minims (0.2 c.c.) for each year of age. This meant 2¾ minims of tetrachlorid and ¼ minim of chenopodium for each year. We have now treated with this dosage several hundred persons, many of whom have had fairly severe *Ascaris* infections. The worms have all been removed dead. The mixture is not disagreeable to take, and children have not objected to it. The oil is held in a perfect solution in the tetrachlorid. The drugs may quite properly be given in the same proportions to adults in the accepted dosage of from 50 to 60 minims (3 to 4 c.c.).

#### TREATMENT OF PREGNANT WOMEN

Pregnancy is a condition in which the dire effects of hookworm disease are dramatized most vividly. This aspect of the infection is of first importance to district medical officers in Fiji, for those with a large Indian clientèle, it would seem, have among their obstetric cases a number of deaths each year of mother or child, or both, as a result of hookworm disease.

Oil of chenopodium is said to be contraindicated in the case of pregnant women, and these form an appreciable portion of a population whose women begin to marry at the age of 11 or 12 and have large families. In the first months of our campaign, these women made a large addition to our list of persons excluded from treatment for medical reasons, and consequently they constituted an extensive source of reinfection for those cured by our treatment. In June, 1922, we began treating all women with carbon tetrachlorid, and up to October we had had no case of abortion, though some hundreds of pregnant women had been treated.



## CONCLUSIONS

The present paper and that of December 16, 1922, present rather full evidence drawn from 50,000 treatments with carbon tetrachlorid.

1. Carbon tetrachlorid has shown itself to be the best vermifuge for the treatment of hookworm disease in a country where *Necator americanus* predominates.

2. The drug is palatable, requires no preparation of the patient, and, when pure, is apparently not toxic—all of which features are of advantage in a popular campaign.

3. Forty-two thousand persons were treated without morbidity or mortality from the drug. Among 8,000 cases subsequently treated with supposedly pure carbon tetrachlorid, three fatalities occurred. Chemical examinations, however, disclosed that this particular lot of carbon tetrachlorid was far from pure.

4. We emphasize the necessity for a pure supply of this drug.

5. It is possible that a dosage of 3 minims (0.2 c.c.) for each year of age with an adult dose of from 45 to 60 minims (3 to 4 c.c.) is larger than is desirable.

6. Where there is a heavy infection with *Ascaris*, the results are improved by the addition of oil of chenopodium.

## TREATMENT OF THE MENINGEAL FORM OF ACUTE ENCEPHALITIS WITH ANTIMENINGOCOCCIC SERUM

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Apropos of the recent report by Helmholz and Rosenow<sup>1</sup> of three cases of acute encephalitis treated with specific serum, it is of interest to record the striking effect of nonspecific serum in a case of acute encephalitis of the meningeal form.

## REPORT OF CASE

A schoolboy, aged 15, was a good scholar, but always nervous and inclined to be "twitchy." He was well until the night of Nov. 28, 1921, when there was slight fever and digestive disturbance, which was not taken seriously. No physician was called until the morning of Nov. 30, 1921, when he was observed by Dr. F. R. Lyman of Hastings, N. Y., who suspected meningitis. At 6 p. m. on the same day, when I saw him, the temperature was 102, the pulse 84, and the respiration 18. He was clear mentally, seemed cheerful and was fairly comfortable. There had been repeated vomiting for twenty-four hours, but no diarrhea. The patient was somewhat excitable. The eyes were suffused, and there was a slight lag of the left eyeball on external rotation. The pupils were equal, but rather small. The neck was not stiff, but the head came forward in a jerky fashion. The throat and ears showed nothing significant. Neither Kernig nor Babinski sign was found. The knee jerks were strongly exaggerated. The leukocytes numbered 8,020; the polymorphonuclears were 87 per cent. No diagnosis was made, but it was apparent that a serious infection was developing. On the afternoon of December 1, the patient was seen by Dr. Evan Evans, who found a well developed picture of meningeal irritation. The boy had vomited and was delirious all night, the temperature having reached 103. At 7 p. m. the boy was almost comatose, and could be roused only with difficulty and then presented a marked delirium. The neck was very rigid. Kernig's sign was positive on both sides. There was a positive Babinski sign on the right. The left abdominal reflex was absent, the right was present. The knee jerks were present and not

exaggerated. There was marked hyperesthesia. The pupils were small. The eyeballs were so rolled up beneath the lids that the character of the ocular movements could not be determined. The pulse rate was 80 and regular. The respiration was very irregular and jerky, with periods of rapid and shallow breathing, alternating with slow and rather irregular respiration which suggested profound interference with the respiratory center. The lumbar puncture gave 45 c.c. of water clear fluid under marked increase of pressure. There were 85 cells per cubic millimeter, 83 per cent. of them mononuclear in type. Globulin was increased to one plus. Subsequent culture was negative, and the smear showed no organisms.

In view of the rapid development of the meningeal picture, with obvious involvement of the respiratory center, and the very serious general condition of the patient, it was decided to give energetic treatment with antimeningococcic serum. It was felt that without some active measures the patient would die, and that attempts to secure a so-called nonspecific serum effect were justified. Accordingly, 25 c.c. of antimeningococcic serum was at once injected intraspinally. One hour later, 50 c.c. of antimeningococcic serum was injected intravenously. The usual precautions to determine sensitiveness had previously been taken. The patient passed a stormy night and exhibited an irregular and exaggerated, Biot type of respiration with moderate cyanosis. At 6 a. m., December 2, 60 c.c. of serum was given intravenously. At 8 a. m., lumbar puncture was done; 30 c.c. of somewhat cloudy fluid was withdrawn, and 20 c.c. of serum injected into the subarachnoid space. On this date the patient developed weakness of the left external rectus muscle and was apparently unable to swallow. He remained semicomatose, lost control of his sphincters, and was in grave condition. At 6 p. m., 40 c.c. of spinal fluid was withdrawn. This contained 980 cells. No serum was given. December 3, at noon, after a less stormy night, the maximum temperature was 104, and the pulse was 84. The patient had resumed the ability to swallow, and obeyed simple orders, but was profoundly weak and somnolent. There were myoclonic twitchings. Forty cubic centimeters of cloudy fluid was withdrawn, but no serum was given. December 4, the patient had improved, and began to speak in monosyllables; there was less twitching and less meningeal irritation. From this time rapid improvement began. The temperature became normal, December 7. There was complete paralysis of the left external rectus, moderate left ptosis, and some weakness of the left side of the face. Otherwise there were no residual manifestations. The patient had a very severe serum reaction, but, except for this, made an uncomplicated recovery. The left external rectus remained weak for several months, but eventually was restored to normal.

## COMMENT

The somnolence, the ocular and facial palsy, the myoclonia, the clear cerebrospinal fluid with small increase in cells and a high percentage of mononuclears, the absence of organisms on repeated smear and culture, the season and the fact of the not infrequent prevalence of the disease in the region seemed to classify this case definitely as an encephalitis.

It was apparent to observers that the effect of antimeningococcic serum in this case of acute encephalitis of the meningeal type was striking and beneficial. From the time of its administration, symptoms ceased to advance, and within thirty-six hours, the patient, who had not been expected to survive, seemed out of danger.

This case is not recorded in an effort to disparage attempts to develop a specific serum for the treatment of encephalitis. It illustrates, however, the point made by Helmholz and Rosenow concerning the care with which therapeutic results must be weighed, and the importance and probable value of nonspecific serum effects in infections of the character described.

49 East Fifty-Third Street.

1. Helmholz, H. F., and Rosenow, E. C.: Three Cases of Acute Encephalitis Treated with Specific Serum, J. A. M. A. 79: 2068 (Dec. 16) 1922.



A SIMPLE AND RAPID TEST FOR  
ALBUMIN AND OTHER URINARY  
PROTEINS\*WILLIAM G. EXTON, M.D.  
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While it is true that albuminuria does not always denote renal disease, the inescapable fact remains that albuminuria is almost always the earliest sign of nephritis; and it is generally discoverable months or even years before the symptomatology, the blood chemistry or the most sensitive of renal function tests become diagnostic.<sup>1</sup> Neither clinical nor insurance medicine has as yet taken as thorough cognizance of the importance of minimal amounts of albumin or of the relation of dilution of the specimen to amount of albumin as statistics justify, and chiefly because the albumin tests in common use do not enable one to make precise distinctions between truly persistent and genuinely intermittent albuminurias.

## VALUE OF VARIOUS TESTS

As a matter of technical practice, we are accustomed to the use of criteria which are not truthfully informative. For instance, if one uses Heller's test as the criterion, as many do, one is likely to miss altogether or to appraise as negligible the fainter reactions found in more dilute specimens, i. e., specific gravities running lower than about 1.016, when the same amount of albumin in proportion to the concentration of the specimen would have appeared distinctly unfavorable had the specific gravity of the specimen been 1.028. Observations of nephritics or a few dilution experiments will demonstrate this and teach us that, in our daily work, we are employing standards which lead us to classify as intermittent cases of albuminuria which are as a matter of fact persistent, and only apparently intermittent.

Much has been written about what Cammidge<sup>2</sup> has aptly called the "pitfalls" of Heller's and the heat test; and it is well known that the textbooks teach us not to rely on any one albumin test but to check up the one which may have been employed with one or two other tests. Thus, Heller's, and the heat test in some one of its modifications, have come to be preferred, and they are performed far more frequently than other tests, although strangely enough they have some of the same "pitfalls."

Both Heller's and the heat test serve their purpose beautifully if used understandingly and in a purely qualitative way. They fail us only when we try to stretch them, as it were, to get quantitative results; the truth of the matter being that, for want of better methods, we have been obliged to employ these tests as makeshifts, and we are so accustomed to them that the potential value of more accurate methods is not always fully appreciated. How gross and illusory are the deductions which we have been drawing from the reactions exhibited by the more commonly used albumin tests, a few simple experiments with checks, if carefully

made, will show; and, under the impression that a closer and more truthful means of dealing with albuminuria would prove to be advantageous, our experimental work was undertaken.

In 1889, Roche, layering with a 20 per cent. solution, proposed the use of sulphosalicylic acid as a precipitant for albumin in urine. Since then, the value of this reagent has impressed numerous other workers; primarily, MacWilliam,<sup>3</sup> who showed its differential value, and recently, Sanford,<sup>4</sup> who gives it the preference as a qualitative test for albumin in urine. Kober<sup>5</sup> has recommended it as a protein precipitant in connection with nephelometry, and Folin and Denis,<sup>6</sup> in connection with turbidimetry.

The physicochemical state of proteins in milk, urine, etc., has been the subject of much study, and the work on hydrogen ion concentration initiated by Sörenson has led to the investigation of protein behavior from this aspect. Pauli, Michaelis and others have contributed information regarding the flocculation of protein materials, and the work of Hanzlik<sup>7</sup> is of special interest with reference to the precipitation of serum albumin.

## THE AUTHOR'S TEST

Based on these and our own<sup>8</sup> experiences, by a process of experimental exclusion a test has been developed that has been thoroughly tried and found exceedingly satisfactory for both qualitative and quantitative testing for albumin in urine,<sup>9</sup> with a reagent consisting of a solution of 5 per cent. sulphosalicylic acid and 20 per cent. sodium sulphate. In fact, the test appears to be so reliable that checking up with other tests is rarely, if ever, necessary.

The reagent is highly acid, approximately equivalent to tenth normal hydrochloric acid, and so thoroughly loaded with salt that, when added to an equal volume of urine, a mixture is obtained that is quite uniform in specific gravity, hydrogen ion concentration and salt content, irrespective of the physicochemical constants peculiar to the particular urine tested.

## RESULTS

Tests were made on more than 60,000 urines in the Prudential and other laboratories, with these results: Urines loaded to great excess with uric acid, urates, phosphates, oxalates, urea, creatinin and other urinary constituents have invariably failed to produce any cloudiness at all with the reagent. A number of urines containing resinous and emulsifying substances which gave false Heller's and heat reactions did not develop

3. MacWilliam, J. A.: A New Test for Albumin and Other Proteids, *Brit. M. J.* **1**:837-840 (April 18) 1891; On the Use of Salicyl-Sulphonic as a Test for Albumoses and Peptones, *ibid.* **1**:115 (Jan. 16) 1892.

4. Sanford, A. H.; Connor, H. M.; Magath, T. B., and Heck, B. S.: The Significance of Slight Albuminuria, *Collected Papers of the Mayo Clinic* **13**:1921, reprinted from the Proceedings of the American Life Convention, pp. 54-70, 1921.

5. Kober, P. A.: Technical Applications of Nephelometry, *J. Indust. & Engin. Chem.* **10**:556 (July) 1918; Nephelometry in the Study of Proteoses, *J. Am. Chem. Soc.* **35**:290 (March) 1913.

6. Folin, Otto, and Denis, Willie: The Quantitative Determination of Albumin in Urine, *J. Biol. Chem.* **18**:273, 1914.

7. Hanzlik, P. J.: Precipitation of Serum Albumin and Glutin by Alkaloidal Reagents, *J. Biol. Chem.* **20**:13, 1915.

8. Exton, W. G.: Rapid Tests for Albumin, *Proc. A. Life Ins. M. Directors*, 1921, p. 188.

9. A liter of the reagent is made by dissolving 200 gm. of sodium sulphate (crystals) in from 700 to 800 c.c. of distilled water. After cooling down to about 35 C., 50 gm. of sulphosalicylic acid is dissolved by stirring and without further heating, and enough water is then added to make 1 liter. The reagent is not sensitive to light, and keeps indefinitely. The test is performed by mixing equal parts of urine and reagent, and warming. Even the warmth of a match suffices. Boiling does not spoil the test, but is unnecessary. Albumin-free urines so treated give a perfectly clear, transparent mixture; albuminous urines, a clouding with the degree of turbidity directly proportionate to the concentration of albumin.

\* From the Prudential Laboratory.

1. In a private communication, Dr. William G. Lyle, director of the Pathological Laboratory, Roosevelt Hospital, and Harriman Research Laboratory, informs me that, in an unpublished statistical study of 2,500 records of patients in whom, in addition to routine urinalysis, blood chemistry, renal function, diet and dye tests were made, the data disclosed albuminuria as the earliest sign of renal disease.

2. Cammidge, P. S.: Pitfalls in the Examination of Urine, *Polyclinic* **9**:73-76 (June) 1905.



perceptible cloudiness with the test, and the addition of oily, gummy and resinous substances to normal urines has likewise given consistently negative results. Numerous urines which gave misleading reactions with Heller's or the heat test because of substances which had been added to preserve the specimens, usually thymol or excessive amounts of formaldehyd, were found to be free of interference from such substances if the mixture was examined when warm. Thus, if read while the mixture is warm, the test appears to show serum albumin and globulin, exclusively.

When the mixture is cold, other proteins occasion opalescence or cloudiness, which clears rapidly on warming, the only exception being Bence-Jones protein, which gives a precipitate so characteristic that independent observers have used the identical expression to describe it. It looks exactly like "curdled milk," and does not clear up unless boiled.<sup>10</sup>

Secondary proteoses and protamins from spermatozoa fall out of solution and cause opalescence when the test cools. The microscope will differentiate these, and no confusion arises because the albumin precipitate remains unchanged whether the mixture is warm, boiled or cold, thus making the test practically specific for serum albumin and globulins.

Experiments with nucleoproteins extracted from yeast and thymus gland have proved negative; but, as these are not identical with urinary nucleoprotein, such experiments are merely suggestive. Of the last 60,000 urines examined in the Prudential laboratory, none contained enough nucleoprotein to be evidenced by the new test, although Heller's test occasionally suggested its presence; and the material of several large clinical institutions, during the last year, has not furnished a single specimen of urine containing a sizable amount of nucleoprotein. Evidently such urines are rarer than Bence-Jones specimens. The sensitivity of the test for nucleoproteins has, therefore, not been definitely established, and it is advised that a test for nucleoprotein be made separately by treating the diluted urine with acetic acid or Ott's reagent.

Urines that cannot be cleared may be examined for albumin by comparing the test as performed in the regular way with a control made by diluting the cloudy urine with an equal volume of clear water. The difference in cloudiness between test and control represents the amount of albumin in the specimen.

The most valuable feature of the test is its characteristic of inducing cloudiness directly proportionate to the concentration of albumin in the specimen, the difficulties in this respect encountered by Marshall, Banks and Graves<sup>11</sup> having been overcome, as already pointed out, by safely buffering against variations in salt content and hydrogen ion concentration through loading the reagent with salt and making it so acid that, when diluted with an equal volume of urine, the conditions necessary to constant uniformity of flocculation are attained, which makes a test truly quantitative. Dilution experiments with albuminous urines and a wide variety of normal urines to which given amounts of serum albumin were added have shown very satisfactory quantitative results with optical methods.

#### SUMMARY

This differential test for proteins in urine, with a single clear, watery reagent, keeps indefinitely and has these characteristics:

1. It is an exceedingly simple, rapid and accurate differential test.
2. It does not react with the bases or salts found in urine.
3. It does not react with resinous and similar foreign substances.
4. It is free of the inaccuracies of layering.
5. It does not require a fixed time for observation.
6. It gives a definite prompt and reproducible end-point.
7. It shows albumin plainly in specimens that cannot be cleared.
8. It is a shade less sensitive than the heat salt and acetic acid test.
9. It is specific for serum albumin-globulins, Bence-Jones protein and secondary proteoses.
10. It gives uniformly truthful quantitative clouds or precipitates adapted for optical measurement.

#### ACTION OF STRONGER SOLUTIONS OF MERCUROCHROME IN EARLY GONORRHEAL INFECTIONS

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The advancement in the treatment of gonorrhea has not kept pace with that of many diseases. It is generally agreed that efforts to improve on the more or less standard forms of treatment have been relatively unavailing. The introduction of the colloidal silver preparations marked the biggest advancement in recent years and, still more recently, the development of the mercury derivatives, as carried on by Young and his associates,<sup>1</sup> offered hope for an immediate sterilizing injection. As in the case of arsphenamin, the chemicals did not effect a cure in a single injection, though Frontz<sup>2</sup> has about eight well developed cases in which the process was absorbed after two or three injections of 1:1,000 acriflavine.

In spite of adverse criticism, mercurochrome-220 soluble possesses some commendable qualifications. It is a solution and not a colloidal suspension, and therefore penetrates animal tissues better. It has great germicidal value, a solution of 1:1,000 killing *Bacillus coli* and staphylococci in urine in one minute. The toxicity is negligible in ordinary dilutions, and there is no precipitate in urine. Its irritating properties would seem to be the only unsolved problem in its use.

It has been shown that "in thirty-eight hours after inoculation the gonococcus has only begun to penetrate the epithelial tissues,"<sup>3</sup> but that the penetration is a progressive one and extends to the subepithelial tissues. In the original experiments on mercurochrome it was shown that the urethral surface cells were most intensely stained, but that there was a diminishing amount of the stain toward the submucosa. The failure to get the germicide in sufficient concentration into the deeper epithelial layers and the glandular structures,

10. Through the kindness of Dr. H. M. Mosenthal of New York, and Dr. A. H. Sanford of the Mayo Clinic, Bence-Jones specimens were received, and we were favored with their observations on the nature of the flocculation with our reagent.

11. Marshall, J. T. W.; Banks, H. W., and Graves, S. S.: A Study of Proteins in Urine, Arch. Int. Med. 18: 250-262 (Aug.) 1916.

1. Young, H. H.; White, E. C., and Swartz, E. O.: A New Germicide for Use in the Genito-Urinary Tract: "Mercurochrome-220," J. A. M. A. 73: 1483 (Nov. 15) 1919.

2. Frontz, W. A.: Personal communication to the author, Oct. 26, 1922.

3. Fenger, quoted by Keyes: Modern Urology 1: 59.



is, of course, the reason for failure to accomplish a quick cure.

It seemed logical to me, therefore, that further study of the action of the germicides might be useful. After observing the action of the weaker solutions of mercurochrome-220 soluble in the urethra, a 2 per cent., then 3, then 4, 5 and even 6 per cent. solutions were tried. More favorable results followed the use of the stronger solutions. There was evidence that the use of the dye alone did not give as uniformly good results as when it was used alternately with one of the colloidal silver suspensions—argyrol or its equivalent. Those patients applying for treatment early appeared to do better, and I began to follow a definite method, as the cooperation of the patients, all private, was good.

In those cases in which the patients applied for treatment within twenty-four hours after the appearance of a discharge, a microscopic examination was made and repeated every few days. The three glass test of the urines was made at each visit, and it was ascertained whether the previous treatment had been extremely irritating, and if any untoward symptoms were developing. Each morning a small quantity of 5 per cent. mercurochrome-220 soluble was slowly injected with a blunt syringe, and was retained from three to five minutes. When considerable burning was produced, a prescription calling for oil of santal, 10 minims (0.6 c.c.), three times a day, after eating, was given the patient. On his return in the evening, a 25 per cent. argyrol solution was substituted for the mercurochrome. This was a daily routine, and was varied only in the hyperactive cases or in those prolonged and complicated.

I have been able to follow forty-six cases until an apparent cure was effected. They show several points of interest. Thirty-one patients, or 67 per cent., had had previous attacks. One had had as many as seven, the last one occurring three years ago. Two years ago he was referred to me for a slight morning drop, and on removal of an anterior stricture the trouble cleared. He had no evidence of other remaining infection. One had a history of "at least ten" attacks, the last one occurring while in the service three years before. He has never had evidence of existing posterior involvement since coming under my observation, and there is no evidence of damage resulting from the former attacks in the anterior urethra. It is hardly likely that the attacks of these men were recurrences.

In age, the youngest was 19; the oldest two were 51 and 54. The more severe symptoms were complained of by the younger men, though the fact that they had had few or no previous attacks, and were exposed to the more virulent organisms in persons without previous attacks, probably accounts for the condition.

Where there was considerable active discharge, the mercurochrome injection produced considerable burning; but this was complained of only at the first visit. This burning rarely lasted longer than twenty minutes, and never was more severe than that accompanying the act of urination which one often sees during a hyperactive stage. In this series there are only five cases in which the 5 per cent. mercurochrome-220 soluble was not used at first. One patient (Case 33) came in complaining of excruciating pain on movement of the penis. Examination disclosed considerable redness and edema of the whole organ, and a slight watery discharge negative for gonococcus. The history revealed that the injury was

not a result of the urethritis, but that the contrary was true. A positive smear developed in thirty-six hours, however, and no mercurochrome could be used for a period of one week.

A disappearance of purulent discharge was effected by the third day in 75 per cent. of these cases. As long as there was macroscopic pus there were usually gonococci.

In ten, or 21.7 per cent., of the cases, posterior symptoms developed, the severity of which could not be found to differ from the usual incidences of such.

In only one case was there a folliculitis reaching any unusual proportions. Following a folliculitis two years previous, a hardened nodule, 3 mm. in diameter, had persisted, and became the seat of a new enlargement which required external incision. The lesion healed with no appreciable scar or nodule. In no case were there symptoms of cowperitis. Arthritis occurred in Case 33, in which the penis had been traumatized. The patient's right wrist became involved within ten days, but recovered under the usual care, and no further joints were involved. The relation of the trauma to the bacteremia is interesting.

Several men presented clear urines and no discharge after three or four days, but the injections were carried on a few days afterward to take care of any possible source of further trouble. Often the urines were examined, but no treatment was given after five or six days. One patient did not return after the first injection for a year, when he came in with a new infection and reported that "one injection had cured" him. The duration of trouble in the series is given in the accompanying table.

DURATION OF TROUBLE

Cases Number	Per Cent.	Duration
32	69.8	7 days
2	4	10 days
3	6.5	2 weeks
3	6.5	2 weeks
2	4	3 weeks
5	10	6 weeks
1	2	15 weeks

Approximately 70 per cent. of the cases reached an apparent cure in one week, and in ten days 75 per cent. were cured.

Freedom from symptoms, both objective and subjective, constituted a "cure." Fully one half of the patients have been dismissed more than a year. There have been no recurrences.

## COMMENT

As was stated in the beginning, the study made here was in an effort to get greater efficiency from drugs theoretically capable of producing better results. The increased strength was used to get killing concentrations after penetration. Alternating the colloid with the solution was done as it seemed to produce the best results, though I am not aware of any synergistic properties that either chemical has. It is possible that even a weaker solution of mercurochrome-220 soluble, acriflavine, or similar antiseptics would have been adequate substitutes for the 25 per cent. argyrol. There has been no attempt to offer new records for quick cures. So far as the method of treatment is out of the ordinary, mention of it seemed justifiable.

419 Hume-Mansur Building.

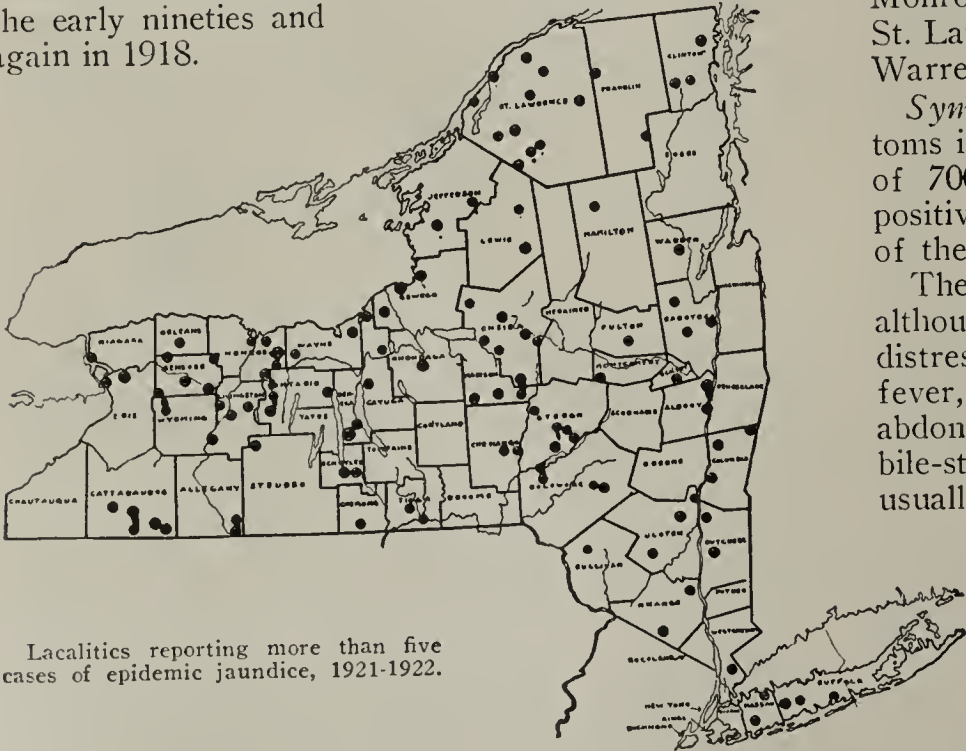


EPIDEMIC JAUNDICE IN NEW YORK  
STATE, 1921-1922

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During the winter of 1921-1922, New York State was visited over a very wide area by so-called infectious or epidemic jaundice. This disease was present at the same time in other parts of the country. Previous to the epidemic, localized outbreaks had been studied by the New York State Department of Health in the village of Philadelphia, Jefferson County, in the winter of 1915-1916; at Berkshire, Tioga County, in March, 1920, and in Chenango County during February, 1921. The disease as it appeared at Cooperstown, N. Y., during the recent state-wide epidemic, has already been described.<sup>1</sup>

It may be noted that during 1896 there occurred at Albany a well-marked outbreak of epidemic jaundice. At Hudson, N. Y., a similar epidemic occurred a few years previously. Reports from practitioners indicate that at certain localities in Delaware County, Allegany County and especially in St. Lawrence County repeated outbreaks of epidemic jaundice have occurred at varying intervals during the last thirty years. Up to 100 cases appear in some of these reports, and nowhere were uncomplicated cases recorded which terminated fatally. Multiple cases in households and in schools were frequently found in these earlier outbreaks. This history is interesting as having a possible relation to the outbreaks of influenza in the early nineties and again in 1918.



The accompanying map shows localities in New York State which reported more than five cases of jaundice during the recent epidemic. Nearly all of these records are for the period between September, 1921, and March, 1922, the interval when the outbreak was state-wide in its distribution. For several of the foci indicated on the map more than a hundred cases were recorded, but the average number of cases for each focus was not more than thirty.

1. Williams, Huntington: Epidemic Jaundice: Report of a Local Outbreak at Cooperstown, N. Y., During a State-Wide Epidemic, New York State J. Med. 22: 150 (April) 1922.

ANALYSIS OF SEVEN HUNDRED CASES

A detailed study of 700 cases of epidemic jaundice was made by the state sanitary supervisors in accordance with plans drawn by Dr. Edward S. Godfrey, Jr., director of the division of communicable diseases of the state health department. These cases represent approximately half the known cases that occurred during the epidemic in New York State (excluding New York City), and in addition there were many cases that were so mild that they were not seen by a

TABLE 1.—OCCURRENCE OF SYMPTOMS

Symptom	Cases Positive		Cases Negative		Not Recorded	
	Num-ber	Per Cent.	Num-ber	Per Cent.	Num-ber	Per Cent.
Jaundice.....	647	92.4	11	1.6	42	6.0
Anorexia.....	574	82.0	68	9.7	58	8.3
Nausea.....	619	88.4	46	6.6	35	5.0
Vomiting.....	503	71.9	169	24.1	28	4.0
Headache.....	488	69.7	139	19.9	73	10.4
Constipation.....	463	66.1	110	15.7	127	18.2
Prostration.....	211	30.1	81	11.6	408	58.3
Clay-colored stools....	558	79.7	46	6.6	96	13.7
Bile-stained urine.....	617	88.2	10	1.4	73	10.4
Abdominal pain.....	417	59.6	211	30.1	72	10.3
Fever.....	524	74.9	105	15.0	71	10.1
Chills.....	334	47.7	293	41.9	73	10.4
Limb pains.....	235	33.6	297	42.4	168	24.0
Diarrhea.....	106	15.2	442	63.1	152	21.7
Conjunctival eongest.	66	9.4	103	14.7	531	75.9
Epistaxis.....	61	8.7	525	75.0	114	16.3
Herpes.....	28	4.0	536	76.6	136	19.4
Hiccup.....	98	14.0	478	68.3	124	17.7
Unusual prevalence of rats on premises.....	167	23.9	262	37.4	271	38.7

physician or recorded in any way. The 700 cases here analyzed were reported from the twenty-five counties of Albany, Broome, Columbia, Delaware, Erie, Franklin, Genesee, Jefferson, Livingston, Madison, Monroe, Niagara, Ontario, Orange, Oswego, Otsego, St. Lawrence, Seneca, Steuben, Sullivan, Tioga, Ulster, Warren, Wayne and Wyoming.

*Symptomatology.*—Each of eighteen common symptoms is recorded in Table 1 for every case in the series of 700 that were studied. Symptoms are reported positive, negative or not recorded, and the percentage of the 700 cases in each group is given.

The disease appeared to be mild in character, although the gastro-intestinal symptoms were often distressing. In typical cases there was a slight initial fever, with several days of anorexia, nausea, vomiting, abdominal pain, constipation, clay-colored stools and bile-stained urine. After this period, which lasted usually from three days to a week, jaundice appeared and the abdominal symptoms decreased markedly in severity. The jaundice persisted for varying periods from several days to several weeks. It was sometimes observed only in the eyes, but in other cases it was widespread over the body and of a deep shade. Convalescence was almost invariably slow, and was marked

by prostration, very frequently of a severe type. In rare cases when seen in the prejaundice stage, there was noticed a faint rash on the arms and upper chest, together with a superficial tenderness and roughening of the skin in these parts. As a rule, however, no record was made of this symptom. The physician frequently considered the disease intestinal grippe, perhaps because the jaundice epidemic came fairly soon after the pandemic of influenza. In this connection, it is of interest to note that there was a moderate leukocytosis present in half of the cases at Cooperstown, which were studied early in the disease, and in no case was there reported a leukopenia.



*Five Atypical Cases.*—Throughout the epidemic there occurred only five known fatal cases, in each of which there were complications. Two of these were in infants born to mothers ill with jaundice at the time of delivery. One infant was born jaundiced, and lived only thirty-six hours. The other was born with clear skin, but

TABLE 2.—SEX DISTRIBUTION

	Number	Per Cent.
Males.....	353	50.4
Females.....	345	49.3
Not recorded.....	2	0.3

on the second day after birth developed a yellow tint over the body. On the third day the baby began to bleed profusely from the bowel. This condition continued at intervals until the death of the child on the fourth day. The third fatal case was that of a girl, aged 5 years, who had very marked jaundice for two weeks, with constipation and clay-colored stools. The

TABLE 3.—AGE DISTRIBUTION

	Number	Per Cent.
From 0 to 4 years.....	46	6.6
5 to 14 years.....	362	51.7
15 to 24 years.....	127	18.2
25 to 34 years.....	50	7.1
35 to 44 years.....	59	8.4
45 to 54 years.....	23	3.3
55 to 64 years.....	20	2.9
65 to 74 years.....	3	0.4
75 to 84 years.....	2	0.3
85 to 94 years.....	1	0.1
Age not recorded.....	7	1.0
Total.....	700	100.0

child had an irregular temperature during this time, with marked prostration, similar to that of influenza. There were signs of encephalitis, and the chemical test for bile was positive in the spinal fluid. The fluid was of clear color, and gave a low cell count. Another fatal case was that of a girl, aged 6 years, whose jaundice was complicated by existing renal disease due to scarlet fever contracted a year previously. In this case the attending physician attributed death to acute nephritis. The remaining fatal case was that of a boy,

than half (51.7 per cent.) of the cases were in the school age group, from 5 to 14 years, and outbreaks often centered in a school; (3) in more than half the cases, the dates of onset were during the months of November and December, 1921, and (4) multiple cases in a household or a school were very common.

*Dates of Onset.*—Of the 700 cases, the dates of onset in 672 cases were between Sept. 1, 1921, and March 2, 1922, and are recorded in Table 4. In addition, the onset in seventeen cases occurred between March 1 and Aug. 31, 1921, and in eleven cases there was no recorded date of onset.

*Multiple Cases in Household or School.*—Of the cases, 421, or 60 per cent., were multiple, that is, more than one case occurred in a household. The maximum number in a home was eight. In 83 instances, there were 2 cases in a household; in 33, 3; in 20, 4; in 7, 5; in 3, 6; in 1 instance, 7; and in 2 instances, 8.

In one instance (at Cooperstown, N. Y.), fourteen children in a one-room school of thirty-six pupils developed the disease, over a period of two and one-half months. In another school, all the pupils but two developed the disease. In a third school, the teacher and also the physician gave the information that nearly every child in the room had had an attack of jaundice, and in a fourth school district in St. Lawrence County, every child but one had jaundice, and in connection with the school outbreak other children in the homes had secondary cases of the same disease. This apparent susceptibility to infectious jaundice among school-children was also noted in an outbreak in St. Lawrence County which occurred about twenty-five years ago. In this connection, attention is again called to the age distribution of the 700 cases here reported.

#### LABORATORY INVESTIGATIONS

Special investigations were made by the division of laboratories and research of the state health department, with the hope of discovering the specific etiologic agent in this disease. Blood, urine, feces and throat cultures from patients with the epidemic disease were examined, and in no case were positive results obtained in isolating *Leptospira icterohaemorrhagiae*<sup>2</sup> or any other organism of significance.

TABLE 4.—DATES OF ONSET

Investigator	Counties	1921				1922			Total
		Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	
Dr. Edward Clark.....	Erie, Niagara, Wyoming, Genesee.....	0	5	18	47	41	6	0	117
Dr. B. R. Wakeman.....	Livingston, Monroe, Ontario.....	0	6	58	32	18	0	0	114
Dr. S. W. Sayer.....	St. Lawrence, Jefferson.....	9	24	41	28	2	0	0	104
Dr. Huntington Williams.....	Albany, Columbia.....	1	4	13	19	25	14	1	77
Dr. W. L. Munson.....	Franklin, Warren.....	1	7	12	30	8	0	0	58
Dr. H. J. Ball.....	Madison.....	0	4	11	32	3	1	0	51
Dr. C. R. Hervey.....	Oswego, Wayne.....	3	2	14	24	1	0	0	44
Dr. F. W. Laidlaw.....	Delaware, Sullivan, Ulster, Orange.....	0	4	13	19	6	0	0	42
Dr. F. W. Sears.....	Seneca.....	1	6	6	3	9	0	0	25
Dr. Huntington Williams.....	Otsego (Cooperstown).....	0	6	6	6	8	0	0	26
Dr. J. A. Conway.....	Steuben, Tioga, Broome.....	4	2	3	3	1	1	0	14
Total.....		19	70	195	243	122	22	1	672
Per Cent. ....		2.8	10.4	29.0	36.2	18.2	3.3	0.1	100

aged 14 years. He developed jaundice, which cleared up after a week's duration. Two weeks after this the jaundice returned and became very marked. There developed typical symptoms of meningitis at this time, and the child died four days after the second appearance of the jaundice.

*Epidemiology.*—It is of interest to note that (1) of the 700 cases studied, the sex distribution is almost exactly equal (50.4 per cent. males); (2) a little more

#### COMMENT

The causative factor of the epidemic here described has not been determined. There is no evidence that rat-borne or other contamination of human food supplies was of etiologic importance. The relationship is uncertain between this state-wide outbreak and instances

2. Noguchi, Hideyo: Morphological Characteristics and Nomenclature of *Leptospira* (*Spirochaeta*) *Icterohaemorrhagiae* (Inada and Ido), J. Exper. Med. 27: 575 (May) 1918.



of infectious spirochetal jaundice that have been reported in Japan<sup>3</sup> and in Europe.<sup>4</sup> The identity of the American type and the foreign type of infectious jaundice has never been established. On epidemiologic grounds there is a marked difference, in that the American type seems to be readily communicable by direct contact, and it occurs in quite well-defined outbreaks, especially among schoolchildren. These features are not characteristic of spirochetosis. It is not certain whether epidemic jaundice, which was known to Hippocrates and his disciples, and which is often spoken of as Weil's disease, is a single disease entity, or whether it may result from a number of different etiologic factors. Jaundice was prevalent among the federal troops during the Civil War, and has often been associated with troops in other wars.

Of 700 cases here analyzed, more than half were in children of the school age (from 5 to 14 years). Multiple cases in a household or a school were extremely common. The peak of the epidemic was in November and December, 1921. Marked prostration and slow recovery were characteristics of many cases of the disease. For these reasons, and because of personal observation of the Cooperstown outbreak, I am of the opinion that the epidemic jaundice that occurred throughout New York State during the winter of 1921-1922 was spread by droplet or contact infection from person to person, and that the etiologic agent of this epidemic may have been some unrecognized organism or virus that is carried in the nasopharyngeal secretions<sup>5</sup> of persons ill of the disease.

## THE HEART IN PERNICIOUS ANEMIA\*

WILLIAM D. REID, M.D.

BOSTON

The death of a patient ill with pernicious anemia, a few hours after a transfusion of blood, with symptoms reported to be those of acute heart failure, brought home to me how little I knew of the heart in this disease. The patient referred to had only 660,000 red corpuscles per cubic millimeter of blood. A series of three blood transfusions was given, resulting in some improvement with the first, a moderate upset with the second, and a severe reaction after the third. This reaction was described by the physician in attendance as being characterized by dyspnea and the disappearance of the pulse at the wrist; the heart sounds remained audible. It began before the transfusion was complete, and persisted until the death of the patient about five hours later.

What was the cause of the attack and subsequent death? Could there have been an embolus to the coronary artery, or could a large clot of blood have impeded the passage of blood through one of the cardiac valves? I was unable to answer these questions with any degree of assurance. In the hope of acquiring some information as regards the cardiac aspects of pernicious anemia, I have examined the postmortem records; and, through the courtesy of Dr. R. C. Larra-

bee of the blood service, electrocardiograms have been obtained of a number of patients affected by the disease.

No attempt has been made to record the clinical findings, such as murmurs. I believe that the systolic murmurs are usually of greatest audibility over the base of the heart and are especially well transmitted to the carotids. My experience also agrees with that of other observers who find that the murmurs appear first at the base and later extend to the apex, while on the recovery of the patient the murmurs disappear from the heart in the reverse order, i. e., from the base last.

### PATHOLOGY

Eleven cases were found in the postmortem records of the Boston City Hospital during the period 1916 to 1921, inclusive. The data may be thus analyzed:

There were six men and five women. One patient was 28 years of age, but the remaining ten were in the age period of 50 to 70 years. Enlargement of the heart of a degree that should be recognized clinically was not found; the actual weights of the hearts were between 240 and 300 gm. in six, and between 300 and 400 gm. in five.<sup>1</sup>

The myocardium was abnormal to macroscopic examination in all but three cases. These did not differ from the others in the duration of the attack, or in the severity of the blood picture. The heart muscle was described as soft, flabby, pale brown, pale red, yellowish and muddy yellow. Microscopic examination, however, revealed the heart muscle to be normal in all but two of the eleven cases. Of these two, one showed a small patch of fibrosis, and the other, large areas of acute necrosis of the fibers. The importance of the findings in the latter is lessened by the possibility of postmortem changes, in that the section was made twenty-two hours after death.

In four instances, the endocardium, especially on the papillary muscles, was mottled and streaked with yellow, the so-called "tigroid" appearance. The epicardial fat was recorded as moderately increased in four cases, and greatly so in two.

The hearts in this group of eleven necropsies were otherwise normal, save for moderate sclerosis of the coronary arteries in four, of the mitral valves in five, and of the aortic cusps in two instances, respectively. These findings are probably best explained as due to arteriosclerosis. They did not differ from those noted in the hearts of other patients of the same age period but not affected by pernicious anemia.

There were no instances of thrombus formation.

### ELECTROCARDIOGRAPHIC FINDINGS

Electrocardiograms were taken in the cases of twenty patients, all of whom were ill with a severe attack of pernicious anemia. In but one case was an arrhythmia present. This case was a clear-cut instance of rheumatic heart disease, auricular fibrillation and mitral stenosis, in addition to pernicious anemia. Examination of the tracings revealed nothing that might be considered of diagnostic value as peculiar to pernicious anemia. Some of the details will be cited.

The heart rate was less than 100 a minute in fifteen cases, while the maximum rate was 122.

The P wave was normal.

The P-R interval varied from 0.12 to 0.15 second in fourteen; in five, it was from 0.16 to 0.18 second, and in one, it measured 0.20 second.

3. Inada, Ido, Hoki, Kaneko and Ito: The Etiology, Mode of Infection, and Specific Therapy of Weil's Disease (Spirochaetosis Ictero-haemorrhagica), *J. Exper. Med.* **23**: 377 (March) 1916.

4. Dawson, B.; Hume, W. E., and Bedson, S. P.: Infective Jaundice, *Brit. M. J.* **2**: 345 (Sept. 15) 1917. Stokes, A.; Ryle, J. A., and Tytler, W. H.: Weil's Disease (Spirochaetosis Ictero-Haemorrhagica) in the British Army in Flanders, *Lancet* **1**: 142 (Jan. 27) 1917.

5. Herrman, Charles: Acute Infectious Jaundice (Spirochetosis Icterohemorrhagica), *New York M. J.* **107**: 1068 (June 8) 1918.

\* From the Heart Laboratory of the Boston City Hospital.

1. According to Gray's Anatomy (Spitzka, E. A.: New American Edition, Philadelphia, Lea & Febiger, 1913, p. 562), the normal heart varies in weight from 240 to 360 gm.



The maximum voltage of the R wave was less than  $10^{10-4}$  volt in ten of the cases; in but four of the remaining ten did it measure more than  $13^{10-4}$  volt.

The T wave exceeded  $4.5^{10-4}$  volt in only two cases. It was upright in Lead 2 in all save the electrocardiogram of the patient with auricular fibrillation; its inversion here was doubtless an effect of digitalis administration.

The Q-R-S complex was normal in appearance and in duration, varying from 0.03 to 0.08 second.

The S-T interval varied from 0.20 to 0.32 second; in half the cases, it was 0.28 second or more. It will be noted that these figures vary from the normal of 0.24 to 0.28 second stated by Buchanan;<sup>2</sup> but on calculating the Q-R-S-T interval by the method of Fenn,<sup>3</sup> it was found that in no case did the actual measurement of this period differ from its calculated length by more than 0.03 second. The probable error when using Fenn's method of calculating this interval is not more than 0.05 second.

The string shadow returned to the iso-electric position after the Q-R-S complex in all but three of the nineteen cases showing normal rhythm; in these three, the failure of the string to return to the base line was but slight, and was present only in Leads 1 and 2. Such a finding was noted in the electrocardiogram of the patient affected by fibrillation of the auricles, but the case must be excluded from this consideration owing to the presence of digitalization.

A rather surprising fact is that in fifteen of the twenty electrocardiograms the excursion of all waves in Lead 3 was small; and in two of the remaining five, the waves were but moderate in height. However, it does not seem safe to consider this observation of diagnostic value, as it is probably explainable by the position of the heart.

The index<sup>4</sup> of ventricular preponderance was within normal limits in all. It exceeded +12 in only three cases, and showed a minus result in only two. In the fifteen remaining cases, the index was positive and less than +12.

#### COMMENT

The most constant and conspicuous change disclosed in the hearts of which the necropsy findings have been analyzed was a varying degree of fatty degeneration of the myocardium. A standard work on pathology<sup>5</sup> states that this change in the heart muscle may be

found associated with a variety of conditions, such as hypertrophy of the heart, myocarditis, pericarditis, coronary disease, anemia, leukemia, poisoning with phosphorus and arsenic, diphtheria, scarlet fever and typhoid fever. The same authority is quoted as asserting that small, or even considerable areas of fatty degeneration appear, as a rule, to be of little or no clinical significance; they are at least not inconsistent with perfect health.

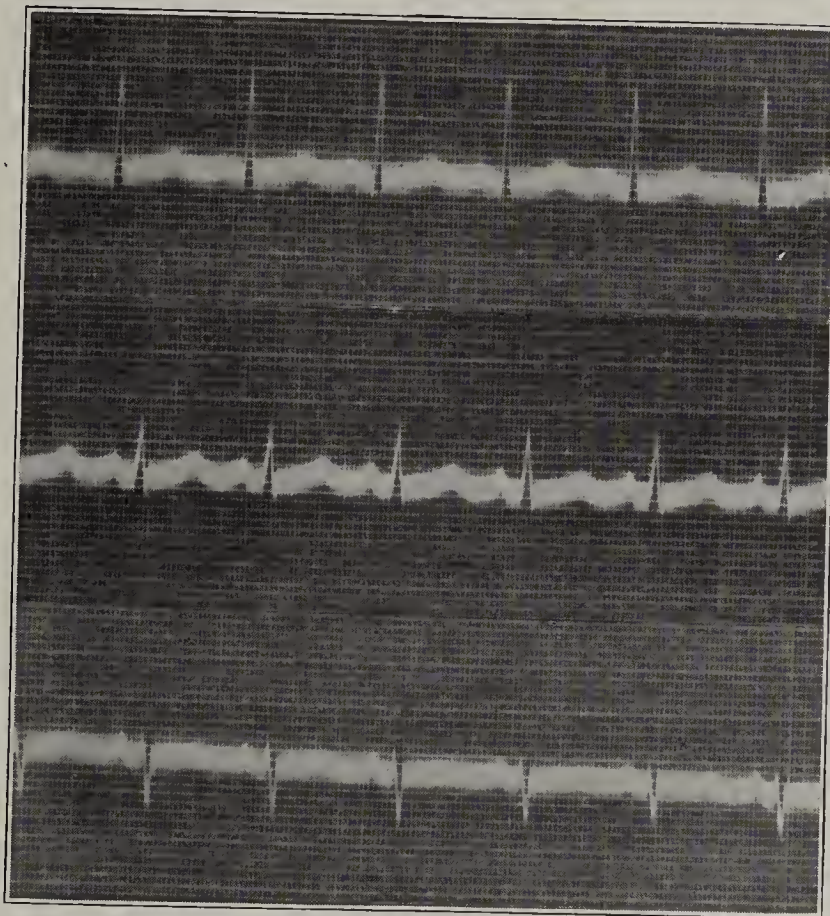
It should be emphasized that the fat is not due to a degeneration or breaking down of the muscle fibers, but is brought by the blood stream and deposited in the heart. The term "fatty degeneration" is perhaps a misnomer. The histologic picture of the myocardium was normal in all but two of the cases reported above, and it is not clear that the pernicious anemia was responsible for the changes noted in these two hearts.

I am not aware of any statements in the literature as to the functional condition of the heart in pernicious anemia. Wiggers<sup>6</sup> writes that, after severe hemorrhage and in shock, he has never observed irregularities, nor were the functions of conductivity and contractility impaired in experimental animals. Pernicious anemia, in that in it the anemia is of long duration, is not entirely analogous to the conditions of which Wiggers writes; but so far as the electrocardiograms on the twenty cases I have studied are concerned, nothing abnormal was found.

In an interesting study of pernicious anemia, Fahr and Ronzone<sup>7</sup> found that, in a severe case of this disease, the minute volume of the blood was increased about 250 per cent., and the systolic output of the heart was increased in the

same degree. This was brought about largely by an increased blood velocity due to lowered viscosity of the blood and an increased effective cross-section of the vascular tubing. The same observers conclude that the coronary circulation is at the upper limit of the possible, being about as large as that found in severe work.

That the increase in the output of the heart is not accomplished by a lengthening of the duration of ventricular systole would appear from the electrocardiographic studies reported in this paper. It was found that the measurement of the Q-R-S-T interval, which is a very fair guide as to the duration of ventricular contraction, when compared to its calculated length, the formula of Fenn<sup>3</sup> being used, in no case showed prolongation beyond the limits of error of the method. This tends, therefore, to support the findings of Fahr and Ronzone.<sup>7</sup>



Severe pernicious anemia. The coarser abscissas mark off periods of one-tenth second instead of the more usual one-fifth second.

2. Buchanan, J. A.: A Study of the S-T Interval in One Thousand and Twenty-Eight Electrocardiograms, *Arch. Int. Med.* **28**: 828 (Oct.) 1921

3. Fenn, G. K.: Studies in the Variation of the Length of the Q-R-S-T Interval, *Arch. Int. Med.* **29**: 441 (April) 1922.

4. White, P. D., and Bock, A. V.: *Am. J. M. Sc.* **156**: 17 (July) 1918.

5. Delafield and Prudden: A Text-Book of Pathology, Ed. 11, revised by F. C. Wood, New York, William Wood & Co., 1919, p. 611.

6. Wiggers, C. J.: *Circulation in Health and Disease*, Philadelphia, Lea and Febiger, 1915.

7. Fahr, George, and Ronzone, Ethel: Circulatory Compensation for Deficient Oxygen Carrying Capacity of the Blood in Severe Anemias, *Arch. Int. Med.* **29**: 331 (March) 1922.



In an editorial<sup>8</sup> on this work of Fahr and Ronzone, it is pointed out that if such patients (those with severe anemia) are not at rest, and additional effort is demanded of the heart already close to the margin of oxygen sufficiency for its musculature, the latter may readily suffer from anoxemia. It is generally believed that the fatty degeneration of the myocardium is the result of the lack of oxygen in the blood, but, as mentioned above, its clinical significance is not clear. That the tigroid or fatty change, visible especially on the papillary muscles, is to be considered evidence of degeneration of the myocardium would seem to be unwarranted.

It has been pointed out that the heart possesses a remarkable power to protect itself from anoxemia. Starling<sup>9</sup> states that it can extract almost all the oxygen from blood low in oxygen (i. e., up to 0.5 per cent. of the oxygen in the blood). However, since in severe pernicious anemia the heart and blood vessels have compensated by making maximal the rate at which the blood is circulated, it is obvious that any exertion on the part of the patient will readily produce a condition in which the needs of the heart, nervous system and other organs for oxygen cannot be met. In agreement with this in cases of severe pernicious anemia, one observes, following physical exertion, symptoms which force the patient to desist from the activity.

When the patient is given a transfusion of blood, especially if it is large in amount, the viscosity of that in the patient's blood vessels is rapidly raised, and the conditions to which the heart has adjusted itself are disturbed. It might reasonably be supposed that in very severe cases, in which the "fatty degeneration" of the myocardium (if it does impair the heart) is extensive, the heart might have difficulty in propelling onward the more viscid fluid.

Such considerations lend the chief support to the belief that embarrassment of the heart may account for untoward results after a blood transfusion. That the heart is upset by a transfusion is probably more or less theoretical, for evidence of cardiac embarrassment is not obtained by the blood service of the Boston City Hospital, where a large number of blood transfusions have been given to patients affected with pernicious anemia, often of a severe type. Various reactions occur, but in them the heart has played little if any part. The amount of blood infused is kept down by the limitations of the donor; more than 500 c.c. is seldom given.

The upset in the patient referred to in the beginning of this paper was probably due to one of the reactions associated with blood transfusions and not primarily cardiac in origin, the discussion of which is beyond the scope of this paper.

#### SUMMARY AND CONCLUSIONS

The postmortem findings in eleven cases of pernicious anemia have been analyzed. The most constant finding was "fatty degeneration" of the myocardium. Thrombi were not found.

Electrocardiograms were taken from twenty patients. No abnormalities of diagnostic significance were found.

The Q-R-S-T interval was of normal duration. This demonstrates that the increased output of the heart, described by Fahr and Ronzone,<sup>7</sup> is not accomplished by a lengthening of the ventricular systole.

There is ample reason for keeping at complete rest a patient who is ill with a severe attack of pernicious anemia.

The fat noted in "fatty degeneration" is brought to the heart by the blood, in accordance with a normal physiologic process; and evidence is wanting that the efficiency of the myocardium is impaired thereby.

Untoward reactions that sometimes follow transfusions of blood in cases of pernicious anemia are not primarily cardiac in origin.

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### CHRONIC PULMONARY MILIARY TUBERCULOSIS \*

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The pulmonary form of acute miliary tuberculosis is admittedly the most rapidly fatal of all types of phthisical lesions. Its diagnosis does not as a rule present many difficulties because the marked prostration, cyanosis and dyspnea, which are apparently out of all proportion to the scant signs in the chest, constitute a veritable diagnostic triad. The roentgen-ray findings in such cases may at first be inconclusive; but, before long, the appearance of the characteristic diffuse dissemination of the miliary tubercles dispels any doubt as to the true nature of the process.

A form of chronic pulmonary tuberculosis is not infrequently observed in which the miliary tubercles appearing in large numbers is an important element in the lesion. These may be confined to the upper lobes, but are most commonly found in the lower lobes. It is only rarely that one finds a chronic case in which the miliary tubercles are diffusely and uniformly scattered throughout both lungs. These cases of phthisis pulmonalis, when they are presented for treatment, show clinical features and pursue a course which are at great variance with the ordinary acute type of this affection. They are more amenable to treatment, and they are subject to few exacerbations of activity. Furthermore, serial roentgenographic examinations of such cases may disclose not only a clearing of the collateral inflammation around the tubercles but also definite evidence of fibrosis and partial calcification of the tubercles themselves; and what is perhaps still more striking, there may occur apparent resolution in areas previously extensively involved.

The paucity of literature and the failure of standard textbooks on the subject to treat of such cases prompts the report of those which came under observation and which may possibly be designated as cases of chronic pulmonary miliary tuberculosis.

#### REPORT OF CASES

CASE 1.—A Russian clerk, aged 20, was admitted to the Bedford Sanatorium in October, 1921. His mother and two sisters died of a rapidly progressing tuberculous lung trouble. Though subject to frequent and protracted colds for eight years, he, nevertheless, led a normal life and was not hindered from partaking in the usual sports. July 11, 1921, he was suddenly seized with a severe attack of hemoptysis followed by fever ranging from 101 to 103 F., night sweats,

8. The Circulatory Compensation in Severe Anemias, editorial, J. A. M. A. 78: 1460 (May 13) 1922.

9. Starling, E. H.: Mechanisme de compensation de cœur, Presse méd. 60: 641 (July 29) 1922.

\* From the Bedford Sanatorium for Incipient Tuberculosis, Dr. Maurice Fishberg, chief of service.



productive cough and pain in the chest. He remained in bed for five weeks, and although the constitutional symptoms abated to a large extent, he complained on admission of a dry, hacking cough, loss of weight and strength, and marked dyspnea on slight exertion.

Physical exploration of the chest on admission disclosed an extensive lesion in the upper lobe of the right lung with suggestion of cavitation in the apical field, as well as thickened pleura at the right base. Roentgenologic examination at the same time disclosed definite evidence of miliary infiltration throughout both lungs with probable cavitation at the right apex (Fig. 1). Examination of the sputum was repeatedly positive; the Wassermann test and examination of the urine were repeatedly negative. The blood pressure was 105 systolic and 65 diastolic.

On account of the dyspnea and distressing cough the patient was kept in bed; and, although his temperature rarely rose above normal, the prognosis was considered unfavorable. However, after a protracted stay in bed there occurred a most remarkable improvement in his general condition. The cough became less distressing, dyspnea practically disappeared, he gained in weight and strength, expectoration gradually diminished, and tubercle bacilli could no longer be found in the sputum. Notwithstanding this marked improvement, physical findings in the chest remained practically unchanged so far as the right lung was concerned, while numerous moist râles were now discovered in the midportion of the left lung, radiating from the hilum region to the periphery. At the same time, careful examination of the serial roentgenograms in this case disclosed phenomena that are both unusual and intensely interesting.

Figure 1, reproduced from a roentgenogram taken on admission, shows extensive dissemination of miliary tubercles throughout both lung fields. The tubercles appear fairly uniform in size, and their hazy outline is suggestive of collateral inflammation. The tendency to conglomeration in the right basal field is also to be noted. In a plate taken two and a half months later there is definite evidence of clearing

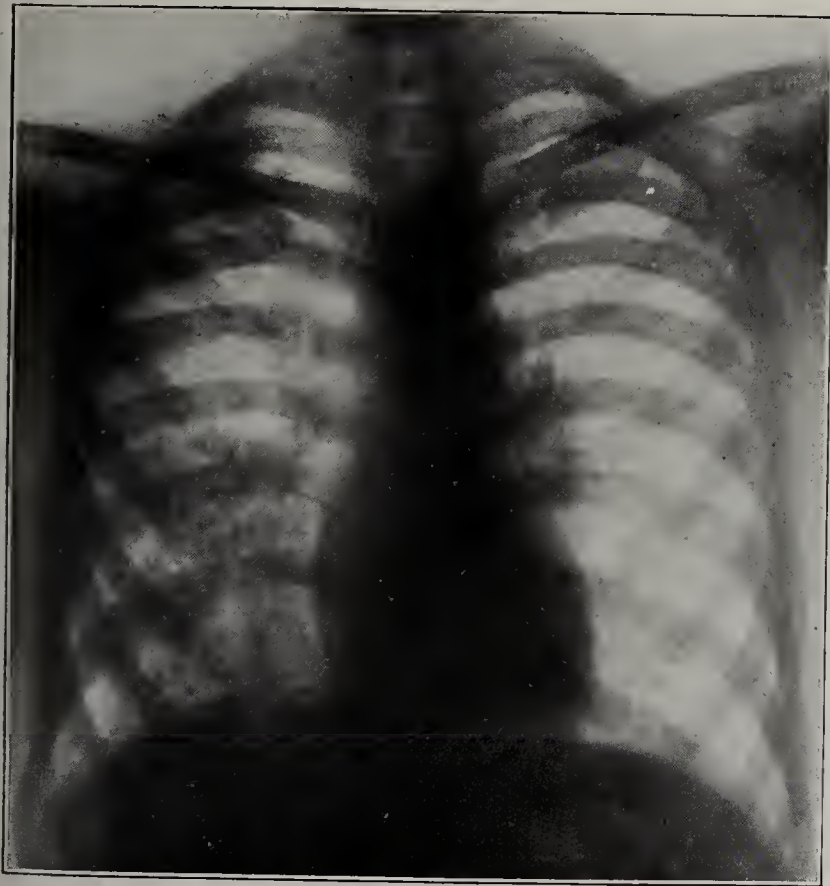


Fig. 1 (Case 1).—Extensive dissemination of miliary tubercles throughout both lung fields; they are of uniform size and distribution, and tend to conglomerate in the right basal field.

of the collateral inflammation so that the tubercles appear more discrete. Furthermore, the increased density of the tubercles as well as their tendency to arrange themselves in linear formation, as it were, are strongly suggestive of fibrosis. This evidence of fibrosis is particularly striking in the right basal field where, instead of the conglomerate

tubercles seen in the first plate, there now appear dense, ropy radiations from the hilum region.

Still further evidence of clearing and fibrosis as well as apparent disappearance of some of the shadows noted in the earlier plates was shown in another plate taken eight months after admission. But the changes noted in Figure 2, taken



Fig. 2 (Case 1).—Appearance one year later: marked clearing and fibrosis; disappearance of most of the miliary tubercles seen earlier.

one year after admission, are the most remarkable. Here the extensive dissemination of the miliary tubercles throughout both lung fields, which is so apparent in Figure 1, can no longer be seen. Instead, there is marked hilum fibrosis with increased lung markings throughout, and only questionable evidence of infiltration in the upper lobes can be noted.

The striking features of this series of roentgenograms are the marked clearing and fibrosis, and particularly the evidence of resolution, which they apparently show to have occurred in areas previously the seat of extensive miliary tuberculization.

CASE 2.—A woman, aged 30, English, upholsterer, whose family and previous history were irrelevant, was admitted in November, 1922, complaining of cough, dyspnea and malaise. In the winter of 1916 she began to suffer from "nervous dyspepsia." However, she got on quite well until the early part of November, 1918, when she had a sudden attack of moderately severe hemoptysis. This was followed by marked constitutional symptoms, including fever of from 101 to 102, severe dyspnea and general prostration, confining her to bed for more than four weeks. Shortly afterward she was admitted to the Densewood Sanatorium, England, where, after a stay of three months, her general condition improved so that she was discharged with the disease arrested.

On her arrival in this country, in July, 1921, cough and expectoration recurred and became progressively worse. With this she began to lose weight and strength rapidly and experienced persistent afternoon rise of temperature, as well as night sweats, pains in the chest and dyspnea on slight exertion.

Physical examination of the chest on admission disclosed bilateral upper lobe infiltration with cavitation in the right apical field, while roentgenologic examination (Fig. 3) disclosed miliary infiltration throughout both lungs, more extensive in the upper lobes and especially marked on the right side. The sputum was consistently positive; the urine and Wassermann tests were negative; the blood pressure was 115 systolic and 70 diastolic.

The patient exhibited mild constitutional symptoms of toxemia during the first two weeks of her stay at the sana-



torium, but has been showing improvement since. Her cough has become less distressing, expectoration has diminished considerably, and dyspnea has become less marked. She has gained in weight and strength, and is able to be up and about, assisting in household duties in addition to assigned exercise.

## COMMENT

The most interesting features in the clinical history of these cases is their similarity to acute miliary tuberculosis. Here we have two patients whose initial symptom was hemoptysis followed by marked constitutional symptoms of toxemia and, more especially, dyspnea, which was apparently out of all proportion to the discoverable physical signs in the chest—a clinical picture almost typical of acute miliary tuberculosis. Furthermore, roentgenographic examinations afforded undeniable evidence of the existence of miliary tuberculosis by disclosing the typical lesion. The subsequent history of these cases, however, was not in concert with the suspected early diagnosis. There was a decided improvement in the condition. The constitutional symptoms abated, the local symptoms diminished in severity, and dyspnea disappeared. Simultaneous with this, the roentgenograms disclosed at first evidence of clearing of the collateral inflammation, then evidence of fibrosis and possibly calcification of some of the tubercles, and finally also resolution in other areas once the seat of extensive miliary tuberculization.

Extensive miliary tuberculization of the acute type has been the subject of extensive investigation for many years, and a voluminous literature has accumulated as a result of the numerous recorded observations. Until recently, however, very little attention has been given to the study of those cases of chronic pulmonary tuberculosis in which the miliary tubercles are diffusely scattered throughout both lungs—a type that may possibly be designated as chronic pulmonary miliary tuberculosis. Northrup<sup>1</sup> discusses the case of a boy,



Fig. 3 (Case 2).—Extensive dissemination of miliary tubercles of uniform size and distribution throughout both lungs.

aged 6, suffering from pulmonary miliary tuberculosis diagnosed by roentgenographic studies, who left the hospital much improved and whose disease subsequently ran a chronic course. Von Muralt<sup>2</sup> reported two similar

cases, in which, although the patients subsequently succumbed as a result of extensive miliary tuberculization of the central nerve system and other organs, had long been known, on the strength of roentgen-ray findings, to suffer from pulmonary miliary tuberculosis. Recently Bierman<sup>3</sup> has called attention to the mild course of the disease in some who on roentgenologic study showed

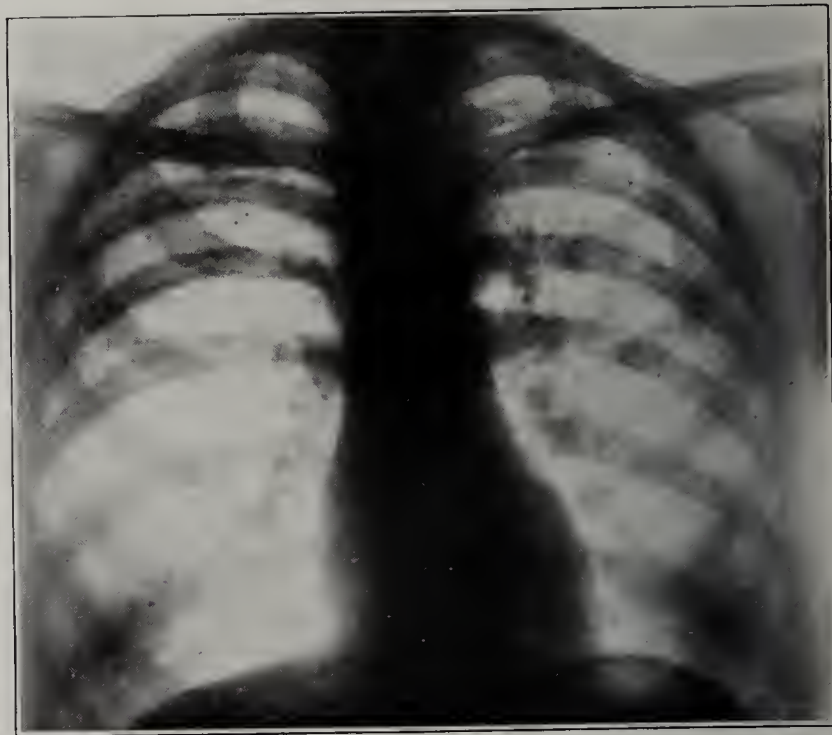


Fig. 4.—Extensive miliary tuberculization of left lung; tubercles appear discrete.

evidence of extensive miliary tuberculization of the lungs; and Wallgren,<sup>4</sup> recounting his experience at the Pirquet clinic, mentions the fact that he had there seen two children who were doing well more than six months after a diagnosis of miliary tuberculosis was made in their cases on clinical and roentgen-ray evidence.

A study of the patients admitted to our care disclosed the fact that pulmonary miliary tuberculosis of the chronic type occurs often enough to be of more than academic interest. Miliary tuberculization affecting an entire lung, or confined to the lower lobes of organs already affected with fibrocasseous tuberculosis in the upper lobes, is not necessarily of grave prognostic import. Figures 4 and 5, respectively representing unilateral and moderately extensive bilateral chronic miliary tuberculization, are of patients who made remarkable progress toward recovery during their stay at the sanatorium, the former having already been discharged with disease arrested; while the two cases with very extensive pulmonary miliary tuberculosis which form the basis of this communication have reached a stage wherein their lesions can be safely considered to be arrested in the first instance and quiescent in the other. It is altogether fair, therefore, to stress the fact that the prognosis in this form of miliary tuberculosis, other things being equal, should be promulgated with much less of the usual pessimism.

The diagnosis of this type of lesion is impossible of attainment without the assistance of repeated and painstaking roentgenologic observations. In our own cases, as well as those reported by Northrop and von Muralt, not a single correct diagnosis was made without such help, and we have reason to believe that the

1. Northrup, M. W. P.: Disseminated Miliary Tuberculosis of Lungs and Skin, *Am. J. Dis. Child.* 7: 24 (Jan.) 1914.

2. Von Muralt, L.: *Cor.-Bl. f. Schweiz. Aerzte* 46: 481 (April 15) 1916.

3. Bierman, M.: *Minnesota Med.* 5: 661 (Nov.) 1922.

4. Wallgren, A.: *Uppsala Läkaref. Förh.* 27: 1 (March) 1922, quoted in *Tubercle* 4: 183 (Jan.) 1923.



paucity of the literature on this subject is undoubtedly due to the fact that many clinicians do not yet realize how many pathologic changes in the lungs are missed when roentgenographic studies are not a part of the routine in the examination of pulmonary patients. The physical signs produced by this type of lesion are commonly interpreted as being due to secondary bronchitis and bronchiectasis, or to pleuritic changes so frequently encountered in those with advanced tuberculosis.

It is only on careful and often repeated roentgenographic examination that the true nature of the existing pathologic processes is disclosed, a fact that cannot be too emphatically stressed. Furthermore, serial roentgenograms are indispensable in following the progress of the case. The physical signs offer no assistance in this direction. It is the serial roentgenograms that demonstrate the multifarious changes that may occur as clearing, fibrosis, calcification, and even partial resolution, take place.

The mutations of the roentgenographic shadows observed in these cases are not unlike, but are perhaps more remarkable, than those seen in ordinary parenchymatous tuberculous involvements. At first there is evidence of clearing of the collateral inflammation, with disappearance of the fuzzy character of the tubercles. The lung takes on a more transparent appearance and the tubercles stand out more clearly, appearing less confluent, although not much denser than before. At the same time, there may also be definite evidence of fibrosis at the hilum and an increase in the linear markings radiating from it in all directions toward the periphery, along which discrete tubercles seem to arrange themselves, giving the beaded appearance so often noted. When improvement goes on unhindered,



Fig. 5.—Moderately extensive bilateral dissemination of the miliary tubercles, which appear discrete.

the numerous tubercles become denser, more clear-cut and discrete, suggesting further fibrosis; and eventually even calcification may occur. Figure 6 shows the roentgenographic appearance of the lungs of a man admitted

to our care with a history pointing to extensive pulmonary tuberculosis in adolescence. Here the calcification of a widespread lesion has taken place to an extent only rarely observed, with the result that the



Fig. 6.—Calcification of a widely disseminated bilateral miliary tuberculosis.

patient has practically been cured of his tuberculosis, judging from the present signs and symptoms.

That in extremely rare cases definite evidence of resolution is seen in areas previously extensively involved with miliary tubercles has already been brought out in the earlier part of this paper, and was illustrated by Figures 1 and 2. The work of Gardner<sup>5</sup> and others is of interest in this connection. Gardner shows that resolution of a tuberculous focus can take place in animals infected with an attenuated organism.

#### DIFFERENTIAL DIAGNOSIS

Extensive chronic pulmonary miliary tuberculosis cannot always be easily differentiated from pneumoconiosis. In neither condition may severe constitutional symptoms of toxemia enter into the clinical picture when the patient presents himself for study. Hemoptysis may be complained of in either case, and dyspnea may be the cardinal symptom in sufferers of one malady or the other. Moreover, the roentgenographic appearance of the lungs in both instances is essentially similar. Even the presence of a fibroid process in the upper lobes of the lungs does not necessarily settle the diagnosis, for, as it is well known, the pathologic changes engendered by long standing pneumoconiosis may very strikingly resemble the changes seen in advanced fibroid phthisis. It is only the careful inquiry into the previous history of the patient, particularly into the occupational hazards to which he may have been subjected, together with the repeated examinations of the sputum, that make possible a differential diagnosis. On the one hand, we may get a history of prolonged exposure to occupations that

5. Gardner, L.: *Am. Rev. Tuberc.* 6:163 (May) 1922.



are known to produce pneumoconiosis; on the other hand, tubercle bacilli may be found in the sputum and thus help establish the true nature of the pathologic process. However, it must be remembered that pulmonary tuberculosis may and often does develop in subjects suffering from pneumoconiosis.

From acute pulmonary miliary tuberculosis the chronic form can be differentiated only by observing the clinical course of the case, the previous history in either affection being as a rule irrelevant. In the former, the constitutional symptoms are distressing from the very outset, and the disease runs rapidly to a fatal termination. The physical findings to the very end may offer no clue to the nature of the process. On the other hand, in the chronic form in which the clinical picture may at first be undistinguishable from the acute type of the disease, the subsequent tendency to improvement and chronicity in the presence of a lesion that on roentgenologic examination is found to be miliary in character is sufficient to warrant the diagnosis of the chronic form of this affection.

There remains another condition that may be confounded with chronic pulmonary tuberculosis, namely, pulmonary miliary malignancy. This pulmonary affection, although of rare occurrence, has frequently puzzled both the internist and the roentgenologist in their efforts to establish a differential diagnosis between these two conditions. The symptomatology of the two may be almost identical, and it is only a careful search for the primary neoplasm or the finding of tubercle bacilli in the sputum that finally clinches the diagnosis. It is different in the case of the usual metastatic pulmonary neoplasm, the roentgenographic appearance of which is quite characteristic. In such cases the shadows are of various sizes and densities, and there are no evidences of collateral inflammations to designate specific tissue reaction. On the other hand, in miliary tuberculosis the tubercles are much smaller, and they are usually more evenly distributed and are more uniform in size and density. There are also to be seen some evidences of collateral inflammatory changes indicative of tissue reaction to the tubercle.

#### CONCLUSIONS

1. In the form of pulmonary tuberculosis described in the foregoing, extensive miliary tuberculization is an important element in the lesion, and the chronic form of this affection may possibly be designated as chronic pulmonary miliary tuberculosis.

2. There is a similarity between the early clinical picture of the acute and that of the chronic forms of pulmonary miliary tuberculosis.

3. The chronic type of this affection is relatively mild and of fair prognosis.

4. A correct diagnosis in and a study of the progress of cases of the chronic form of pulmonary miliary tuberculosis cannot be made without repeated roentgenographic observations, the physical findings being of little value in either respect.

5. A differential diagnosis must be made between this type of lesion and those caused by acute miliary tuberculosis, pneumoconiosis and miliary pulmonary malignancy.

## AN OPERATION FOR HALLUX VALGUS

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Notwithstanding the variety of operations proposed and used for the common deformity of hallux valgus, the appearance of the feet after operation has not been satisfactory in a considerable number of cases either



Fig. 1.—Hallux valgus before operation (left) and six months after operation (right), showing recurrence of deflection of great toe.



Fig. 2.—Change in the plane of the articular surface of the head of the first metatarsal; after a period of six months had elapsed, there was recurrence of a moderate degree of the original deformity.



Fig. 3.—Effect of tendon pull: When the tendon of the extensor hallucis pulls at the point of its normal insertion (A), it tends to increase any lateral deflection that may be present. If the end of the tendon is transplanted to the medial aspect of the base of the first phalanx (C), the toe is pulled inward. D indicates the center of joint motion.

to the patient or to the surgeon. It is true that relief of pain is the chief end sought, and this may be gained by any procedure that removes both the exostosis on the exposed border of the head of the first metatarsal



and the bursa overlying it. However, if in addition to this a normally straight toe can be produced without jeopardizing function, the final result would be more gratifying, and, as a matter of fact, it is not difficult to attain.

The fundamental causes of the postoperative recurrence of the deformity are the distorting line of pull of the tendon of the extensor hallucis muscle, and an alteration in the plane of the articular surfaces of the bones which form the great toe joint. Tapered shoes and stockings are, of course, contributing causes; but, in spite of these, the toe will resume an approximately normal alinement when pressure is relieved, if mechanical conditions permit.

Correction of either the abnormal line of tendon pull or of the plane of the articular surface alone is not sufficient when there is marked deformity. Figure 1 illustrates a case of hallux valgus before and after an incomplete operation. In this instance the removal of the exostosis and the bursa was followed, as usual, by the relief of pain; but the deformity appeared again sometime later. Figure 2 illustrates a case in which the plane of the articular surface was changed by excision of a considerable portion of the head of the first metatarsal, and yet the deflection of the toe again became noticeable.

These are instances of a common and annoying experience which rearrangement of the point of attachment of the tendon of the extensor hallucis and proper consideration of the plane of the joint will prevent.

An important factor in the development of a faulty line of pull of the tendon is the loose attachment of its sheath at the base of the toe, which permits its

enclosed structure to creep to the outer side of the center of motion of the joint, once the digit has been crowded by shoe or stocking from its normal alinement. This gives the tendon a bow-string effect shown diagrammatically by the line *A-B* in Figure 3.

To overcome this it has been my custom to sever the tendon of the extensor hallucis a short distance above its insertion, and to dissect the tendon and its sheath free to a point somewhat above the head of the first metatarsal. Both structures are then carried toward the median line, and the slightly macerated end of the tendon is implanted in a shallow channel on the medial side of the base of the first phalanx, covered with periosteum and other fibrous tissue and firmly sutured in this position. Thus the line of pull is established inside the center of motion of the joint (*D*) as shown by the line *B-C* in Figure 3.

In very mild cases this change of tendon insertion may be all that is required to prevent a recurrence of

the outward deviation of the toe. In long-standing cases with decided deformity, however, there is frequently an alteration in the plane of the joint surface which gives it an outward tilt.

This may be sufficient to defeat the purpose of tendon transplantation, and therefore it seems advisable to compensate for the abnormal plane of the head of the metatarsal by shortening the medial border of the first phalanx.



Fig. 5.—Line of incision through which joint is approached.

To accomplish this, a wedge is excised from the base of the bone, and its articular surface is concaved, as shown by line *B* in Figure 4.

In my experience this has proved more satisfactory than reshaping the head of the metatarsal, both from an operative and from a functional point of view.



Fig. 4.—Line *A*, alteration in plane of articular surface of head of metatarsal; line *B*, bone incision at base of first phalanx to compensate for condition present in head of metatarsal.

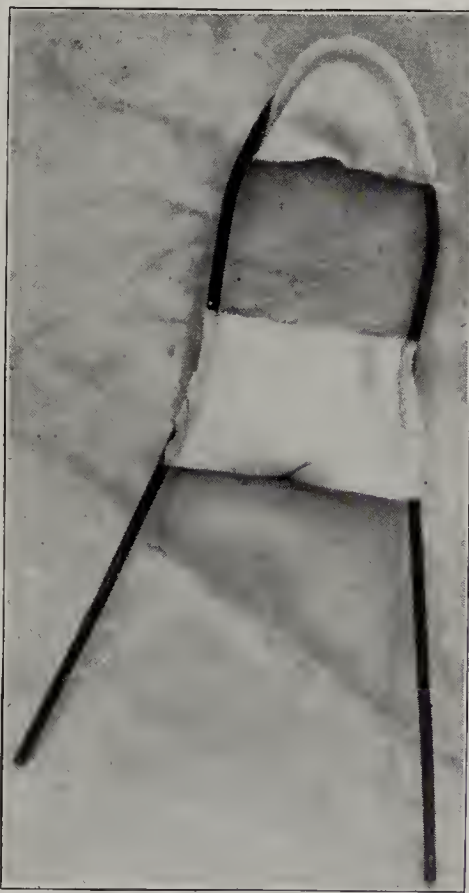


Fig. 6.—Wire splint designed to be incorporated in the postoperative dressings; any degree of overcorrection may be obtained by bending the wire; the lower strap of adhesive should be well above the incision.



Fig. 7.—Use of wire splint in dressing.

A very practical approach to the joint is indicated in Figure 5. An elliptic incision, with its lower angle prolonged downward toward the tendon, permits removal of the redundant skin and bursa in one mass, and at the same time leaves clean-cut edges for approximation when the wound is closed.



The simple wire splint shown in Figures 6 and 7, which I have used for many years, provides a convenient way of holding the toe in overcorrection during convalescence. It is much more comfortable than a plaster dressing; and, as it may be easily removed, it



Fig. 8.—Result six months after operation.

affords an opportunity for inspection of the wound and for the institution of voluntary motion, which should be encouraged at the end of a week.

The result that may be expected from this operation is shown in Figure 8.

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## LUPUS ERYTHEMATOSUS AS A SYSTEMIC DISEASE\*

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The clinical picture of localized or discoid lupus erythematosus, with which I wish to contrast the disseminate form with constitutional manifestations, is familiar to most practitioners. The conception of a grave form of lupus erythematosus with severe systemic disturbances and with the extension of the local process originated with Kaposi. In 1872 he first called attention to the presence of toxic symptoms, and was evidently familiar with the hyperpyrexial attacks occasionally seen when discoid lesions are present. Very little has been added to an understanding of the disease since his time. Boeck<sup>1</sup> temporarily confused the problem when he designated lesions on the fingers, which can now probably be classified with Darier's folliclis, as lesions of disseminate lupus erythematosus. The whole matter was probably still more obscured by the French tendency to enumerate a large number of subclasses of lupus erythematosus which essentially are only different degrees of the same disease.

\* From the Section on Dermatology and Syphilology, Mayo Clinic.  
1. Boeck, C., quoted by Jadassohn: *Handbuch der Hautkrankheiten* herausgegeben von Prof. F. Mrazek, Vienna, Hölder 3: 318, 1904.

While the cutaneous picture of disseminate lupus erythematosus is fairly well understood, the constitutional background remains, in many respects, a mystery. It is precisely this constitutional background in which the internist and the general diagnostician are fundamentally interested, because in combination with the cutaneous lesions it presents a wide variety of deceptive

### CUTANEOUS CHARACTERISTICS OF DISSEMINATE LUPUS ERYTHEMATOSUS AS CONTRASTED WITH THE CHRONIC

Disseminate Lupus Erythematosus	Chronic Discoid Lupus Erythematosus
1. Many lesions usually	1. Few well-defined patches only
2. Superficial lesions with slight atrophy	2. Deeper lesions, with definite scarring and telangiectasia
3. Involvement not only of face, but also of hands, fingers, neck, chest and sometimes any part of the body	3. Usually confined to face, ears and scalp
4. Actively inflammatory, reddish to purplish patches	4. Indolent, with erythematous border only
5. Borders of lesions ill defined; sometimes resemble chronic type; sometimes more like erythema multiforme or only atrophic, purplish patches	5. Border of lesions elevated and erythematous, with characteristic epithelial plugging, and often telangiectasia
6. Very little scaling; often dirty crusting, vesicle or bulla formation	6. Dry, extremely adherent scales; on removal, epithelial plugs from the follicles may be recognized on the under side
7. Often involves the mucous membranes	7. Rarely extends beyond the vermillion border of the lip

In a goodly proportion of disseminate cases, both types of lesions may be present.

possibilities. In fact, it is impossible at this time to estimate the actual incidence of disseminate lupus erythematosus because there is every probability that cases of this type masquerade under medical diagnoses such as scarlet fever, erysipelas, typhoid fever, pellagra and the symptoms of upper abdominal lesions.

### CUTANEOUS LESIONS

In the hierarchy of cutaneous diseases, disseminate lupus erythematosus differs from the chronic discoid type, with its lesions limited largely to the face and



Fig. 1.—The eruption of disseminate lupus erythematosus as it frequently appears on the face.

scalp, in that disseminate lupus erythematosus resembles the erythema multiforme group of dermatoses, instead of the exceedingly chronic atrophic changes involving the follicular structures of the face and scalp (Fig. 1). Acute or disseminate lupus erythematosus



has a tendency to become more widespread in the skin than the discoid type, resembling patches of dermatitis, and erythematous plaques, sometimes bullous in character. These lesions, in contrast with the discoid type, may appear on the extremities, and the mucous mem-

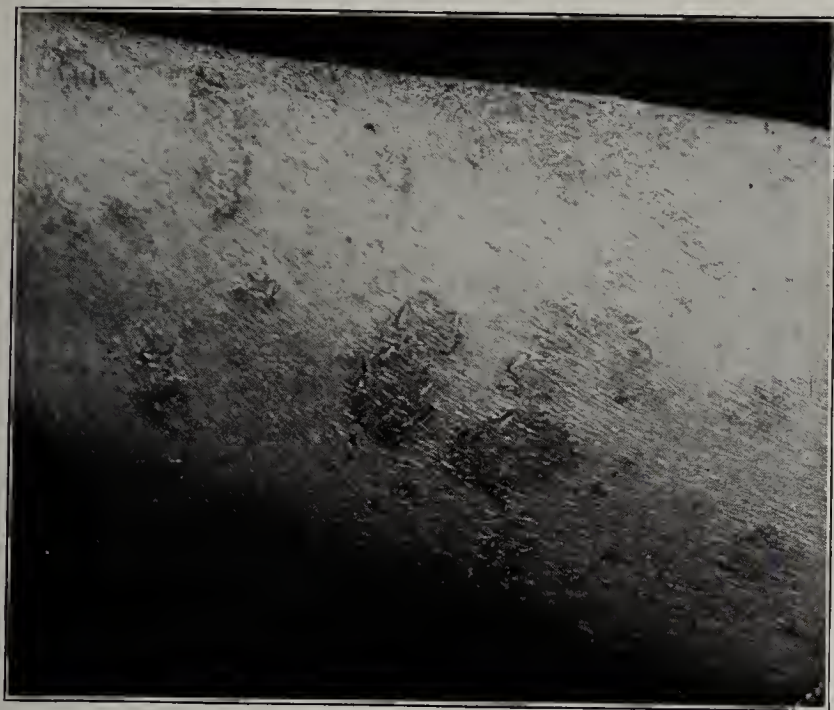


Fig. 2.—Lesions of disseminate lupus erythematosus on the forearm.

brane may be involved in varying degrees, somewhat as in the severe types of toxic erythema (Fig. 2). The chronic type may be present for years and then, especially in young persons, assume characteristics of the disseminate form. The accompanying table gives a condensed classification of the difference between cutaneous lesions of the disseminate and chronic types of lupus erythematosus.

#### CONSTITUTIONAL SYMPTOMS

The systemic symptoms of disseminate lupus erythematosus vary markedly in severity. Quite commonly the patient complains of a lack of physical endurance for years before cutaneous lesions appear. Irritability and sensitiveness are out of proportion to the apparent physical ailments. Vague abdominal complaints, at times severe, are almost always referred to. Very common also are aches and pains of various degrees in the joints. There may be a moderate to marked elevation in temperature for a long time, or there may be sharp hyperpyrexial attacks.

#### DIAGNOSIS

An outstanding feature of the condition is the protean character of its manifestations. It may resemble a number of diseases with widely varied symptoms. When the cutaneous manifestations predominate, seborrheic or eczematoid dermatitis, erythema multiforme, dermatitis venenata, the sarcoid of Boeck, lichen planus, erysipelas or pellagra may be more or less closely simulated. When the abdominal symptoms are uppermost, the presence of marked pain or diarrhea may lead to the hasty diagnosis of cholecystitis, gastric or duodenal ulcer and chronic appendicitis or colitis. If the toxic symptoms are pronounced, with high temperature and possibly a "typhoid state," confusion with typhoid fever, pneumonia, pyemia, rheumatism or malignant

endocarditis often occurs (Fig. 3). The suspicion of typhoid fever is strengthened by the frequent occurrence of leukopenia, sometimes extreme. In Case 4 the leukocyte count fell to 1,800 on one occasion.

In avoiding possibilities of error in diagnosis, a careful study of the eruption is essential. The face and scalp must be scrutinized for signs of old lesions, atrophy and patches of alopecia, the face studied for erysipeloid flush, the lips for silvering, the mucous membranes for erosions, the skin of the upper trunk and neck for signs of old lupus erythematosus, and the fingers for bluish, chilblain-like papules and patches. It may almost be accepted as axiomatic that, whenever lupus erythematosus extends from the face to the body and extremities, it becomes menacing. Conversely, cutaneous lesions occurring on the body, extremities or mucous membranes in association with chronic discoid lupus erythematosus must be carefully weighed as an evidence of impending dissemination, the patient's history closely investigated, and his constitutional background studied. The identification of a disseminate lupus erythematosus is of the gravest prognostic significance, and its treatment a problem of the utmost difficulty.

#### CHARACTERISTICS OF THE HISTORY

The history of a patient with typical lupus erythematosus in a disseminate phase presents striking characteristics: malaise, irritability, periodic lesions of the mouth, vague abdominal complaints such as pain, diarrhea, sometimes vomiting, hyperpyrexia, and occasionally cardiac, hepatic, gynecologic, neurotic and psychic symptoms. In many instances, the urine contains large quantities of albumin. It is apparent that without lesions of the skin as a guide, this is not a highly specific picture.

#### ETIOLOGY

The prevalence of tuberculosis of the gland is very striking. The tuberculous adenitis may not be demonstrable clinically, yet the retroperitoneal, pelvic and

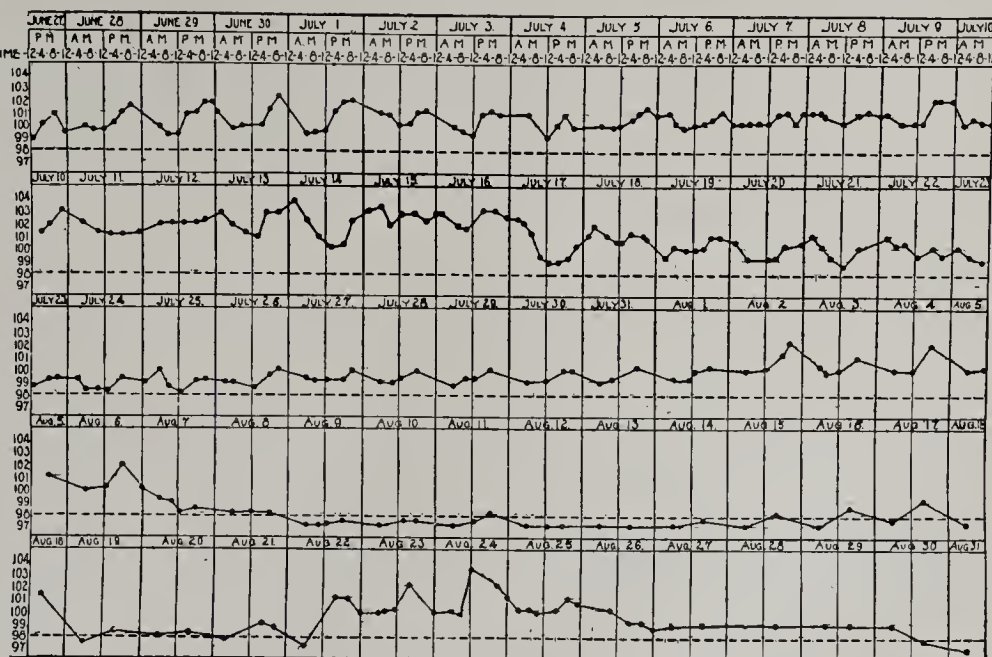


Fig. 3 (Case 4).—Temperature chart.

mesenteric groups may be severely affected, as shown in Cases 1 and 2.

**CASE 1.**—Disseminate lupus erythematosus with lesions of chronic and acute types. A man, aged 33, examined, April 1, 1918, had had abdominal pain, fever, and eruption on the



skin; patches had been present for five years, and recently they had been spreading rapidly. Examination revealed typical lesions of chronic lupus erythematosus on the face, and a large number of the disseminate type on the face and neck. A slight amount of albumin was found in the urine. Exploration of the abdomen was advised because of epigastric pain and a septic type of temperature. Nothing to account for the symptoms was discovered. Treatment was of no avail, and the patient died. At necropsy, very extensive tuberculous involvement of the peribronchial, retroperitoneal and pelvic lymph glands was noted. The spleen and the left lung were also involved. The kidneys were nephropathic.

No definite evidence of tuberculous glands in the abdomen was demonstrable during life; such evidence was not even discovered on surgical exploration, yet the lymphatic system showed severe tuberculosis.

This case strikingly illustrates the presence of abdominal complaints in association with disseminate lupus erythematosus, and the importance of making a correct diagnosis to obviate an unnecessary operation.

CASE 2.—*Acute disseminate erythematosus.* A woman, aged 20, examined in September, 1920, had had a cervical abscess (tuberculous?) opened in 1914. Six months before, she had had typhoid fever and since then various symptoms, chiefly epigastric pain, falling hair and exhaustion. Physical examination revealed the skin generally dry and hot, and the hair dry, thin and lusterless. There were patches of erythema with purplish tinge on the cheeks suggesting chronic erysipelas, similar patches on the fingers, and silvering of the lower lip. All the lesions were well defined and distinctly atrophic. The urine contained large quantities of albumin, and an occasional hyaline cast. The erythrocytes numbered 3,500,000, later slightly less than that number; lymphocytes, 2,870. Roentgenograms of the chest contained evidence of tuberculosis in the left upper lobe. Acid-fast bacilli were present; guinea-pig inoculation proved negative. A subcutaneous tuberculin test was not satisfactorily performed. Rest treatment, tonic measures, quinin and pills of ferrous carbonate (Blaud's pills) were given without benefit. A severe "flare-up" occurred after tonsillectomy. This subsided somewhat and the patient was better for a time, but died, Aug. 13, 1921. Necropsy revealed ulcerative tuberculous enteritis, caseating abdominal lymph nodes, and miliary tuberculosis of the spleen. The kidneys were almost double in weight, and definitely nephropathic. Serum from the lymph nodes contained tuberculosis bacilli. Cultures of the blood and spleen were sterile.

The condition had been diagnosed typhoid fever, probably because of periodic attacks of hyperpyrexia, a mistake in diagnosis easily made. The diagnosis depended on cutaneous lesions, and during periods of remission these were little in evidence. The flare-up of erythema on the face, and the high fever after tonsillectomy led to the mistaken diagnosis of erysipelas. Despite careful clinical study, but little evidence of tuberculosis was revealed; yet tuberculous glands in the abdomen were conclusively proved at necropsy.

Brooke,<sup>2</sup> Roberts,<sup>3</sup> Reitmann and Zumbusch,<sup>4</sup> and Low, Logan and Rutherford<sup>5</sup> have reported cases in which glands were extensively involved, and recognized on postmortem examination. Sequeira and Balean<sup>6</sup> report the presence of tuberculous glands in five of eleven cases of acute disseminate lupus erythematosus; necropsy was not performed in any of these. On the other hand, in another case these authors were unable to find glandular tuberculosis at necropsy. Gennerich<sup>7</sup> also reports a generalized adenopathy in a case which in his opinion was not tuberculous.

For a long time the extreme sensitiveness of patients with acute disseminate lupus erythematosus to comparatively banal injuries has been recognized. Sometimes these injuries are so insignificant that they would be ignored by healthy persons. The application of slightly irritating drugs, moderate heat, small doses of

roentgen ray, radium or actinic light occasionally tend to cause a definite spreading of the lesions of the skin, and also add to the toxic symptoms complained of by the patient. The therapist is also cognizant of sensitiveness to irritants, and it has almost become the rule to start the treatment of lupus erythematosus, unless it is exceedingly indolent, with the mildest applications. Unusual sensitiveness to tuberculin was first noted in this country by Ravogli,<sup>8</sup> who reported two cases of his own and cited others in the literature. His patients died, subsequent to the injection cutaneously of 0.001 mg. of tuberculin. This preparation should not be used for diagnostic or therapeutic purposes in such cases.

Pulay<sup>9</sup> and Gennerich noted the hypersensitiveness of patients with disseminate lupus erythematosus, and devised rather ingenious hypotheses with regard to

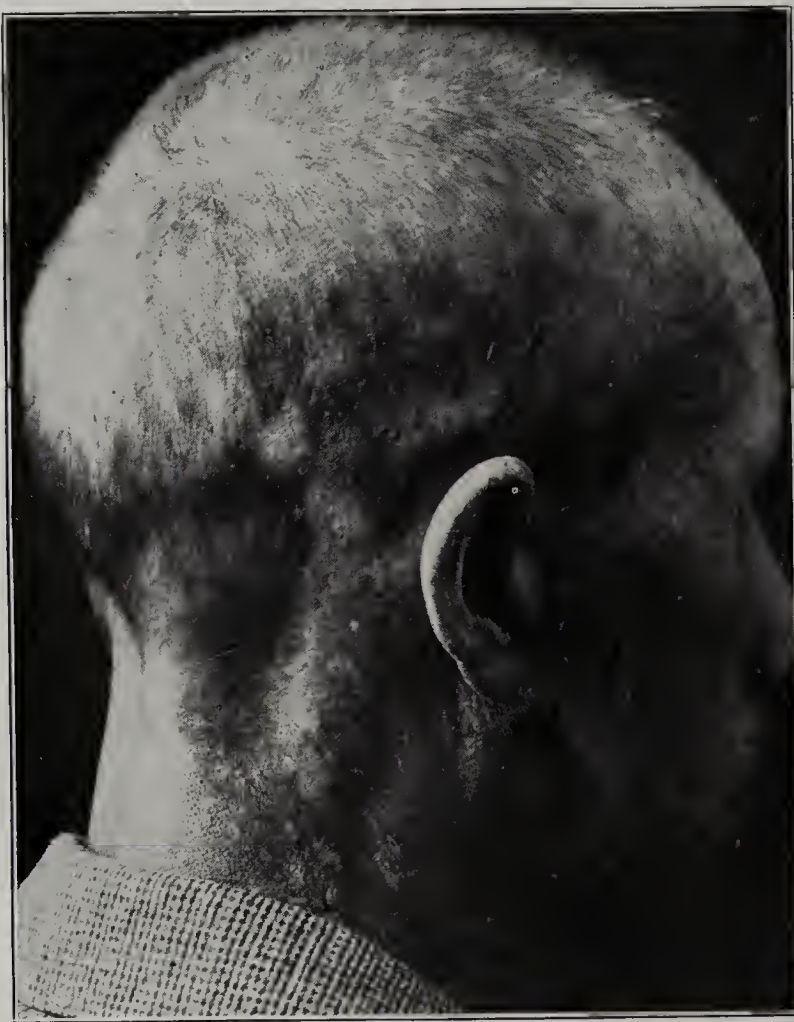


Fig. 4 (Case 5).—Patient before treatment of the glands with roentgen ray.

the etiology of the disease based on this feature. The former is inclined to attribute the manifestations of the disease to a photosensitiveness, chiefly because of the distribution of the eruption on the exposed parts. He attributes this photosensitiveness to certain metabolic products found in such diseases, for example, gout, diabetes and tuberculosis, and in other less definite

2. Brooke, H. G.: Lupus Erythematosus and Tuberculosis, *Brit. J. Dermat.* **7**: 73-77, 1895.
3. Roberts, L.: Acute lupus erythematosus (aigu d'emblée), *Brit. J. Dermat.* **23**: 167-178, 1911.
4. Reitmann, K., and von Zumbusch, L.: Beitrag zur Pathologie des Lupus erythematosus acutus (disseminatus), *Arch. f. Dermat. u. Syph.* **99**: 147-180, 1910.
5. Low, R. C.; Logan, W. R., and Rutherford, A.: A Fatal Case of Lupus Erythematosus, with Autopsy, *Brit. J. Dermat.* **32**: 253-262, 1920.
6. Sequeira, J. H., and Balean, H.: Lupus Erythematosus: A Clinical Study of Seventy-One Cases, *Brit. J. Dermat.* **14**: 367-379, 1902.
7. Gennerich, W.: Ueber die Aetiologie des Lupus erythematosus, *Arch. f. Dermat. u. Syph.* **135**: 184-207, 1921.
8. Ravogli, A.: Lupus Erythematosus Diffusus Unfortunately Treated with Tuberculin, *J. Cutan. Dis.* **33**: 266-272, 1915.
9. Pulay, E.: Stoffwechselpathologie und Hautkrankheiten, *Dermat. Wchenschr.* **73**: 1217-1234, 1921.



disturbances. Products of metabolism, such as glucose, acetone, hemoglobin, urea, lactic acid, hematoporphyrin and tyrosin, and other chemical substances have been shown to produce photosensitiveness, and any one of these substances, Pulay believes, may be the sensitizing agent in lupus erythematosus. He explains those cases in which tuberculosis is much in evidence as due to the sensitizing action of the tuberculotoxins.

Genmerich believes that there is a sensitizing agent produced in the destruction of the lymph glands by an unknown disease. According to his opinion, certain ferments of the lymphocytes are liberated which have a special affinity for the vascular system. The symmetry and localization on exposed parts he explains by the hematogenous distribution of the toxins, and their arrest in the capillaries which are subjected to irritation by light, air and mechanical agents. The toxins act as foreign proteins, and, when abundant, produce anaphylaxis. He admits the frequent association of lupus erythematosus with lymphatic disease, but does not believe that the lymphatic involvement is tuberculous.

Experience has also emphasized the hypersensitiveness of patients with disseminate lupus erythematosus to mild trauma. Particularly after the removal of tonsils and teeth, both systemic and local manifestations have been temporarily increased.

Interference with a focus of infection, as such, may produce extreme reactions. The removal of a single tooth produced a stuporous state in three of our patients. The usual reaction to the removal of pyogenic foci and to interference with a tuberculous focus is illustrated in Case 3. The hypersensitiveness to the removal of such foci need not necessarily be evidence of an etiologic relationship to the disease, although it is possible that the toxins in these foci may represent the chemical substances acting as sensitizers to light, according to Pulay's conception.

**CASE 3.**—*Disseminate lupus erythematosus with lesions of the acute type.* A woman, aged 42, examined, April 27, 1921, had had burning and itching eruptions during the warmer months for ten years (severe the last three months), and enlarged cervical glands for five years. One sister had died of tuberculosis. Examination revealed acute lupus erythematosus on the face, back and arms, old neuroretinitis, and tuberculous cervical adenitis. The urine contained large quantities of albumin, and occasional showers of casts. The patient was emaciated and exhausted. General measures of treatment with rest in bed were of no avail. A cervical gland was removed for biopsy, and the patient became severely toxic, and passed into a semicomatose condition with rise in temperature and extreme vertigo. Tuberculosis of the cervical glands was confirmed by the biopsy. Nine teeth were removed, one at a sitting. Each extraction was fol-

lowed by malaise and stupor. The removal of all dental foci was followed by definite temporary improvement in the eruption and general health. The patient died one year after she was first examined.

The nature of the eruption was characteristic, and needed only a proper diagnosis to explain the systemic symptoms. The sensitiveness to interference with pyogenic foci and tuberculous foci was so marked as to suggest an allergy to toxin in the focus rather than to response to surgical trauma.

It would seem more likely that a procedure such as the extraction of an infected tooth would act more in the nature of an injection of a nonspecific protein than as an eliminator of a photosensitizing agent; this theory would also better explain the temporary improvement often noted some time after all the pyogenic foci have been removed. The disease has improved

strikingly after attacks of erysipelas, which acted as a nonspecific vaccination.<sup>10</sup> Engman and McGarry<sup>11</sup> report improvement in the discoid type of the disease following the use of typhoid vaccine as a foreign protein. Improvement following any of these procedures is usually temporary, and if there is a definite etiologic relationship it is not likely that the pyogenic infection is alone responsible for the cutaneous manifestations of lupus erythematosus.

My personal observation of the cases under consideration inclines me strongly to the belief that lymphatic tuberculosis is a fundamental predisposing cause of disseminate lupus erythematosus. My study<sup>12</sup> of the discoid type suggests that clinically recognizable tuberculosis is a relatively unimportant element in the etiology of the chronic form of the disease. This apparent paradox may perhaps be reconciled by the hypoth-

esis that the difference between chronic and acute lupus erythematosus lies chiefly in the activity of the tuberculous focus in glandular tissue, and the patient's resistance or response to it. That the tuberculous factor in either form of lupus erythematosus is not necessarily clinically recognizable, even though it may be etiologically important, is suggested by two of the cases in the series in which the patients were virtually riddled with glandular tuberculosis without any clinically recognizable signs. Certain elements strongly suggest that patients with disseminate lupus erythematosus are under a cross fire from tuberculosis and septic infection, the one creating an allergic background while the other

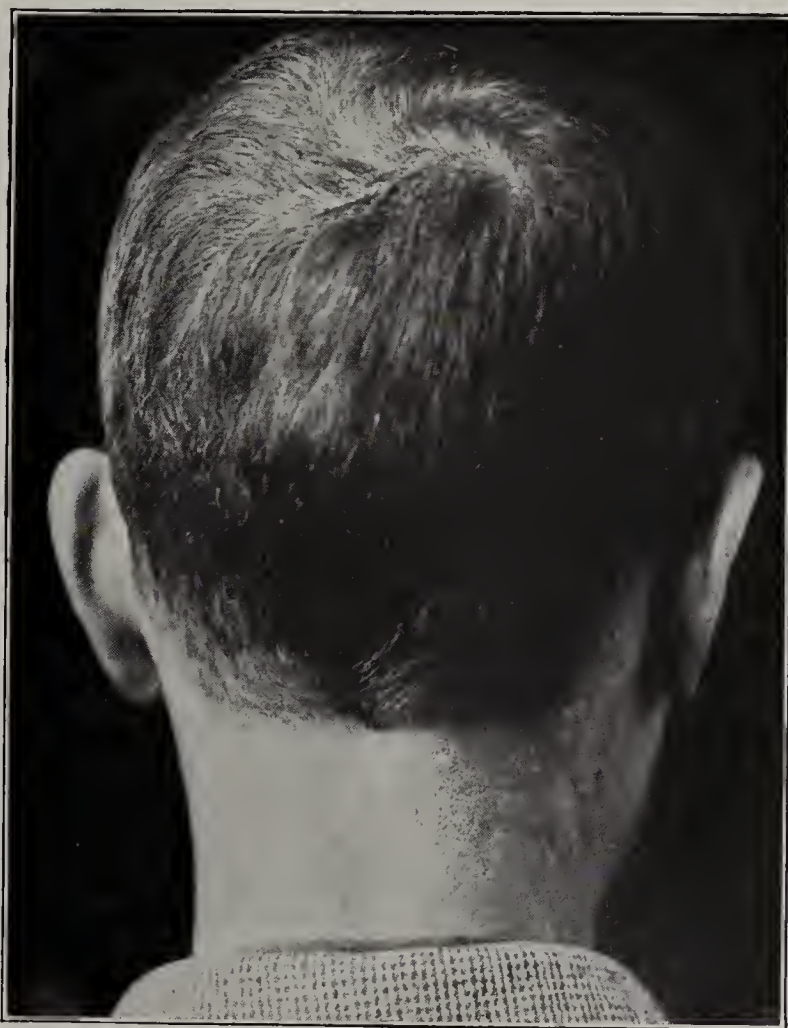


Fig. 5 (Case 5).—Appearance of scalp and neck one month after application of roentgen ray to the gland-bearing areas; no topical applications in the interval.

10. Stokes, J. H., in discussion on Hartzell, M. B.: Lupus Erythematosus and Focal Infection, Arch. Dermat. & Syph. 2: 445-446 (Oct.) 1920.

11. Engman, M. F., and McGarry, R. A.: The Treatment of Certain Diseases of the Skin by the Intravenous Injection of a Foreign Protein, J. A. M. A. 67: 1741-1745 (Dec. 9) 1916.

12. Goeckerman, W. H.: Is Lupus Erythematosus Discoides Chronicus Due to Tuberculosis? Arch. Dermat. & Syph. 3: 788-801 (June) 1921.



periodically excites explosions in the predisposed and unstable organism. It is, of course, impossible to intimate with any positiveness which infection plays which part. Stokes<sup>13</sup> suggests the hypothesis that, when septic infection creates the hypersensitiveness, the result of a hematogenous infection by tuberculosis bacilli is a tuberculid, while, when tuberculosis creates the hypersensitiveness, the result of a streptococcal or septic invasion is disseminate lupus erythematosus. In the most recent case under observation, the prominence of the septic aspect was especially conspicuous. The relapse was accompanied by arthritic manifestations and the development of subcutaneous abscesses which could scarcely have been due to tuberculosis, as such. The erythema multiforme-like characteristics of the acute disseminate eruption in certain cases is much more suggestive of streptococcal origin than of tuberculosis, as such.

CASE 4.—*Disseminate lupus erythematosus*. A youth, aged 18, in whom the first patch had occurred three years before, was examined, April 21, 1921. General malaise and occasional night sweats had been noted. Examination revealed the disseminate type of lesions on the cheeks, lips, scalp and fingers and in the mouth, and evidence of severe myocardial change. Persistent albuminuria and leukoplakia (lowest count 1,800 leukocytes) were noted. Guinea-pig inoculations with pus from a subcutaneous abscess were negative for tuberculosis. A remission occurred after rest in bed, treatment of general symptoms and toxic manifestations. The patient appeared to be well nourished, and showed no evidence of skin lesions when he left. He died at his home one month later. He had, of course, not recovered from his myocardial disorders. Necropsy was not performed.

The findings in this case apparently emphasize the septic element rather than the tuberculous in such conditions, and is illustrative of the fatal character of the disease, even after the elimination of cutaneous and general symptoms.

#### PROGNOSIS AND TREATMENT

The prognosis of true disseminate lupus erythematosus is invariably extremely grave. Four of the patients in this series are already dead. Dermatologists of large experience have difficulty in recalling that patients with this disease accompanied by hyperpyrexial attacks and renal complications survive for any considerable period. In view of this extremely grave prognosis, it is permissible to assume some risk in the therapeutic management of these cases. This risk attaches particularly to the removal of pyogenic foci. The extreme reactivity of these patients may result in the disastrous termination of an attempt to interfere with even a minor focus. The extraction of infected teeth should be performed with the utmost caution, with the patient under a strict hospital regimen, and should not, if avoidable, be attempted during a febrile period. Tonsillectomy should be surrounded with equal precautions. The impulse to explore in the presence of abdominal symptoms should be restrained until the case is thoroughly worked out. Treatment of the nephritis should be symptomatic, and should depend largely on the importance of this element in the combined picture which the patient presents.

Iodoform in tablets coated with phenyl salicylate has been used for a number of years with some degree of success. Jadassohn<sup>14</sup> expresses the opinion that careful nursing and hygiene, complete rest in bed and quinin in large doses by mouth probably represent

the method of choice at the present time. In some instances the response to all measures is absolutely nil, and the treatment must be directed toward combating symptomatic indications as they arise. The remarkably high temperature which can be maintained by these patients for days, without remission, is a particularly trying feature. Myocarditis, arthritis, enteritis and nephritis may follow one another or combine in a single case, and yet the patient may survive several attacks before the ultimate fatal issue. Bronchopneumonia is a common terminal condition.

My experience in Case 5 resulted in the development of a method of treatment which, so far as I know, has not been tried or reported. After every measure that we could devise had been employed without results, it occurred to me that the patient might, as in Cases 1 and 2, have tuberculous glands that could not be detected clinically. In view of the very beneficial effect of roentgen-ray irradiation on practically all glandular diseases, I decided to treat this patient very much as if he had Hodgkin's disease, theoretically assuming that the cutaneous lesions were the result of a toxic manifestation in the skin, incidental to tuberculosis of the glands. I hoped that the lesions of the skin might disappear as do leukemids, when roentgen rays are applied to the glands in leukemia or Hodgkin's disease. The result was most striking (Figs. 4 and 5). The treatment was repeated in three months. The patient now reports himself in good health, a year following the first irradiation.

CASE 5.—*Acute disseminate lupus erythematosus of the erythema multiforme type*. A man, aged 48, examined July 8, 1921, complained chiefly of burning and itching eruption, sore mouth, diffuse alopecia, marked weakness and loss of appetite. He had had typhoid fever at the age of 21, and rheumatic fever at 26. Examination revealed lesions on the face, neck and hands, of the erythema multiforme type of acute lupus erythematosus. There were maceration and exfoliation of the oral mucous membrane, but there was no distinct bulla, and almost total alopecia of the diffuse type. The urine contained a moderate amount of albumin. The patient was emaciated and exhausted. A severe reaction in the form of arthritis, myositis and stupor followed extraction of one tooth. Various local applications, including superficial roentgen ray, to the lesions were of no value, and no definite improvement followed rest in bed with quinin. Neoarsphenamin aggravated the condition. One dose of filtered roentgen ray was applied to the gland-bearing regions; the next day the patient was better, and had rested at night with less itching and burning of the skin, and less soreness in the mouth. His appetite returned. Six weeks later there was a thick growth of hair on the scalp, and little evidence of the former cutaneous lesions. The patient had gained 25 pounds (11.3 kg). One year later he was well and working (Figs. 4 and 5).

This patient did not respond to the usual methods of treatment, but the application of filtered roentgen ray to the gland-bearing areas caused prompt improvement of all symptoms.

Whether the excellent therapeutic response can be attributed solely to the effect of the roentgen rays on the glands must for the present remain doubtful, since the method must have further trial before its value can be predicted. The exact mechanism of the effect of the rays also remains obscure. In view of the deep-seated nature of the process, permanent cure is, perhaps, too much to expect.

Other patients with lupus erythematosus have been treated in the same manner, and will form the subject of a separate report.

13. Stokes, J. H.: Personal communication to the author.

14. Jadassohn, J.: Lupus erythematosus, Handbuch der Hautkrankheiten herausgegeben von Prof. F. Mrazek, Vienna, Hölder 3: 298-424, 1904.



## CONCLUSIONS

1. The clinician should become better acquainted with the systemic symptoms of disseminate lupus erythematosus.
2. Any cutaneous lesion associated with a history of fever and vague abdominal complaints should be exactly diagnosed, even though it appears to be trivial.
3. Lupus erythematosus disseminatus must be distinguished from pellagra, erythema multiforme, erysipelas, dermatitis venenata, eczema, lichen planus, typhoid fever, pneumonia, rheumatism, septicemia and septic endocarditis, and from all diseases presenting vague abdominal symptoms, such as chronic cholecystitis, chronic appendicitis, colitis, and gastric and duodenal ulcers.
4. Renal disturbances, sometimes of a severe type, may be present in this disease, and other symptoms may be inconspicuous.
5. The prognosis of the disease is grave.
6. Tuberculous adenitis is so commonly associated with disseminate lupus erythematosus that it seems to play some part in its cause.
7. An extensive tuberculous adenitis may be demonstrated at necropsy, even though the most careful clinical search, including operative abdominal exploration, has failed to disclose it during life.
8. The sensitiveness of these patients to irritants in general and to the removal of foci of infection in particular is very striking.
9. Foci of septic infection should be removed with the greatest caution.
10. Tuberculin should not be used subcutaneously, either for diagnostic or for therapeutic purposes.
11. The extreme reactivity to the removal of pyogenic foci suggests an allergic phenomenon and not the ordinary response to surgical trauma.
12. Roentgen-ray therapy, directed to the deeper glands after all pyogenic foci had been removed, resulted in striking improvement in one of the patients.

VERY HIGH BLOOD PRESSURE AND  
CONGENITAL HEART DISEASE

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The types of congenital heart lesion encountered in adult life, for instance, around the age of 40, are of two kinds. The typical congenital heart lesion, with the enormous enlargement in the region of the conus and the marked thrill in the pulmonary region, accompanied by loud systolic bruit heard over all the chest, is usually seen by many physicians, and is recognized by nearly all. There is another type of congenital heart disease that is much more obscure and the existence of which some people doubt. We find, in some of these cases, a very high blood pressure, with a right ventricular preponderance. In these, no definite inference can be drawn from what is heard on auscultation.

When a person with a blood pressure of 240 or thereabouts gives a history of many years of circulatory difficulty, we should expect to find with our fluoroscope a very large left ventricle and the usual picture of long standing cardiovascular renal disease. In the type of congenital heart disease to which I refer, there is no important renal involvement. The heart structure

occupies the center of the chest, and is usually elongated. There is a suggestion of prominence in the region of the pulmonary artery. I have come to the conclusion that it represents a late stage of infantile heart and that the high blood pressure is a systemic compensatory blood pressure relating to the high blood pressure in the pulmonary circuit.

One person presenting this syndrome had been the subject of most elaborate observations in various institutions and resorts, and had been much frightened by uniformly bad prognosis. Since his condition has been recognized as a physiologic variation of a type of congenital origin, this man has lived comfortably for several years. Up to the present time, he has been on a regimen planned chiefly to maintain his general muscular strength. His blood pressure has not varied, always registering from 240 to 260. He has a son with a heart of the same type.

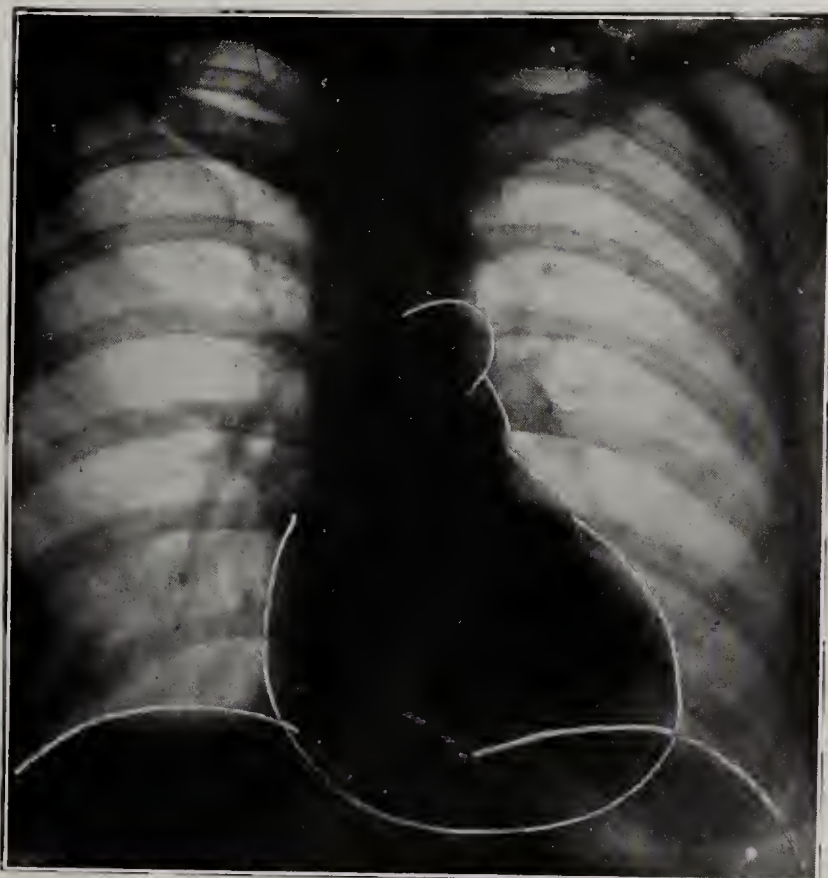


Fig. 1.—Outline of heart as revealed by the orthodiagram: The heart is not enlarged, as would be expected with high blood pressure.

In the infinite number of human beings, a variation in type of structure of the circulatory system is reasonably to be expected. I am convinced that there is such a variation in type involving a right predominance, and, that, later in life, a higher blood pressure usually appears, without any definite disease. It is not a common type.

In a practice devoted exclusively to cardiac disease, these patients appear now and then. They present, in different degrees: (1) a very high blood pressure in a person with none of the usual causes, such as defective kidneys or hardening of the arteries; (2) an anomalous finding in the orthodiagram and electrocardiogram, and (3) a remarkably slight inconvenience from the very high blood pressure, e. g., 230.

I have spoken of this condition once or twice, although my experience with it is extremely limited.

## REPORT OF CASES

Miss A. P. M. was seen by me in consultation, and I suggested a probable congenital lesion of the heart, giving the opinion that the high blood pressure was due to that and no other disease. I predicted that the orthodiagram and also



the electrocardiogram would be anomalous, and that the electrocardiogram would show right preponderance. The prediction of the right preponderance in a patient with a blood pressure of 230 was a fairly bold venture. Subsequent technical examination confirmed my prediction.

The patient, when first seen by me, was sick in bed, complaining of marked shortness of breath and nervousness. She had severe headache and palpitation. She had been in bed with this complaint for two weeks, without improvement.

Five years previously, there had been a similar attack, which kept her in bed for six weeks; but between these two attacks she had been able to go about, with little discomfort. She was told that she had a high blood pressure and a disease of the heart valve. The present attack, she thought, was brought on by a period of overwork and nervousness. Her physician had been giving her digitalis, which on my recommendation was stopped, and she was put on bromids, given three times a day. She improved under this treatment, and was able to come in to my office a month later, at which time the orthodiagram (Fig. 1) and the electrocardiogram (Fig. 2) were taken. The heart was only a little enlarged, and there was a harsh systolic murmur on the apex and all over the heart, loudest at the aortic area. The aortic second sound was markedly increased. The blood pressure was 235 systolic, but 130 diastolic. The pulse rate was 90 and irregular, owing to sinus arrhythmia and premature beats, as the electrocardiogram showed.

#### COMMENT

The importance of recognizing the condition lies in the fact that the patient must not be treated as an invalid, but must be allowed to lead a normal life, as far as her strength goes. The benefit of this treat-

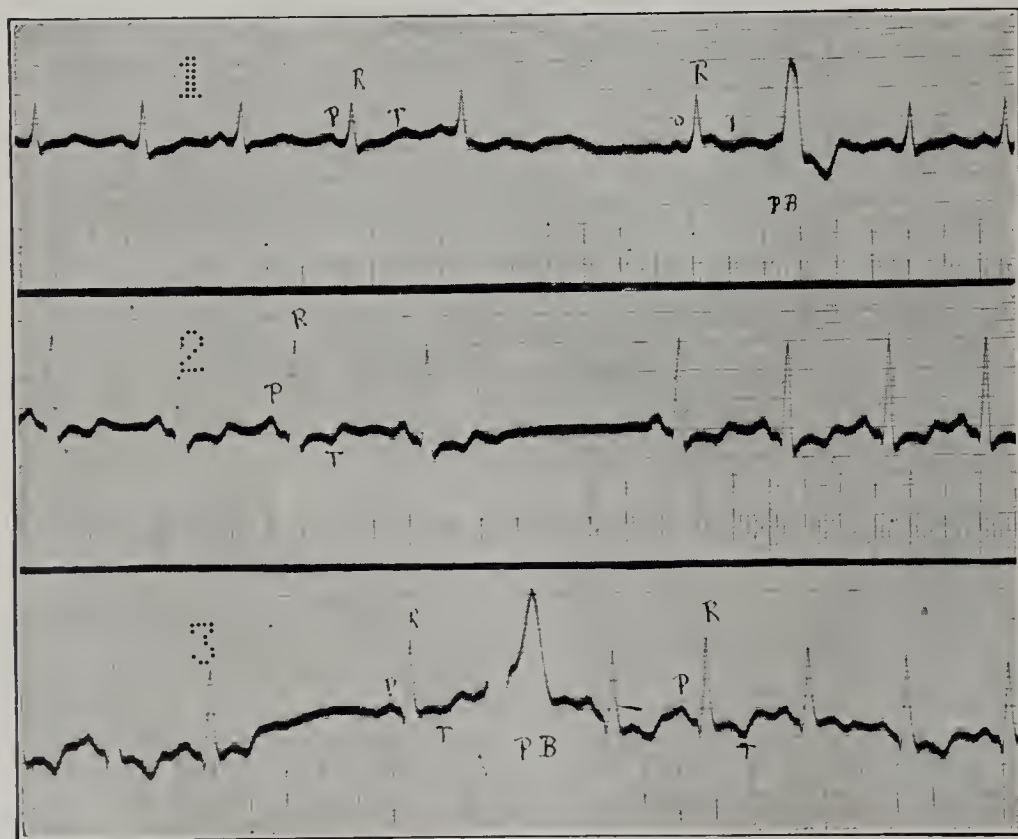


Fig. 2.—Sinus irregularity, denoted by long pauses between some of the beats, sometimes as long as 1.40 seconds, and the frequent variations in the intervals between the other beats; ventricular premature beats starting from the left ventricle are present after some of the long pauses. They are marked *P B* in Leads 1 and 3.

ment was evident in an improvement as soon as a rational plan of living was instigated and the fear of heart failure was put aside.

109 East Sixty-First Street.

**Typhoid Fever in World War.**—There was less than one case of typhoid fever during the World War to each 94 cases during the Civil War, and to each 140 cases during the Spanish-American War and Philippine Insurrection.—(A. G. Love, *Military Surgeon*, August, 1922.)

## Clinical Notes, Suggestions, and New Instruments

### RETICULAR KERATITIS: REPORT OF A CASE

ELTON S. OSBORNE, M.D., SAVANNAH, GA.

In the case here reported, the malarial parasite appears to be the etiologic factor.

A young man, seen in November, who had been working at his trade as a carpenter for several months in various small towns situated near the Savannah River swamps, a malarial section, had had chills and fever, in September, for which he took quinin. Whenever treatment was stopped, the symptoms reappeared, this continuing for two months.

Two days before I saw him, he was driving an automobile in the country, and he thought a foreign body had entered the left eye, which suddenly became painful and inflamed, rendering sleep impossible. Examination revealed the conjunctiva of the left eye inflamed, and there was pericorneal injection.

There were raised ridges on the corneal surface, having the shape shown in the illustration, the epithelium of which was raised above the corneal level; but there was no denuding of the surface. There was no staining with fluorescein.

The attack lasted more than a week, when the eye returned to normal, developing normal vision, although the vision in the affected eye had been limited to counting fingers during the attack.

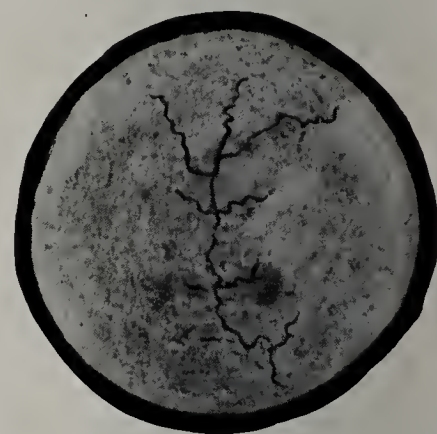
The family history was negative. The patient had had only the diseases of childhood, and no previous eye trouble. His appearance indicated that he had lost weight, and he stated that he was 10 pounds (4.5 kg.) underweight. The skin was sallow, with an icteroid tinge, and there was an herpetic eruption on the lips. Ears, teeth and tonsils were negative. The pupils were equal, responding to light and accommodation, and there was no nystagmus. Ocular movements were normal. There was a yellowish tint and injection of the ocular conjunctiva, and pericorneal injection. Ocular tension by a McLean tonometer was 16. The cervical glands and thyroid were not enlarged.

The lungs were normal. The pulse was 101; the blood pressure, 110 systolic, 84 diastolic. The heart was regular and there were no murmurs. The abdomen and external genitalia were negative. The prostate was normal and was not tender, and there was no discharge on stripping.

The malarial parasite present in the blood was probably quartan. The Wassermann reaction was negative. The urine was scant and highly colored. Specific gravity was 1.030. There was no albumin or sugar.

#### CONCLUSION

It would appear that the malarial parasite was the etiologic factor. There had been a malarial infection for several months, during which time quinin had not been given in sufficient dosage or the administration continued over a long enough period to destroy all parasites. The recovery was prompt on the administration of sufficient quinin, and there has been no recurrence of any symptoms. The daily quinin dosage



Ophthalmoscopic appearance of reticular keratitis.



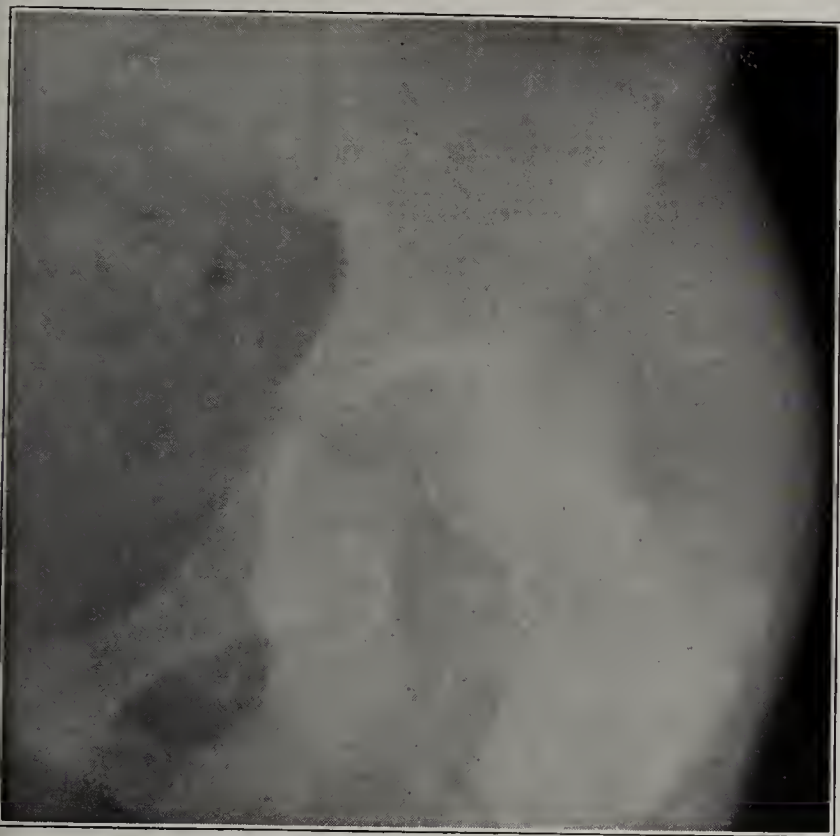
is still maintained. The only local treatment was atropin instillations, and the patient was told to wear dark glasses.

19 East Jones Street.

# TRAUMATIC LUXATION OF THE HIP IN CHILDHOOD: REPORT OF CASE

DOUGLAS P. MURPHY, M.D., RUTHERFORDTON, N. C.

Hip joint dislocation of traumatic origin in children is rare. When this joint is subjected to undue strain, fracture is the rule in childhood.



Traumatic dislocation of the left hip in a child 8 years old.

Maffei<sup>1</sup> found only forty-nine cases reported in the literature, to which he added three from a series of 1,842 luxations occurring over a period of twenty-one years at the Rizzoli Institute of Bologna. Maffei noted that the posterior luxation was most common, posterior iliac luxation occurring in thirty-three and posterior ischiatic in six cases. Of the anterior, two were suprapubic, one was iliopectoral, and six were obturator. In one case, the type was not given. Thirty-seven occurred in males, and eleven in females. The left hip was injured in twenty-two cases, and the right in seventeen.

Of Maffei's own cases, two were posterior iliac of the left leg, and one anterior suprapubic of the right leg. All were operatively reduced, and were cured. Of the cases recorded in the literature, spontaneous reduction was affected in only one.

## REPORT OF CASE

The case here reported is presented because of the rarity of this accident in childhood.

G. C., a boy, aged 8 years, was struck, Dec. 25, 1922, by an automobile, while he was bending over to pick up something. He was brought to the hospital a few minutes after the accident. He had been bleeding at the nose. He was quite excited, and complained of pain in the region of the left hip, which was increased on motion. The left eye was closed, and the lid was discolored and edematous. There was a slight laceration of the lower lip. The left leg appeared shortened, and was flexed somewhat at the thigh and at the knee. It was rotated inward, and motion was limited laterally and in extension. The head of the femur could be felt prominently above and behind its normal position.

1. Maffei, F.: Contributo allo studio della lussazione traumatica dell'anca nell'infanzia, Chir. d. org. di movimento 6: 604, 1922, reviewed by Brennan: Internat. Abstr. Surg., January, 1923.

Posterior iliac luxation of the left femur was diagnosed with slight concussion of the brain and slight laceration of the lower lip. The diagnosis of posterior luxation was confirmed by roentgen-ray examination, as shown in the accompanying illustration.

The head of the femur was easily returned to its normal position, under light ether anesthesia, without resort to open operation.

## SUMMARY

1. Traumatic dislocation of the hip joint in childhood is rare.
2. Males are more frequently affected than females.
3. Posterior luxation is the commonest form.
4. The left hip is affected slightly more often than the right.
5. Operative interference is frequently necessary.

## FIBROMA OF STOMACH

J. R. COOPER, M.D., NEW CASTLE, PA.

On account of the rare occurrence of fibroid tumors in the stomach, I thought it would be interesting to report this case. In fact, I have been unable to find any reference to it in the literature I have at hand.

*History.*—A business man, aged 45, married, was referred to me in September, 1921, by Dr. F. F. Urey for a roentgen-ray examination to determine, if possible, the cause of hemorrhages he was having from the stomach and bowels. About two years before, the patient at times became dizzy, and his stools after these spells were dark and of a tarry consistency. He consulted a number of physicians, but none of them were able to discover the real cause of his trouble. In 1920 his dizzy spells became more pronounced, and he occasionally vomited blood in considerable quantities. His condition then was thought to be ulcer of the stomach or duodenum, but no ulcer history could be secured except the hemorrhages. There was no pain or tenderness before or after eating; his appetite was generally good, and there was no loss of weight. The skin and the general appearance were normal.

*Roentgen-Ray Findings.*—On making the preliminary fluoroscopic survey before giving the opaque meal, I noticed extending into the gas bubble of the stomach a tumor-like mass about as large as a medium sized orange. It was



Tumor in cardiac end of stomach, extending into the gas bubble.

observed to rise and fall with respiration, and no pulsation could be seen. The tumor, while resembling the apex of a heart, was seen to be distinct from this organ. Its outline could be best observed when the patient held his breath after a medium full inspiration. I felt that we were dealing with a benign neoplasm, as the history of such long standing would rule out malignancy of the stomach. Aneurysm of the abdominal aorta was thought of, but as the Wassermann reaction was negative and no pulsations could be seen, it



was ruled out. To me it resembled a polyp. I then gave the patient a barium meal, but no evidence of ulcer of the stomach or duodenum could be found, and the peristalsis was normal. With the stomach filled with the barium mixture, the tumor could not be seen.

*Operation and Result.*—In June, 1922, the patient had had a severe attack of dizziness, and vomited a large quantity of blood; he also had passed considerable blood by the bowels. He had been advised at the time of the discovery of the tumor to have it removed; but, as his health was good, he did not heed the advice until this attack, when, becoming alarmed, he went to Rochester, Minn., and was operated on by Dr. Charles Mayo, July 18, 1922. Dr. Mayo wrote me:

"I operated on Mr. H., July 18, 1922, excising a fibromyoma the size of an apple in the cardiac end of the stomach. The tumor was growing from the anterior wall about 1½ inches from the cardia, and I removed it with its base. The opening was closed with two rows of chromic catgut. The pathologic report was fibromyoma with a large ulcer on the mucous surface. This condition is quite a rare one."

The patient is now in perfect health, with no return of his former symptoms.

111 East North Street.

#### CARCINOMA OF THE STOMACH: REPORT OF CASE, AND EXAMINATION EIGHTEEN YEARS AFTER OPERATION \*

JOHN DUDLEY DUNHAM, A.B., M.D., COLUMBUS, OHIO  
Assistant Professor of Medicine, Ohio State University  
College of Medicine

*History.*—A man, aged 52, an ice dealer, consulted me in July, 1904, for a gastric complaint. The family history was negative, none of his people having died of tuberculosis or malignant disease. He himself had had the diseases of childhood, but no other diseases, and stated that he had never had venereal infection. He was not addicted to the use of tobacco or alcohol.

The illness for which he consulted me began in January, 1904, when the ingestion of food was followed by eructations of gas and sour fluid. Coincident with this was a loss of appetite and inability to perform heavy work. The family physician administered some artificial digestants and regulated the diet, but without benefit. For the preceding four weeks he had occasionally vomited sour, undigested food, but never blood, nor had he observed dark stools. There was no definite history of pain after food.

*Examination.*—The skin was sallow and the conjunctivae pale. The weight before the beginning of his illness was 175 pounds (79 kg.), and was now 130 pounds (59 kg.). The tongue had a whitish coating. The chest showed normal conditions. There was a small, indefinite, movable tumor to the left of the median line in the epigastrium. The stomach appeared to occupy its usual position. The liver and spleen were normal. An examination of the blood showed a hemoglobin percentage of 50 by the von Fleischl method; a secondary anemia with an increase of leukocytes was shown by stained specimens. The urine was normal. The stomach contents, one hour after an Ewald test meal, showed an absence of free hydrochloric acid and the presence of lactic acid. Food fragments from a meal of the previous night were found. The guaiac test was positive.

*Treatment and Course.*—A diagnosis of cancer of the stomach was made, and the patient was advised to consult a surgeon without delay, for the purpose of having an exploratory operation performed. This advice was rejected by the patient, who was under the care of another physician, receiving medical treatment from July to Dec. 18, 1904. On the latter date, five months after a diagnosis had been made, he entered Mount Carmel Hospital in the service of Drs. W. D. Hamilton and C. S. Hamilton. The patient had become markedly anemic and sallow in appearance. He had recently vomited coffee-ground material, and had suffered a consider-

able loss of strength. His weight was 126 pounds (57 kg.). In the epigastrium was a tumor the size of a lemon, quite sensitive to the touch, so that its physical characteristics could not be determined. The hemoglobin was 40 per cent., and there was present a marked secondary anemia.

Dr. C. S. Hamilton operated on the patient, Dec. 22, 1904. The two surgeons reported the stomach to be the seat of a tumor extending from the region of the pylorus along the lesser curvature to its middle. The growth partially closed the pylorus, involving the peritoneum on the anterior gastric wall. Subtotal gastrectomy was performed after the Mayo method, 1 inch of the duodenum being removed, and a posterior gastro-enterostomy with Robson bobbin was done.

*Pathologic Examination.*—The portion of the pyloric end of the stomach removed measured 12 by 9 by 3 cm. The anterior surface was irregular, extending for a distance of 7 cm. toward the cardiac end. The omentum was attached to this thickened mass. Posteriorly, the surface was smoother, the thickening extending down 5 cm. from the lesser curvature. A hard, irregular, indurated mass occupied the wall of the stomach, except the lower posterior portion, along which was an apparently uninvaded strip. The inner surface was reddened and injected. Erosions and ulcerations were noted. The mucosa could be made out only in the free area.

The photomicrographs<sup>1</sup> and the histologic report were made by Dr. James McIlvaine Phillips, who found the specimen to consist of an irregular block of white tissue, previously fixed and hardened, and brought to the laboratory in alcohol. The block was an irregular mass about 3 cm. long, 1.5 cm. thick, and 2 cm. wide. One surface resembled thickened and irregular mucous membrane, the other serous membrane. The mass of tissue was cut into blocks of suitable size, embedded in celloidin, and these blocks so oriented that sections cut from them extended from the mucous to the serous surfaces. Sections were then stained in hematoxylin and eosin and, for photography, in alum carmin.

The sections took the stain poorly. The tubular glands in the thickened mucous membrane were enlarged and irregular. In their more superficial portions, the cylindric epithelium lining them consisted mostly of a single layer. In their deeper portions there were several layers, and in some tubules the cells entirely filled the lumen. A few of the tubules were cystic. In many of the tubules the thickened layer of cells lining them infiltrated directly into the surrounding tissue. The epithelial cells were large, and many of them swollen and hazy, being transformed into a material which resembled mucin in staining reaction. The submucosa was thickened and infiltrated with round cells and leukocytes. In places, irregular islands of epithelial cells were seen.

The muscular coats had almost entirely disappeared, and were replaced by masses of epithelial cells, the nuclei in many of which showed karyokinetic changes. Some of these cells contained two or more nuclei. The masses of cells were separated from one another by a very coarse mesh network of fine, loose connective tissue fibers. Very delicate capillary blood vessels were seen in these strands, but none were found among the epithelial cells. Here and there large islands or strands of connective tissue and atrophic involuntary muscle were seen.

The diagnosis, carcinoma of the encephaloid type, was confirmed by Dr. Francis Carter Wood of New York.

Following operation, the patient had a stormy convalescence, but slowly and steadily improved.

*Later Examination.*—Dec. 4, 1922, the patient, aged 71, appeared healthy, and his digestion was perfect. He ate six times daily, indulging in all varieties of food. The only abnormality noted was occasioned by a feeling of hunger.

#### CONCLUSION

This case is reported as a plea for more frequent gastrectomy for cancer of the stomach. The patient has everything to gain and nothing to lose by such a procedure.

Probably very few patients have lived eighteen years after an operation for carcinoma of the stomach.

327 East State Street.

\* From the Department of Medicine, Ohio State University College of Medicine.

1. These were reproduced by Dunham, J. D.: New York M. J. 84: 218 (Aug. 4) 1906.



THE INTRAGASTRIC DETERMINATION OF ACIDITY BY  
MEANS OF THE CELLULOID CAPSULE

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While there may be variations of opinion as to the practical significance of exact quantitative determinations of the acid values of the gastric contents, there can be no doubt as to the value of a qualitative determination of the presence or complete absence of gastric acidity. The absence of free hydrochloric acid may signify malignancy, a marked atrophic gastritis, a benign achylia or complete neutralization with alkalis.

Although the determination of anacidity is thus of great practical value, there are times when the introduction of the stomach tube is not desirable: 1. When a penetrating ulcer is present, the gagging and vomiting occasionally produced by the introduction of the tube may produce a perforation. When an associated malignancy is suspected, one may nevertheless wish to know whether free hydrochloric acid is present or not. 2. In marked asthenia, or when a cardiac complication is present, as well as in the highly neurotic type of individual, the introduction of the tube may be considered undesirable.

In order to avoid the use of the tube, in those cases in which its use is contraindicated or undesirable, I have employed the following simple direct method for the qualitative determination of free hydrochloric acid. I employ the small transparent, indigestible celluloid capsule (size 0 or 00), as previously described.<sup>1</sup> These capsules may be obtained from the Collapsule Company, 122 Hudson Street, New York. A string about 30 inches long is attached to one end. Within the capsule is placed a small strip of Congo red paper. The capsule is then closed. Holes for the communication of fluid are then made by passing a moderately heated hairpin through the coacting surfaces. This small capsule is swallowed for a distance of about 24 inches from the teeth. This will carry the celluloid capsule well within the gastric contents. After several minutes, the capsule is removed. The contained Congo red paper will have turned blue, in the presence of free hydrochloric acid.

With a minimum of discomfort to the patient, this simple intragastric, celluloid capsule method enables us to obtain evidence of real practical value.

1 West Eighty-Fifth Street.

## ATRESIA OF THE NIPPLES

O. B. SHEETS, M.D., CARTHAGE, S. D.

I have been unable to find any reference in literature to congenital occlusion of the lacteal openings, and therefore report a case in a primipara, aged 33, whose breasts and nipples showed no apparent abnormality.

Mrs. T. W. gave birth to a strong, vigorous boy of 8 pounds (3.6 kg.). The puerperium, as the labor, was uneventful except at the beginning of the third day, when she began to complain of her breasts. Examination disclosed them to be tender to touch, and moderately engorged. The pulse and temperature were normal. At this time the baby became fussy, and at feeding intervals would nurse ravenously with no apparent satisfaction. On the fourth day the mother complained bitterly at these nursing periods, and a second examination revealed the breasts to be very large, tense and painful. There was no local heat or infiltration. The temperature remained normal; the pulse became slightly accelerated. The condition being one of extreme engorgement, effort was made to relieve the breasts, first by expression, then by pumping, with the rubber bulb and the vacuum pump, breast pumps, and finally by having the husband suckle the breasts. None of these methods gave any lacteal secretion. As the trouble seemed to be wholly with the nipples, the breasts were punctured under surgical precautions through the nipples with a 28 gage hypodermic needle on an aspirator, and a quantity of milk was secured. Before the breasts were emptied, two more

openings were made, or three through each nipple, each being located with a staining agent. With the third puncture the breast was partially relieved, and the baby applied, with apparent satisfaction to himself and alleviation to the mother. Subsequently these apertures were probed with a No. 1 Bowman probe previous to each nursing for the first thirty-six hours; then less often, with a gradual increase in the size of the probe up to a No. 6 Bowman, thereby securing free lacteal orifices by the end of the fifth day of treatment.

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*Special Article*

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THE CARE AND FEEDING OF  
INFANTS*(Continued from page 475)*

[NOTE.—This is the eighth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

## GOAT'S MILK

Goat's milk is pure white, without especially pronounced odor or taste. There may be a peculiar "goaty" taste and unpleasant odor to the milk, but this can be entirely avoided if the milk is properly produced and handled, that is, by preventing manurial pollution, by keeping male goats out of and away from the stable in which the milking is done, and by taking precautions to keep the udder clean.

There is no essential chemical difference between the constitution of goat's milk casein and that of cow's milk.<sup>19</sup> The casein coagulum forms a more compact, firm mass than does that of the bovine.

Because of the similar chemical composition, goat's milk may be modified, like cow's milk, for infant feeding.<sup>20</sup> The protein content is considerably higher than in human milk, the sugar considerably less. The fat varies from 2.5 to 7.5 per cent.,<sup>21</sup> generally a little higher than that in cow's milk. The butter fat is white, there being a minimum of pigment.<sup>22</sup> The fat rather closely resembles the fat in human milk. The fat globules are relatively small, in very fine droplets,<sup>23</sup> and of uniform size. Ninety per cent. of the fat globules of cow's milk are over 4 microns in diameter; in goat's milk only about 10 per cent. are over 4 microns, and often 50 per cent. are under 2 microns.

The fat globules rise slowly, and in most cases no cream layer is formed. The cream is separated with difficulty by centrifuging,<sup>24</sup> but may be thoroughly separated in a cream separator. Goat's milk fat is richer in insoluble volatile acids than cow's milk fat; but, on the whole, there is very little difference when the chemical composition of the two fats is compared.<sup>25</sup>

In regard to the salt content, goat's milk differs<sup>26</sup> from cow's in containing tricalcium phosphate, dimagnesium and trimagnesium phosphate, monopotassium phosphate, and no monomagnesium or dipotassium phosphate. Human milk contains no insoluble phosphates. Goat's and cow's milk contain more phosphorus

19. Calvin, J. K.: Arch. Pediat. **38**: 584 (Sept.) 1921.

20. Griffith: Diseases of Infancy and Childhood **1**: 109, 1919.

21. Vieth: Milchztg. **14**: 449, 1885.

22. Schaffer: Schweiz. Wchnschr. f. Pharm. **31**: 58.

23. Barbellion: Verhandl. f. Kinderh. **13**, 1900.

24. Heineman, P. G.: Milk, Philadelphia, W. B. Saunders Company, 1920.

25. Solberg: Jahrb. f. Thierchem. **25**: 214.

26. Bosworth and Van Slyke: J. Biol. Chem. **24**: 173, 177 (March) 1916.

1. Buckstein, Jacob: Direct Determination of Lipase Within the Small Intestine, J. A. M. A. **79**: 1766-1767 (Nov. 18) 1922.



than human milk. There are more chlorids in goat's than in human or in cow's milk. The different salts appear to be greatest in number in goat's and least in human milk. McLean<sup>27</sup> asserts that goat's milk contains more iron than cow's milk.

*Yield.*—In proportion to its body weight, the goat produces about twice as much milk as the cow. The goat may yield from ten to twelve or even fifteen times its body weight in milk yearly, while a cow yields five or six times its weight.<sup>28</sup> By good feeding, 800 kg. or more (from 600 to 1,100 liters) of milk may be obtained in a year. A year-old goat will produce from 300 to 700 liters a year.<sup>29</sup> Goats usually provide milk about six months out of a year, and a lactation period ranging from seven to ten months is considered very satisfactory. A good scrub or common goat will yield about 2 quarts (liters) of milk a day,<sup>30</sup> and a production of 3 quarts a day is considered excellent. However, a good grade Toggenburg will produce from 3 to 4 quarts, and some pure-bred Toggenburgs will run from 5 to 7 quarts a day.

If goat's milk is aseptically obtained, it is the most suitable substitute for breast milk, since it has not been exposed to the possibility of changes, has not lost its natural properties, and can be given raw.

Another advantage of goat's milk is that it cannot be skimmed, as the cream does not form a distinct layer.<sup>31</sup>

Goats are practically immune to tuberculosis.<sup>32</sup> Only from 0.4 to 0.6 per cent. of the goats in Prussia gave a positive reaction for tuberculosis.<sup>34</sup> The question of the transmission of a passive immunity to tuberculosis by the transfer of natural antibodies from goat's milk to very young infants, or from the use of this milk over a much longer period, is now being investigated. At present the results are incomplete.

From some very limited data it might appear that goat's milk is considerably higher in antiscorbutic properties than cow's milk. Moore states that six guinea-pigs weighing from 110 to 145 gm. each were fed on fresh goat's milk, one set for eighty days, a second for forty-four days. The animals developed normally with no clinical symptoms of scurvy, although similar experiments with cow's milk resulted in scurvy.

#### CERTIFIED MILK

The term "certified milk" should be limited to milk produced in accordance with the requirements of the American Association of Medical Milk Commissions.<sup>33</sup> The expressed desire of the dairyman to contract to produce clean milk is far from sufficient for public protection. Only by periodic inspection by representatives of the local authorities, such as city, state or special commissioners, can a supply of wholesome milk be continuously assured. Sanitary stables and proper handling of the cows, with milking into sterilized receptacles are prime essentials. The cows must be in good health, free from tuberculosis and other infectious diseases. All persons coming in contact with the milk must exercise scrupulous cleanliness and must be free from infections which might be conveyed to others through the milk. All of these precautions can be nullified by carelessness in handling the milk, either

at the farm, during transportation or in the home. Certified milk must have a minimum bacterial content, and should never be more than thirty-six hours old when delivered.

Certification must be denied all milks having, on repeated examination, a bacterial count exceeding 10,000 per cubic centimeter. Such examination should be made at least once a week. Of even greater importance than the number are the types of bacteria found in the milk. The milk from all sick cattle and those with open wounds must be excluded. Employees suffering from infectious diseases which may contaminate the milk must be quarantined, and if contagious diseases occur on the premises of a certified dairy, the customers should be notified so that the milk may be sterilized in the home if the commission shall deem it wise to allow the milk to be delivered. In case of doubt, the dairy should be temporarily stopped from further deliveries. The milk must be cooled immediately after being secured, and maintained at a temperature between 35 and 40 F. until delivered.

Many good milks are spoiled on the door-step of the home between the time of delivery and of placing the milk in the icebox. All the utensils and vessels used for preparing the mixture must be clean and sterilized by boiling. As soon as the mixture is prepared, it should be put into the icebox again and kept there, preferably in individual bottles containing single feedings.

#### PASTEURIZED MILK

Pasteurization is accomplished by heating milk for a definite length of time, varying according to the temperature to which the milk is heated. The "holding method" whereby the milk is heated to not less than from 140 to 150 F., (60 to 65 C.) and is kept at this temperature for at least twenty minutes, is probably the most efficient for commercial purposes. Pasteurization in the home is well accomplished by one of several simple pasteurizers obtainable in the market. Similar results may be obtained by placing milk in the inner vessel of a double boiler with cold water in the outer vessel. The water is then heated to 160 F., and the milk is allowed to stand in its receptacle in a warm place for twenty minutes, following which it is rapidly cooled in a good icechest, where it should be kept until the time for reheating at feeding periods. If a similar method is desired for pasteurization in individual bottles, they should be placed in a pail, and water added to a level above the milk contained in the bottles, after which the water is heated to 160 F. The pail is then removed from the stove, covered, and kept in a warm place for one-half hour, after which the milk is to be rapidly cooled in a good icebox. It should be remembered that the bottles must be properly stoppered.

*Scalded Milk.*—The milk is heated in an open vessel until it bubbles around the edges and steams in the center. By this means it is heated to temperatures varying from 165 to 185 F. Scalding is not boiling.

*Boiled Milk.*—Milk may be boiled in either a single or a double boiler. With a single boiler, the milk is heated to the boiling point and allowed to boil from three to five minutes, with constant stirring. With a double boiler, the milk mixture in the inner and cold water in the outer vessel, the water is brought to the boiling point and kept boiling for from six to eight minutes; the whole process requires from ten to twenty minutes. Following the heating, cold water should be substituted in the outer vessel, and should be renewed several times until the milk cools. The milk is then

27. McLean: *Ztschr. f. Kinderh.*, Orig. 4: 168, 1912.

28. Fleischman: *Lehrbuch der Milchwirtschaft* 2: 65, 1898.

29. Kohlschmidt: *Jahrb. f. Thierchem.* 30: 254, 1901.

30. Rosenau: *The Milk Question*, New York, Houghton, Mifflin Company, 1912.

31. Kochen: *Steinegger, Milchztg.* 27: 356, 1898.

32. Richter: *Berl. klin. Wchnschr.*, 1888, No. 18.

33. The standards are given in the literature of the American Association of Medical Milk Commissions.



put in small sterilized bottles for individual feedings, or in one large bottle, capped, and placed on ice. While milk heated in a double boiler forms a much finer and softer curd than that of raw milk, it is not so fine as the milk boiled directly over the flame. It does, however, answer the needs in most cases, and, because of the simplicity of the method, is preferable.

#### RAW MILK VERSUS HEATED MILK

Whatever opinion one may have as to the advisability of recommending heated milk rather than raw milk for infant feeding as a general practice, it must be recognized that the earlier teaching in America concerning raw milk feeding led to the production of certified milk, with a resulting decrease in infant mortality. However, it should be emphasized that any method of food preparation which may tend toward an erroneous feeling of security is to be avoided. This applies particularly to milk production, as it is obvious that unclean milk cannot be considered a safe food for infants, even though it is pasteurized or boiled.

*Raw Milk.*—In large communities, certified milk from properly inspected dairies is the only milk which may be fed raw with any feeling of safety. During the warm months, even certified milk should be pasteurized or boiled in the home. In small communities, when the milk has been produced under sanitary conditions and reaches the home a few hours after milking, it may be safely used. When there is any doubt as to the quality of the milk, it should be heated.

#### PASTEURIZATION VERSUS BOILING

The ardent advocates of pasteurization claim that it is essentially a raw milk, so far as concerns its physiologic properties. Our experimental studies have shown that when milk is allowed to stand for some time after pasteurization, even though the vitamins are not completely destroyed, its antiscorbutic value is less than that of fresh raw milk. Therefore the relation of the time of pasteurization to the hour of feeding is important. Proper pasteurization destroys most organisms except the spore bearers. Fortunately, this includes the majority of the ordinary pathogenic bacteria. One disadvantage is that most of the lactic acid-producing bacteria are destroyed, and, therefore, the milk fails to sour, or sours less readily than unheated milk. This may give the mother a false feeling of security. In most instances, however, some of the lactic acid-producing organisms, having a high thermal death point, survive the heating and thereby lead to souring in old milk. While commercial pasteurization, therefore, has its disadvantages, on the whole its use has accomplished much in the lowering of infant mortality.

*Boiling in the Home.*—This has the great advantage over commercial pasteurization in that if the raw milk has soured before it reaches the home, the housewife can readily detect it. However, it is to be remembered that many pathogenic organisms may develop in milk without giving any evidence of their presence; and, while the organisms themselves are in most instances destroyed by boiling, their toxic products are not thus removed.

The small flocculent curd of boiled milk is more easily digested than the large, tough, casein curds of raw milk. This is of distinct advantage in indigestion and diarrhea and in atrophy, as larger amounts of food and a more highly concentrated mixture can be administered. Boiling, therefore, effectually disposes of the majority of bacteriologic problems, and is an excellent

casein modifier. While some of the lactalbumin is coagulated, small amounts of the sugar are caramelized, and some cream and salts are lost in the scum the advantages of this method outweighs its shortcomings.

In feeding boiled milk to infants, the danger of the development of rickets and scurvy can be positively obviated by the early addition of cod liver oil and orange juice to the diet. A tendency to constipation develops, owing to the more complete digestion of the fine curds in the small intestine and the absence of the large, hard protein curd seen with raw milk feedings; but this can usually be counteracted by adding carbohydrates to the mixture. *Duly considering all these facts, we believe that whenever there is any doubt as to the quality of the milk supply, the method of choice is boiling in the home, preferably by the double boiler. This should also apply to the reboiling of pasteurized milk whenever doubt exists as to its quality.*

#### FROZEN MILK

Vomiting and not infrequently diarrhea follow the feeding of milk that has been frozen. So far as possible, it is better to avoid the use of milk of this type. As this is not always possible, such milk should be boiled before being used in the feeding mixture. In most instances, the changes are in all probability physical, for in the freezing of the water the emulsion breaks and the fat becomes separated. When the milk is thawed, the fat globules coalesce and form a thick layer of butter fat which may cause a gastric and intestinal upset. Milk that has been frozen is less likely to show changes in the fat emulsion if the process of thawing goes on slowly in a cool room.

Pennington<sup>34</sup> and her collaborators also found that changes occurred in the protein of milk that was held for a considerable period at a temperature of 0 C. These changes resulted in proteolysis of the casein and of the lactalbumin.

(To be continued)

## New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

**DIPHTHERIA TOXIN-ANTITOXIN MIXTURE** (See New and Nonofficial Remedies, 1922, p. 282).

Eli Lilly & Company, Indianapolis.

*Diphtheria Toxin-Antitoxin Mixture-Lilly.*—Each cubic centimeter constitutes a single human dose containing three L + doses prepared in accordance with the requirements of the U. S. Public Health Service. Marketed in packages of three vials, sufficient for one immunizing treatment, each vial containing 1 Cc. of the toxin-antitoxin mixture.

**DIPHTHERIA IMMUNITY TEST (SCHICK TEST)** (See New and Nonofficial Remedies, 1922, p. 320).

Eli Lilly & Company, Indianapolis.

*Schick Test.*—Marketed in packages containing one vial of diphtheria toxin sufficient for ten tests and a vial filled with sterile physiological solution of sodium chloride, and in packages of ten vials (hospital size) containing toxin sufficient for 100 tests and ten vials filled with sterile physiological solution of sodium chloride. Each dose consists of approximately 0.001 Cc. of toxin (0.2 Cc. of the diluted toxin) which is equivalent to 1/40 of a minimum lethal dose for a guinea-pig of 250 Gm. weight. As a means of control, the Schick test control, representing diphtheria toxin of the same lot heated sufficiently to destroy the specific exotoxins, is supplied.

34. Pennington, Hepburn, Witner, Stafford and Burrell: J. Biol. Chem. 16: 331, 1913.



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SATURDAY, FEBRUARY 24, 1923

## THE ACTION OF HYPERTONIC SALT SOLUTION

Human curiosity demands an explanation not only of the customary manifestations of nature but also of the phenomena that can be brought about by artificial means in an empiric way. In medicine, this scientific inquisitiveness is widespread and eminently desirable. Few physicians are content to carry out a therapeutic procedure that is traditionally employed in practice year after year without giving occasional thought to its rationale. With the knowledge of how to secure a result comes the desire to know what causes it and why. A number of American clinicians, impressed by Weed and McKibben's<sup>1</sup> demonstration that the intravenous administration of hypertonic salt solution to animals was attended by a decrease in the size of the brain and a fall in cerebrospinal pressure, have attempted to apply it to clinical practice.<sup>2</sup> The impression has been created that the effects are often sufficiently satisfactory to warrant the employment of the procedure as a therapeutic measure. It is said that as the result of such injections cerebral hernias often disappeared or were much diminished, the swollen brain decreased in size so that operations on it could be performed more easily, and the elevated cerebrospinal pressure of patients with brain tumor was usually reduced promptly. A recent study of the effect of hypertonic salt solution, administered intravenously to a number of patients with brain tumor who had an increased cerebrospinal pressure, shows that symptomatic improvement occurred in all. This was mainly manifested in the relief of headache and stupor. No harmful effects were observed. It appears likely that the fall in cerebrospinal pressure that follows the intravenous or oral administration of hypertonic salt solution is a volume change dependent on the egress of fluid from the brain to the blood stream.

1. Weed, L. H., and McKibben, P. S.: *Am. J. Physiol* **48**: 512 (May) 1919.

2. Cushing, Harvey, and Foley, F. B.: *Proc. Soc. Exper. Biol. & Med.* **17**: 217, 1920. Sachs, Ernest, and Belcher, G. W.: *The Use of Saturated Salt Solution Intravenously During Intracranial Operations*, *J. A. M. A.* **75**: 667 (Sept. 4) 1920.

The immediate effect of the introduction of hypertonic saline solutions, for example, 100 c.c. of 15 per cent. sodium chlorid solution into the circulation, is the production of a hydremic plethora because of the withdrawal of water from the tissues, the brain being only one of the sites of this diffusion. In a study made at the Massachusetts General Hospital, Barach, Mason and Jones<sup>3</sup> have fixed the responsibility for this on the increased chlorids brought by injection into the blood. The body at once responds, in an effort to render the plasma isotonic again, by pouring water into the blood stream until the osmotic equilibrium is attained. The increase in blood volume usually parallels the blood chlorid concentration. The physics of the reaction is what might be anticipated. In the Boston cases the red corpuscles showed no impairment due to the introduction of hypertonic sodium chlorid solution. In one case there was a temporary lessening of fragility. The oxygen-carrying power of the hemoglobin was intact. There was no free hemoglobin spectroscopically, and no increase in bile pigment. The story is another instance of the benevolent devices of physicochemical regulation in the body.

## ANEMIA IN CHRONIC NEPHRITIS

Most physicians think of chronic nephritis as essentially a kidney disease, which, in the narrower sense, it is. The prominent symptoms are those immediately attributable to the profound disturbance in the renal functions. The changes in the composition and character of the urine cannot fail to direct attention specifically and emphatically to the kidneys. Structural elements of various sorts are usually present in the secretion of these organs, and the normal constituents of the urine are likely to be diminished in quantity. Retention is a common manifestation. What the etiologic factors may be has been the subject of considerable divergence of opinion. The greatest emphasis has probably been placed on toxic agents, such as poisons which bring about a slow chronic intoxication, or products of endogenous origin that may work quite as insidiously and dangerously. Toxins derived from bacterial sources in the organism have been accused, and the severe reactions from exposure to unfavorable environments have not been overlooked in the explanations recorded.<sup>4</sup>

Brown and Roth<sup>5</sup> recently emphasized that chronic nephritis should be viewed from the standpoint of a constitutional disease. Renal injury is only one phase of this widespread toxic damage. The retinal, cardiac and vascular tissues, and hematopoietic system are also definitely injured. They reached this conclusion from

3. Barach, A. L.; Mason, William, and Jones, B. P.: *The Effect of the Administration of Hypertonic Salt Solution on the Blood Volume and Certain Related Blood Constituents*, *Arch. Int. Med.* **30**: 668 (Nov.) 1922.

4. A discussion of the subject is given by Strauss, H.: *Die Nephritiden*, Berlin, Urban and Schwarzenberg, 1920.

5. Brown, G. E., and Roth, G. M.: *The Anemia of Chronic Nephritis*, *Arch. Int. Med.* **30**: 817 (Dec.) 1922.



a study of the anemia so commonly associated with the disease. According to these investigations of cases in which no blood loss had occurred, excessive hemolysis could not be called on to explain the lack of red cells. The probability thus remains that the anemia attending the renal insufficiency is due to decreased formation of erythrocytes incident to damaged function of the bone marrow. The latter is disturbed in common with other tissues.

As both Brown and Roth view it, accumulating evidence in chronic nephritis points to primary vascular injury of widespread, not merely renal, distribution; and the bone marrow tissues reveal secondary effects of vascular disease. The unknown agent causing renal insufficiency, they add, is probably the etiologic factor in the disturbance of hematopoiesis; in other words, a common cause is present. After repeated injuries to the bone marrow, anemia becomes more severe and takes on certain characteristics of a hypoplastic or aplastic type of anemia. The injury to the bone marrow concerns only its erythrogenic function. Leukocytogenesis is not involved. It is further pointed out that the latency in the development of the anemia can be explained on the basis of its bone marrow origin. The circulating erythrocytes are not destroyed. Excessive hemolysis is not present. The normal replacement of erythrocytes is slower after injury to the bone marrow. As the circulating cells die and replacement is slow, a lapse of time is natural before anemia is evident.

#### WAR AND ANATOMY

The Iliad and the Odyssey have recently been used as an index of anatomic knowledge in Homeric times. Körner<sup>1</sup> has found 147 descriptions of war wounds in the classic tale of high endeavor and protracted suffering resulting from the celebrated triangle that brought the hosts of Agamemnon before the walls of Troy. Special emphasis is laid on perforating wounds, in which the points of entrance or exit are given and intervening injured organs named; in one case, for example, a fleeing ex-combatant intercepted a spear in the upper gluteal region which made its reappearance below "the bone," presumably the os pubis, passing through the bladder. In another instance, a braver but less wise warrior, indiscreet enough to oppose the unmasked Odysseus, received the long suffering one's winged shaft in the breast, the arrow sticking in his liver, a localization signifying to Körner that the epic bard was a good enough topographic anatomist to place the dome of the liver some distance above the costal margin. From such references, Körner feels justified in concluding that Homer's knowledge of anatomy rested on a surer foundation than analogy with slaughtered animals and haphazard observations made in the treatment of war wounds, for spear laparotomies and ax amputa-

tions do not afford a sufficiently clean and wide field for accurate inspection. He believes, then, that Homer's information must have been based on deliberate dissection by physicians of the day, perhaps by the field surgeons. Fuld<sup>2</sup> has opposed Körner's conclusion, under the title "Prähomerische Sektionen?", confident that the human sacrifices of that barbarous time, and the not far distant cannibalism, furnished foundation enough for the meager Homeric details.

To a nonpartisan reader lenient to the vagaries of poetic license, Körner's anxious analysis of certain supposedly erroneous anatomic concepts of the Greek poet seems superfluous. He does not need to be convinced, by a passage locating the godlike Sarpedon's heart correctly in the pericardial sac, that the Achean confidant of the muse had no intention of situating the liver there likewise in a passage that seems to read to the contrary unless translated with great care. He will be inclined to believe that most of the grosser relations of the human viscera were known to the layman at that remote period somewhat as they are today, and without organized dissecting courses or sub rosa necropsies in a period of priestly control and pious regard for the dead. To this knowledge many sources contributed. And, after all, not the least of these was battle-field experience. For whatever may have been the effect of theological proscription in checking the mutilation of his fellow citizen in times of peace, no religious considerations restrained the Homeric hero from making mince meat of his enemy in the white heat of passion, if he was able and so desired. Witness the fate of the unfortunate goat-keeper Melanthius, who suffered the loss of his nose, ears, hands, feet and "parts of shame" following his careless underestimation of Odysseus' prowess in the battle in Penelope's hall. Many another hexametered catalogue of horrors could be cited.

Although a more generous spirit regarding the dissemination of knowledge may prevail today, it is unlikely that curiosity concerning anything so close to a savage's happiness as his own body could remain restrained through the long centuries before the Renaissance swept aside fear and hide-bound convention, and fired the intellectuals to blaze new trails. Long before that, when an extensive anatomic material was available, some one must have looked at it, and it is not to be doubted that he told a few friends what he found. But with a limited comparative anatomy, in the absence of developed embryology and physiology, knowledge based on understanding was impossible, and anatomy could make but feeble strides. It remained a mere catalogue, and must have been of about the same interest. One cannot help thinking of instances of modern seizure of opportunity. For instance, there is on exhibition a product of the war of our civilization, where culture offers no bar to minute investigation, and where a dozen related sciences contribute to mutual understanding. In Aschoff's Institute of Pathology in Freiburg, in the

1. Körner: München. med. Wchnschr. 69: 1484 (Oct. 20) 1922.

2. Fuld: München. med. Wchnschr. 69: 1731 (Dec. 15) 1922.



same room holding the collection of war injuries of 1870, there is a large exhibit of chests of tuberculous soldiers, freed from overlying soft parts, with the anterior half cut away, and with the roentgenogram, taken a few hours before death, hanging over the specimen, uniting clinical experience with pathologic detail. Surely here is method, backed by a wealth of scientific knowledge. But it is doubtful whether the spirit of curiosity behind it exceeded that of the ill-equipped ancients, whose slow but effective search for anatomic accuracy was long past its crude beginnings even in that far remote time when Abner was returned to Hebron, and Joab took him aside to speak with him quietly and smote him in the fifth intercostal space.

### "FITNESS" IN DISEASE

The Census Bureau's summary of the annual report on mortality statistics reveals that 1,142,558 deaths occurred in 1920 within the death registration area of the continental United States, or among 82 per cent. of its population. For the entire group of states it may therefore be estimated that 1,400,000 persons die each year. Not all of these are aged; discussions of national vitality therefore stress the great importance of saving some of the lives lost. It has been alleged that this involves a preventability of 42 per cent. The health conservation programs which are so earnestly concerned with the prevention of untimely death often fail to take into account the fact that national efficiency is not necessarily coincident with national "vitality." Many lives may be prolonged through a period of economic uselessness.

The question under discussion is one that frequently concerns the physician. He is often called on to evaluate the physical fitness of a patient; it may become a necessity in order to assign the latter to some appropriate form of activity or to protect him from strains that would be detrimental to health. Finding the right job—the proper place in society—for a person under par is likely to become one of the numerous problems that measure a physician's service and worth in the family and in the community. It is obvious that if the strength or endurance of any worker consistently falls much below the standard for the task to which he has been assigned, the outcome will be unfortunate; on the other hand, as Lee<sup>1</sup> pointed out in a war-time message, if his strength is markedly greater than that of his task, he is not economically placed. Vocational fitness is always a desideratum.

What is obviously needed is a suitable measure of deteriorated functions. Objective proof is usually far better than the most judicious impressions of a physician or friend. Unusual interest attaches, therefore, to psychologic tests that were applied to a group of Joslin's

diabetic patients in Boston by Miles and Root<sup>2</sup> of the Nutrition Laboratory of the Carnegie Institution of Washington. The results showed objective justification for the complaints of loss of memory and of ability to concentrate attention mentioned frequently by persons suffering from diabetes. The old and well established mental associations, such as are involved in doing simple addition of numbers, seem little influenced. But new tasks which demand immediate retention and recall, with little reference to past experience, are the ones which suffer and at which the patient finds himself below his former ability. There appears to be no marked increase in the errors the diabetic makes in his work as compared with the normal person, but rather a loss of speed, a decrease in the span, or amount that can be grasped at one time. That the change is chiefly in the nature of a retardation of the neuromuscular processes is indicated by those tests which more especially involve the muscles. In these, Miles and Root have found that the eye requires more time to turn and to react; that the fingers cannot make as many taps in a given interval, and that the hand cannot so accurately pursue a moving object. To what extent this retardation may be due to discouragement or mental depression, on the one hand, or specifically to the diabetes, as such, on the other, it is impossible to state. Miles and Root add that there is clear evidence that, with treatment, most of the persons tested showed rapid improvement on the psychologic side. The conclusions of these investigators will awaken widespread interest. They say that while memory span and muscle movement speed are of fundamental importance for the activities of life, there is a rather wide margin, and undoubtedly many persons with diabetes will be able to do as much light physical or mental work as is actually done by many normal men and women. In other words, "while the diabetic is not at all fitted for racing in top notch competition, still he is fairly well off for living comfortably and usefully." It will be of great value to secure additional studies of "fitness" on patients with other diseases.

### INTESTINAL ANTISEPSIS

There is a widespread belief that, through bacterial changes in foods present within the alimentary tract, substances can arise that possess a harmfulness or toxicity of varying intensity for the organism. Clinical observations and personal experience serve to fortify this prevalent view, even though they cannot be said to constitute valid scientific evidence. Excessive intestinal putrefaction or the retention of the intestinal contents is frequently responsible for upsets in health varying from slight malaise to profound disturbance of well-being. Wells<sup>3</sup> has summarized the situation cogently

2. Miles, W. R., and Root, H. F.: Psychologic Tests Applied to Diabetic Patients, *Arch. Int. Med.* **30**: 767 (Dec.) 1922.

3. Wells, H. G.: *Chemical Pathology*, Philadelphia, W. B. Saunders Company, 1920, p. 593.

1. Lee, F. S.: *The Human Machine*, New York, Longmans, Green & Co., 1918.



by remarking that few of the known products of gastrointestinal putrefaction are toxic to any considerable degree, and these are probably produced in too small quantities to cause any appreciable effect, especially in view of the detoxicating and eliminatory powers of the liver, kidney and other organs. Nevertheless, the names of the diseases that have been attributed to intestinal toxemia are legion.<sup>4</sup> Autointoxication, whatever it may mean, still finds advocates of its etiologic importance in human disorders.

One consequence of this large and seemingly justified interest in the production of poisonous bacterial products in the bowel and their subsequent absorption leading to harm has been the effort to prevent their formation. This led long ago to a variety of efforts to administer so-called intestinal antiseptics. The problem was reviewed in *THE JOURNAL* several years ago by Harris,<sup>5</sup> working under a grant made by the Therapeutic Research Committee of the Council on Pharmacy and Chemistry. As is pointed out in the *Pharmacology of Useful Drugs*,<sup>6</sup> there can be no doubt that the nature and character of the infection, its location in the intestinal tract, and the condition of the intestinal mucous membrane and its secretions, as well as the food residues in the bowel, must all influence the results of any efforts at intestinal antisepsis. It is not certain that absolute asepsis of the intestine is desirable, though it is unquestionably desirable to restrain the growth of putrefactive and other pathologic organisms. Some of the reasons for the popular use of certain purges, notably calomel, are their alleged action as an intestinal antiseptic. Fantus<sup>7</sup> reminds us that calomel is now generally admitted not to be an intestinal disinfectant, nor has its action as an intestinal antiseptic been definitely proved. Whatever benefit is derived from the use of the drug is doubtless due to the resultant purgation rather than to any direct effect on the growth of microorganisms in the bowel.

Recently a group of Chicago investigators<sup>8</sup> has put the possibility of securing intestinal antisepsis by the use of drugs to a severe test under conditions readily controlled and in which any effect would be readily manifest. The procedure was based on the fact that death from intestinal obstruction is due to a toxemia. It has been demonstrated<sup>9</sup> that the toxic materials are produced in the intestinal tract by the action of the normal intestinal bacteria on the intestinal contents. The symptoms can be reproduced in dogs by the production of closed isolated segments of various parts of the small

intestine by surgical operations. When this is done, a toxemia similar to that in acute obstruction occurs; and the source of the toxemia is the closed segment, since if this is removed the symptoms disappear. The proteolytic group of intestinal bacteria are the principal agents in the manufacture of the poisons absorbed from such closed loops of intestine. If these are rendered sterile by prolonged drainage into the abdominal cavity, no toxemia can occur.

As the production of these closed segments of the intestine is a readily available method of inducing in the experimental animal a toxemia definitely due to the activity of the intestinal bacteria, Dragstedt and Nisbet<sup>8</sup> have attempted to sterilize the intestinal mucosa by the direct application of chemical antiseptics to isolated loops or short segments of the intestine in animals. Despite the fact that this procedure offers a far more direct opportunity for germicidal effects to manifest themselves than the usual oral administration could possibly permit, sterilization was in no case secured. Many of the usual antiseptics of a strength thought to be sufficient to sterilize a surgeon's hands were used without regard for their possible toxicity, since they could be immediately removed. Furthermore, they were applied directly to the segment of intestine in their full strength undiluted or mixed with the gastric or intestinal content. In spite of these most favorable conditions, it was not possible to prevent the intestinal toxemia associated with stasis. At present, therefore, no experimental justification can be cited for the clinical use of antiseptics intended to produce intestinal antisepsis by direct action on the microorganisms that inhabit the gastro-enteric tract.

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## Current Comment

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### THE MAMMARY GLAND AS AN EXCRETORY ORGAN

Milk is so unique in its composition, and the specific character of its constituents is so largely independent of direct dietary influences, that it is looked on for the most part as an unusual synthetic product. From this standpoint, therefore, the mammary gland in which milk is elaborated has come to be regarded as pre-eminently a secretory structure characterized by its constructive or anabolic capacities. Nevertheless, the constituents of milk are by no means entirely confined to the group of products manufactured *de novo* in the mammary gland. Milk contains various substances present as such in the blood and other body fluids. Among these are the so-called nonprotein nitrogenous extractives: amino-acids, urea, creatin, creatinin and uric acid. It has been shown by Denis, Talbot and Minot, for example, that in many cases the figures for the content of the nonprotein substances are virtually the same in the milk as in the blood. Taylor<sup>1</sup> of

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1. Taylor, W.: Note on the Non-Protein Nitrogen in Goat's Milk, *Biochem. J.* **16**: 611, 1922.

4. Weintraud, W.: *Ergebn. d. allg. Path. u. path. Anat.* **4**: 17, 1897.

5. Harris, N. M.: *Intestinal Antisepsis*, *J. A. M. A.* **59**: 1344 (Oct. 12) 1912.

6. Hatcher, R. A., and Wilbert, M. I.: *Pharmacology of Useful Drugs*, Chicago, American Medical Association, 1915, p. 153.

7. Fantus, Bernard: *Useful Cathartics*, Chicago, American Medical Association, p. 97.

8. Dragstedt, L. R.; Dragstedt, C. A., and Nisbet, O. M.: *Intestinal Antisepsis: Effect of Antiseptics on a Type of Experimental Intestinal Toxemia*, *J. Lab. & Clin. Med.* **8**: 190 (Dec.) 1922.

9. Dragstedt, L. R.; Moorhead, J. J., and Bureky, F. W.: *J. Exper. Med.* **25**: 421 (March) 1917. Dragstedt, L. R.; Dragstedt, C. A.; McClintock, J. T., and Chase, C. S.: *J. Exper. Med.* **30**: 109 (Aug.) 1919.



Aberdeen has now presented additional evidence that in a lactating animal there is a correlation between the daily output of nitrogen in the urine and the percentage of nonprotein nitrogen in the milk, both apparently being determined by the amount of protein in the food. The concentration of nonprotein nitrogenous catabolites in the blood seems to determine both the amount excreted in the urine and the percentage present in the milk. The mammary gland acts to some extent as an excretory organ, waste nonprotein nitrogenous substances filtering through from the blood to the milk. The percentage in which these are found in milk seems to be determined by the degree of concentration in the blood of the end-products of protein metabolism. When the function of the mammary gland is viewed from this standpoint as well as from an appreciation of its synthetic capacities, it is not difficult to understand why milk should occasionally become a vehicle of substances that are undesirable as a dietary ingredient.

### MALARIA AND SUNLIGHT

Sporadic cases of malaria, as was observed long ago, occur in the spring long before the breeding season of the anopheles mosquito. After it became known that malaria parasites could pass the winter in the human blood stream, these cases were recognized as relapses from acute attacks of the previous summer. Why relapse appears with the advent of spring has not been determined. Ross believed that external heat encouraged the parasites to multiply, and that when about fifty per cubic millimeter accumulated in the blood the first definite symptoms of illness were noted. He<sup>1</sup> observed in 1898 that the parasites in birds diminished when they were taken to the cool climate of the Himalayas, and that they increased again when brought back to Calcutta. Lenz<sup>2</sup> and Schaedel,<sup>3</sup> accepting the parthenogenic theory of reproduction of Schaudinn, believe that sunlight causes the relapse and that its increased intensity stimulates the gametocytes to start the asexual cycle. On a similar basis, Reinhard<sup>4</sup> undertook to cure malaria by exposing patients to ultraviolet rays with the idea of causing the parasites to come out into the peripheral circulation where quinin could destroy them; in 63 per cent. of thirty-eight cases so treated, asexual forms of the malaria parasites appeared in the blood, in one half of them within seven days. In his patients not exposed to the rays, spontaneous relapse took place in about three and a half weeks. There is therefore clinical evidence that relapse in malaria is associated with exposure to sunlight, and that ultraviolet rays are an effective agent in producing it. Whitmore has undertaken to study the action of light in malaria in birds. It is planned to determine the dose of unfiltered light, and what part of the spectrum will cause a relapse; then to work back the dosage—he is working

with a quartz mercury vapor lamp—to an equivalent dosage of sunlight. The results thus far indicate that two hours' exposure to the lamp at a distance of 24 inches with the meter reading at 75 and the birds' feathers intact will cause relapse. Relapse will occur in fifteen minutes when the unfiltered light is directed to an area from which the feathers have been removed. Certainly these experiments may lead to great improvement in the facility with which this disease may be diagnosed.

### THE VELOCITY OF THE PULSE WAVE

The study of the dynamics of the circulation has been accelerated in recent years as the result of numerous innovations in technic and of a greater inherent interest in the subject following the development of the clinical measurement of blood pressure and the evolution of electrocardiography. The methods employed in the days of pioneers like Chauveau and Marey have given way in part to procedures of greater accuracy and delicacy. Consequently, some of the so-called constants of the circulatory system have been redetermined, and the characteristics of its performance formulated more precisely than ever before. This is true of the velocity of the pulse wave, for example. It has customarily been estimated to vary somewhere between 6 and 9 meters a second for adults, the length of the wave being taken as about 5.6 meters. Bazett and Dreyer<sup>1</sup> of the University of Pennsylvania have lately concluded that the velocity of transmission of the pulse wave is much slower in the large vessels than in the smaller and more peripheral vessels. While a velocity of the pulse wave of about 7 meters a second is confirmed from a comparison of carotid and radial pulses, such a velocity is merely an average between a velocity of about 4 meters a second in the brachial and 8.5 meters a second or more between the elbow and the wrist. The velocity of transmission in the carotid, aorta and possibly the femoral artery is of about the same rate as that found for the brachial. The rate of transmission is much more variable in the more peripheral parts of the arterial system, and is in all probability much more dependent on local conditions of vasoconstriction or dilatation. It may be worth while recalling, further, that, in the light of the known facts, long before the pulse wave has disappeared at the beginning of the aorta it has reached the most distant peripheral vessels.

1. Bazett, H. C., and Dreyer, N. B.: Measurements of Pulse Wave Velocity, *Am. J. Physiol.* **63**:94 (Dec.) 1922.

**Educational Standards for Physiotherapists.**—The proper training of the physiotherapists of the future will have to be some two or three years of college education as a minimum, including biology, anatomy (including histology), physiology, bacteriology, chemistry and physics, so that we may be sure that they have sufficient knowledge of bacteriology, physiology, anatomy and other fundamentals. To this should be added one or more years of practical work in the hospital clinic with good instructors. All the necessary training in the technical procedures should be under the guidance of the medical profession. It would be a sad thing to banish the physiotherapist from the great medical centers where his influence and assistance are most needed.—R. L. Wilbur, *California State J. M.* **21**:25 (Jan.) 1923.

1. Ross, Ronald: *The Prevention of Malaria*, New York, E. P. Dutton & Co., 1910.

2. Lenz, F.: *Malariae rezidive und Sonnenlicht*, München. med. Wchnschr. **67**:697 (June 11) 1920.

3. Schaedel, A.: *Biologische Betrachtungen zur Frage der Malaria-rezidive und der Malariaverbreitung*, Biol. Centralbl. **38**:143, 1918.

4. Reinhard, P.: *Ueber Provokation latenter Malaria durch Bestrahlung mit ultraviolettem Licht*, München. med. Wchnschr. **64**:1193, 1917.

5. Whitmore, Eugene: *Action of Light in Relapse in Malaria*, *Am. J. Trop. Med.*, September, 1922.



## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**Personal.**—Dr. Hugh C. McRee, Decatur, has been appointed physician of Morgan County to succeed Dr. Burton F. Austin who resigned.—Dr. John L. Gallagher, Dora, has been appointed full-time health officer of Limestone County.—Capt. William M. Caffee, Manila, P. I., who has resigned his commission in the M. C., U. S. Army, will open an office in Birmingham.—Dr. Burton F. Austin, Decatur, was presented with a handsome gold watch and chain by members of the Morgan County Medical Society, February 1, on his retirement as county health officer. Dr. Austin succeeds Dr. Grote as health officer of Huntsville and of Madison County.

### COLORADO

**Society News.**—At the annual meeting of the Denver Tuberculosis Association, Dr. George Walter Holden, Denver, was elected president, and Dr. Margaret E. V. Fraser, Denver, secretary.—At the annual meeting of the Northeast Colorado Medical Society, at Sterling, in January, Dr. John W. Kinzie, Haxtum, was elected president, and Dr. Edward P. Hummell, Sterling, secretary-treasurer. Dr. John W. Ames, Denver, gave an address on "School Health Problems."—Dr. Thomas A. Davis, Portland, and Dr. Otis Orendorff, Canon City, were elected president and secretary-treasurer, respectively, of the Fremont County Medical Society at the annual meeting in Florence, January 22.

**Colorado State Board of Health.**—At the annual meeting of the state board of health in Denver, February 9, the following officers were elected for the ensuing year: president, Dr. George K. Olmsted, Denver; vice president, Dr. C. W. Compton, Pueblo, and secretary, Dr. Tracy R. Love, Denver. Dr. Margaret Ethel V. Fraser, Denver, Dr. Samuel R. McKelvey, Denver, and A. W. Scott, Fort Collins, have been appointed to fill vacancies on the state board of health.—It is reported that the Rockefeller Foundation has offered to aid the Colorado State Board of Health in its activities planned for the coming year, among which is the establishment of health units throughout the state, each to be provided with a full-time health officer.

### CONNECTICUT

**Professor Lambert to South America.**—Dr. Robert A. Lambert, assistant professor of pathology and bacteriology at Yale University Medical School, New Haven, since 1919, has resigned to accept the professorship in the department of pathology at the Faculdade de Medicina e Cirurgia de São Paulo, Brazil. Dr. Lambert recently made a survey of the medical schools of San Salvador, Guatemala and Nicaragua, to obtain accurate knowledge concerning the standards of medical education in Latin America.

### DISTRICT OF COLUMBIA

**Personal.**—P. A. Surg. Marion F. Haralson of the U. S. Public Health Service has been relieved from duty at Hamburg, Germany, and assigned to temporary duty at Havre, France, in place of Surg. Grover A. Kempf, who has been directed to proceed to London, England, to make investigations of health organization and administration in conjunction with the health section of the League of Nations.—Asst. Surg. Gen. Arthur M. Stimson, Washington, has been directed to proceed to London, England, for duty in the American consulate, relative to the issuance of American bills of health, and to make investigations of health organization and administration in conjunction with the health section of the League of Nations.

### GEORGIA

**Dr. Bassett Reappointed.**—Dr. Victor H. Bassett has been restored to the position of director of the hygienic laboratory of the board of sanitary commissioners, Savannah, and also made acting health officer during the reorganization of the city health department.

### IDAHO

**Personal.**—Dr. T. N. Braxtan, Boise, has been appointed county physician of Ada County; Dr. Thomas E. Mangum, Nampa, county physician of Canyon County, and Dr. Vonanda G. Logan, American Falls, county physician of Power County.—At the annual meeting of the Pocatello Medical Society, Drs. Casper W. Pond and William F. Howard were elected president and secretary-treasurer, respectively.

### ILLINOIS

**Society News.**—Dr. W. N. Peck of the Tri-State Medical Society has been advised that the medical department of the U. S. Army will be host at a luncheon at Washington, D. C., to about 250 members of the Tri-State society, who will compose the "clinic train" party that will visit the larger Eastern cities this spring for the purpose of attending clinics. A clinic will be given at the Walter Reed General Hospital for the party.

**Physicians Under Trial.**—Dr. Henry Lee Green, Quincy, convicted, Jan. 21, 1922, on a charge of violating the Harrison Narcotic Law, was fined \$1,000 and costs, February 5, at Springfield, by Judge FitzHenry, according to reports.—It is reported that Dr. Carl W. Kimery, Sullivan, was sentenced to thirty days in jail, by Judge Grider, February 1, when he pleaded guilty to violation of the Volstead Act.—Dr. Albert Willis, Christopher, was acquitted of the charge of causing the death of Miss Mary Shifflett of Leroy, it is reported.

**Personal.**—Dr. John J. Grant, Freeport, was recently elected president of the Grant County Medical Society.—Col. John L. Fryer, in charge of the sanatorium at Battle Mountain, S. D., has been appointed chief surgeon at the Danville National Soldiers' Home to succeed Major Edward N. Schillinger.—Dr. Arthur H. Curtis, Chicago, addressed the members of the Vermillion County Medical Society at Danville, February 6.—Dr. Guy G. Kilgour, Malden, has accepted the appointment of assistant superintendent of the State Hospital for the Insane at Anna.—Dr. Franklin A. Turner has been appointed director of hygiene of the Rockford public schools, to succeed Dr. Dudley W. Day, who resigned recently.—Dr. Arthur H. Gollmar, Kankakee, is the author of a play "The Mirror Behind the Bar" or "A Glandular Extract from the Common Law," which was produced before the Kankakee County Medical Society, recently.

### CHICAGO

**Antinarcotic Activities.**—The propaganda committee of the Chicago Medical Society, to whom the matter of relieving drug addicts was referred, has complied with the request of the national organization and compiled a speakers' list. Plans have also been formulated by which those persons addicted to drugs will be properly hospitalized and provided with medical attention. These plans will be announced later.

**Personal.**—Dr. T. Melville Hardie is a member of the Chicago Curling Club, which defeated the Royal Caledonian Curling Club of Scotland at the annual games held in Chicago, February 16.—A dinner was given in honor of Professor Schick of Vienna, Austria, February 21, at the Hamilton Club. Following the dinner, Professor Schick gave an address before the Chicago Medical Society on the "Prevention of Diphtheria."

### INDIANA

**Beardsley Bill Defeated.**—The state senate, February 8, failed to pass the Beardsley bill, which would commit Indiana to cooperation with the federal government under the Sheppard-Towner Maternity act.

**Tuberculosis Conference.**—The annual meeting of the Indiana Tuberculosis Association was held in Indianapolis, February 13-14, under the presidency of Dr. George T. McCoy, Columbus. Dr. Charles H. Good, president of the Indiana State Medical Association; Dr. J. S. Pritchard, Battle Creek, Mich., and Dr. R. H. Hayes, Chicago, gave addresses at the conference. Dr. E. Blanche Sterling, U. S. Public Health Service, Washington, D. C., addressed the closing session, February 14, on "School Health Supervision in Relation to Tuberculosis."

### IOWA

**Iowa Admitted to Registration Area.**—The registrar of vital statistics announces that Iowa now complies with the standard set by the Bureau of the Census for registration of deaths,



and has been admitted to the registration area of the United States. Iowa is not yet admitted to the registration area on births.

**Society News.**—The semiannual meeting of the Sioux Valley Medical Association was held at Sioux City, January 25-26, under the presidency of Dr. Cheney C. Gross, Yankton, S. D. The meeting was preceded by the tenth annual convention of the Sioux Valley Eye and Ear Academy (Iowa, Nebraska and South Dakota), January 24, held under the presidency of Dr. James M. Patton, Omaha. Among the speakers at both meetings were Drs. George F. Suker, Harry L. Pollock and Clifford G. Grulee of Chicago, and Dr. Martin H. Fisher of the University of Cincinnati.—The annual meeting of the Iowa Tuberculosis Association was held at Cedar Rapids, February 14-16, in conjunction with the Iowa Sanatorium Association, the U. S. Public Health Service, the state board of health, the state housing commission and the county medical societies of the fifth district. A health pageant was given by the children of the city.

#### KENTUCKY

**Personal.**—Dr. F. A. Jones, Paducah, was recently elected president of the McCracken County Medical Society.—Dr. Eugene C. Roemele, Frankfort, has been reelected health officer of Franklin County for two years.—Dr. William H. Coffman, Georgetown, was recently elected president of the Scott County Board of Health.—Dr. Frederick G. Speidel, Louisville, has been appointed physician for the Portland district, to succeed Dr. Louis W. Eckels, Jr.—Dr. G. W. White, Henderson, recently fractured both his wrists in a fall in a gymnasium.—Dr. Joshua W. Meshew, Barlow, is in the Riverside Hospital, Paducah, suffering from septicemia.—Dr. E. M. Ewers, formerly of Anchorage, now surgeon at the hospital at Muchan, China, is visiting in the United States.

#### LOUISIANA

**Radiologists Elect.**—The annual meeting of the Louisiana Radiological Society was held in New Orleans, January 13, under the presidency of Dr. Sidney C. Barrow, Shreveport. The following officers were elected for the ensuing year: president, Dr. Lucien A. Fortier, New Orleans; vice president, Dr. Clifford P. Rutledge, Shreveport, and secretary-treasurer, Dr. Harold G. F. Edwards, Lafayette.

**Personal.**—Dr. Laurence R. DeBuys, professor of pediatrics, Tulane University of Louisiana, New Orleans, has been elected a member of the board of directors of the American Child Health Association.—Dr. James M. Batchelor has been appointed chief surgeon and chairman of the medical advisory committee of the Presbyterian Hospital, New Orleans, of which Dr. John C. Barr was reelected president, and Dr. A. C. Browne, secretary.

#### MAINE

**Physician Loses Malpractice Suit.**—In the suit of Harold Fletcher against Dr. William C. Peters, Bangor, to recover \$10,000 for alleged malpractice, it is reported that on January 24, the jury returned a verdict of \$1,500 in favor of the plaintiff.

#### MARYLAND

**Epidemic (Lethargic) Encephalitis Prevalent.**—According to the director of the bureau of communicable diseases, Dr. John F. Hogan, Baltimore City Health Department, Baltimore is passing through a period of epidemic (lethargic) encephalitis. In studying the present outbreak, Dr. Hogan is making personal visits to patients at the request of attending physicians. Two physicians of the health department have been designated to investigate all cases that have been reported since January 1, in order to ascertain the actual number of patients suffering with the disease.

**Personal.**—Dr. Julius Friedenwald, Baltimore, was recently elected president of the Southern Gastro-Enterological Association, at the annual meeting in Chattanooga, Tenn.—Dr. Charles M. Byrnes, associate in clinical neurology at Johns Hopkins University, Baltimore, has been elected president of the Philadelphia Neurological Society.—Dr. George Edmund de Schweinitz, Philadelphia, President of the American Medical Association, spoke on "Vascular Changes in the Eye and Their Relationship to Constitutional Diseases" before 300 physicians and surgeons at the University of Maryland School of Medicine, February 15.—Dr. Howard Barker has been appointed medical officer in charge of U. S. Veterans' Hospital No. 56, Fort McHenry.

**Gift to the Johns Hopkins University.**—Announcement was made by Dr. Frank J. Goodnow, president of the Johns Hopkins University, at the Commemoration Day exercises, February 22, of a conditional gift of \$900,000, from an anonymous donor. At the same time, a grant of \$2,000,000 to the university from the Carnegie Corporation was announced. This gift, the first ever made by the Carnegie Corporation to this university is to be used in the construction and maintenance of an outpatient dispensary and diagnostic clinic. The gift of \$900,000 is provisional on the raising of \$1,000,000 by April 1. The Phipps fund of \$60,000, formerly available each year for the maintenance of the psychiatric clinic, will cease on that date. The anonymous gift is to be expended for the expansion as well as the endowment of the psychiatric clinic.

#### MASSACHUSETTS

**Personal.**—Dr. George MacIver, first assistant director of the Massachusetts General Hospital, Boston, has been appointed secretary-treasurer of the New England Hospital Association to fill out the unexpired term of Dr. Nathaniel W. Faxon, who recently became superintendent of the University Hospital, Rochester, N. Y.—Dr. Charles A. McCarthy has been appointed city physician of Lawrence.—Dr. Channing Frothingham, Jr., Boston, has been appointed a trustee of the Boston Psychopathic Hospital.—Dr. Henry L. Houghton, Boston, has been appointed a member of the state board of registration in medicine to succeed the late Dr. Nathaniel Perkins.—Dr. William L. Richardson, Boston, has been appointed a trustee of the Perkins Institution for the Blind, Boston.

#### MICHIGAN

**Health Board Wins Decision.**—A writ of mandamus compelling the Lansing Board of Education to enforce the order of the board of health requiring vaccination of students, teachers and janitors of the public schools or their expulsion from schools, was issued by Judge Leland Carr, February 7, it is reported. The board of education plans to carry the controversy to the state supreme court.

#### MINNESOTA

**New Public Health Journal.**—The *Northwestern Health Journal*, an outgrowth of the *Minnesota Public Health Journal*, published its first issue, February 10. Associated with Dr. Naboth O. Pearce, the editor, are Dr. Carl B. Drake, St. Paul, editor of *Minnesota Medicine*; Dr. William A. Jones, Minneapolis, and B. G. DeVries, D.D.S. The new journal has received the endorsement of the state medical association and the state board of health.

#### MISSOURI

**Chiropractor Bills.**—Three chiropractor bills have been introduced into the legislature, demanding that chiropractors who have been practicing in the state for one year be licensed, but that, after the passage of the act, they shall be examined by a chiropractic board in anatomy, physiology, chemistry, symptomatology, hygiene, sanitation and the special methods of chiropractic. They must have as a preliminary qualification a four years' high school course or its equivalent, the bills state, and they shall be entitled to all the rights and privileges of physicians and surgeons.

**New Health Association.**—A health organization to be known as the Health Conservation Association has been formed by the amalgamation of the Kansas City Tuberculosis Society and the committees for social hygiene, mental hygiene, dental hygiene and cancer control, with offices at 408 East Eleventh Street, Kansas City. The association is for the protection and improvement of city health. It will conduct campaigns against tuberculosis, cancer, venereal disease and other preventable or curable maladies. R. E. Parsons, president of the city tuberculosis society, was elected president, and Dr. Scott P. Child, treasurer.

#### NEW JERSEY

**Mosquito Extermination Association Meeting.**—At the tenth annual convention of the New Jersey Extermination Association, in Atlantic City, Dr. Thomas J. Headlee, entomologist of the New Jersey Agricultural Experiment Station, stated that 140,000 acres of salt marsh land had been drained and 60 per cent. of the mosquito-breeding places on the upland had been eliminated as the result of the efforts of the association.



**Personal.**—Dr. Effie R. Graef, Somerville, returned home on the White Star liner *Homer* in January, after four years of hospital relief work in Turkey, Armenia and Russia.—Dr. G. Wyckoff Cummins has been appointed city physician of Belvidere.—Dr. Edward Guion, Atlantic City, has been appointed head of the Atlantic County Insane Asylum.—Dr. Louis Shalet, West New York, formerly superintendent of the Montefiore Home County Sanatorium, Bedford Hills, N. Y., has been appointed medical superintendent of the Workmen's Circle Sanatorium, Liberty, N. Y.—Dr. Charles Schwinn, Camden, has been appointed superintendent of the Sunny Rest Sanatorium, Ancora, to succeed the late Dr. Joel W. Fithian.

## NEW YORK

**Kings County Medical Society Opposed to Reregistration.**—Dr. Charles E. Scofield, president of the Medical Society, County of Kings, reports that the society has gone on record as being opposed to any reregistration measures.

**Appropriation for Site for Veterans' Hospital.**—Governor Smith, in signing a bill which appropriates \$500,000 for the purchase of lands at the Kings Park State Hospital, suggested that the Kings Park Hospital be enlarged so that all New York State veterans of the World War who are mentally afflicted can be cared for there.

**State May Purchase Social Hygiene Plant.**—John D. Rockefeller, Jr., has asked \$175,000 for his social hygiene plant beside the State Reformatory for Women at Bedford. The managers of the latter institution are negotiating for the purchase of the plant, which is assessed at \$250,000. Mr. Rockefeller built the plant of the social hygiene bureau and laboratory to further the work at the Bedford Reformatory.

**Scarlet Fever on Long Island.**—Twelve cases of scarlet fever were recently reported in one class in the public school at Freeport, L. I. Several cases of the disease have also been reported from Babylon. Dr. Frank Overton, state medical supervisor of Suffolk County, has advised that all athletic events be cancelled for the present and that children be kept away from motion picture shows.

**Public Safety Commissioner Seizes Coal.**—Dr. Arthur J. Leonard, public safety commissioner of Saratoga Springs, directed the city police and firemen to seize two carloads of anthracite coal in the Delaware and Hudson Railroad yard, February 19, to relieve the coal situation in the city, it is reported. A notice served on Dr. Leonard by the president of the Saratoga Coal Company, ordering him to give up the coal, was ignored, and the distribution of coal proceeded, volunteer workers, police and firemen delivering it throughout the city to meet emergency needs.

**Hospital News.**—A campaign to raise \$1,000,000 for the erection of a new nurses' home and new laboratories for the graduate courses recently inaugurated at the Long Island College Hospital, Brooklyn, will be launched, March 1, and will continue for fifteen days.—Twenty-two violently insane patients and three attendants perished in a fire which destroyed part of the Manhattan State Hospital, Wards Island, February 18. Of the ninety inmates, sixty-eight were finally saved after resisting and laughing at their rescuers.—The Brooklyn Hebrew Maternity Hospital will erect a new building on the site adjoining the present institution at a cost of \$200,000. Ground will be broken about April 1.

**Symposium on Medical Organization.**—At a stated meeting of the Medical Society of the County of New York, January 22, the outstanding feature was a symposium on medical organization. Dr. George E. de Schweinitz, Philadelphia, President of the American Medical Association, spoke on "The National Society"; Dr. Wendell C. Phillips, New York, trustee of the American Medical Association, gave "An Intimate Talk on the Activities of the American Medical Association" (illustrated with lantern slides); Dr. Arthur W. Booth, Elmira, president of the state medical society, spoke on "The State Society," and Dr. Arthur F. Chase, New York, president of the county association, delivered an address on "The County Society."

**Governor Calls Medical Conference.**—Invitations have been sent out from the executive office at Albany, asking college professors, health board officers, rural practitioners and prominent physicians to meet with the governor, February 26, to discuss pressing health problems. Among the problems scheduled for discussion are the narcotic drug evil, medical education and medical research, rural health problems, the need of physicians in rural districts, and the enforcement of the Medical Practice Act. The *Medical Week*, in commenting on this step, says that the governor, by a sweep of the

pen, lifted medical problems out of politics and made them the affair of the whole people, and for the first time the medical profession stands where it should, not on the defensive but as a body of experts sitting at conference with the chief executive of the state.

## New York City

**Sex Education at School of Pedagogy.**—Dr. Thomas W. Galloway of the American Social Hygiene Association, will give a course of lectures to teachers at the School of Pedagogy of New York University. Following is a summary of the course as outlined in the university's catalogue under sex education:

An introduction to the problems of sex education for the teacher. The course will include an elementary review of the biologic, physiologic, psychologic and social groundwork of the sex-social impulses and their expression, with an effort to deduce from this and from the various experiments that have been made a tentative grading, placement and technic in relation to both the schools and the other community agencies closest to the work of the teacher. The course will comprise lectures, assigned readings, discussions and special reports.

**Personal.**—Dr. Joseph J. Cosgrove has been appointed medical superintendent of the U. S. Veterans' Mountain Camp, Tupper Lake.—Dr. E. V. Cowdry of the Rockefeller Institute for Medical Research will deliver the Harvey Society Lecture, March 10.—Dr. John J. Moorhead has been appointed head of the new medical board of Beekman Street Hospital.—Dr. William P. St. Lawrence has been elected chairman of the Association of Cardiac Clinics.—Dr. Philip F. O'Hanlon, police department surgeon, has been retired at his own request, following twenty-seven years of service, and will resume the practice of medicine.—Dr. John J. McGrath has been appointed chairman of the board of trustees of Bellevue and allied hospitals to succeed Dr. John W. Brannan.—Dr. Melvin S. Henderson of the Mayo Clinic read a paper entitled "Loose Bodies in the Joints and Bursae Due to Synovial Osteochondromatosis," before the orthopedic section of the New York Academy of Medicine, February 16.—Dr. Gustav Scholer has been reappointed by Governor Smith as manager of the Manhattan State Hospital.—William Bondy of New York has been reelected member of the state board of regents.—Dr. Alexander Lambert testified before the House Foreign Affairs Committee in the first of a series of hearings on the bill introduced by Representative Porter of Pennsylvania to suppress illicit international traffic in drugs.

## NORTH CAROLINA

**Abolishes Prison for Insane.**—The senate passed the bill which would abolish the department for the criminal insane at the state prison and place the inmates in the state hospitals for the insane, February 9. Transfer of control of the state sanatorium for the treatment of tuberculosis from the state board of health to a board of directors to be named by the governor, was also approved by the senate, the bill passing its third reading.

## OHIO

**Graphic Health Service.**—The Ohio Public Health Association has announced the inauguration of a graphic health service. A series of charts of standard size will be issued on the 1st and the 15th of each month covering the subject of public health as expressed through vital and morbidity statistics, the state department of health, voluntary organizations, hospitals, dispensaries and public health nursing. A year's subscription for these charts is \$2, which covers only the actual cost of preparation and publication.

**Medical Practice Act Upheld.**—In an opinion handed down, January 16, in the case of the state ex rel. Lewis M. Copeland (a chiropractor) against the state medical board, in which Copeland sought to compel the board to issue him a license to practice for five years before the limited practitioners act became effective, October, 1915. The Supreme Court of Ohio, in a unanimous opinion, written by Chief Justice Marshall, holds that the mere filing of an affidavit by an applicant for a certificate stating that he was entitled to it is not sufficient. The board has a right, the court held, to inquire into the alleged facts set forth in the affidavit, which it did in Copeland's case, and refused him a license. The court denied his application for a writ of mandamus to compel the board to issue him a certificate.

**New Buildings Named After Former Teachers.**—Four former Columbus physicians are honored in the naming of three buildings at the Ohio State University College of Medicine, Columbus. The present university hospital with its contemplated addition will be known as the Starling-Loving University Hospital, in honor of Dr. Starling Loving, for



many years professor of medicine and at one time dean of the faculty of the Starling Medical College, and of Dr. Lyne Starling, founder of the Starling Medical College and cofounder of St. Francis Hospital. The medical research building, located just west of the hospital, has been named Kinsman Hall in honor of Dr. David Nathaniel Kinsman, who was professor of the practice of medicine in the old Ohio Medical University. The medical science building will be known as Hamilton Hall, in honor of Dr. John Waterman Hamilton, who was a professor of surgery in Columbus Medical College and a cofounder of Mount Carmel Hospital. The secretary of the board of trustees announced that these buildings had been named in honor of the three colleges of medicine which merged with the state university, and of the men who were most prominent in their work.

**Hospital News.**—The Grant Hospital, Columbus, has been conveyed by Dr. J. F. Baldwin, former president of the Ohio State Medical Association, through a deed of trust to a self-perpetuating board of trustees. The nurses' home was included in the transfer, which was made December 24. The new psychopathic hospital, erected at a cost of \$800,000 in Cleveland, and considered the latest advance in construction for the care and treatment of the insane, was closed December 25, after being open two weeks, by order of the director of public welfare. It has been announced that the institution will probably be rebuilt to correct certain defects. Plans for the erection of a state hospital for feeble-minded at Grafton at a cost of \$5,000,000, on a 1,100 acre plot, have been announced by the superintendent of the state welfare department. Construction work on the twenty-eight new buildings will start this spring, and the entire plant will be completed within two years, it is expected. The new hospital of the National Home for Disabled Volunteer Soldiers, Dayton, was opened for public inspection, January 22. Tuberculous patients only will be admitted to this institution, which has a capacity of 250 beds.

#### PENNSYLVANIA

**Personal.**—Dr. William C. White has resigned as medical director of the Tuberculosis League of Pittsburgh following sixteen years of service. Dr. C. Howard Marcy will succeed Dr. White. Dr. Clair S. Bauman, Lock Haven, has accepted the post of company physician at Calcutta, India, with the Ludlow Manufacturing Company of Boston. He will sail in May. Dr. William G. Turnbull, medical director of the Cresson Sanatorium, has been appointed deputy state health commissioner by Dr. Charles H. Miner, state health commissioner. He will assume his duties, March 1, succeeding Col. John D. McLean, resigned.

#### SOUTH CAROLINA

**Trustees for Medical School Elected.**—The general assembly, February 1, elected Drs. Gottlob A. Neuffer, Abbeville, Larkin H. Jennings, Bishopville, E. H. Barnwell, Charleston, and D. T. Riley, Florence, as trustees of the board of the Medical College of the State of South Carolina, Charleston.

#### TENNESSEE

**Governor Signs Chiropractors' Bill.**—Governor Peay signed the chiropractors' bill, February 2, it is reported. This is the culmination of a long fight by the chiropractors of Tennessee to win recognition. The new act provides for the establishment of a board of chiropractors, one member from each grand division of the state, which is empowered to conduct examinations and issue licenses. It also authorizes chiropractors to sign death certificates.

**Physician Wins Verdict.**—A peremptory verdict in behalf of Dr. Abraham L. Blecker, Memphis, was directed in circuit court, February 1, by Judge Pittman in a case brought against the physician by the administrator of the estate of Mrs. Anna Katz, deceased, in a suit for \$25,000 damages which grew out of the death of Mrs. Katz following a cesarean section in June, 1918. The plaintiff contended that Dr. Blecker performed this operation without the consent of Mrs. Katz's father or husband. Dr. Blecker stated that he operated in a serious emergency caused by the development of eclampsia. Judge Pittman in directing the verdict held that Dr. Blecker was entirely right in operating under the circumstances.

#### UTAH

**Hospital News.**—A receiving building was recently opened at the Utah State Hospital, Provo. It was erected at a cost of \$250,000 and is called the George E. Hyde Memorial building.

#### VERMONT

**Personal.**—Drs. Winfield Scott Nay, Underhill, and A. E. Parlin, Island Pond, have been reappointed to the Vermont State Board of Medical Registration. Dr. William G. Ricker, St. Johnsbury, has been appointed a member of the state board of health, and Dr. William N. Bryant, Ludlow, a member of the board of supervisors of the insane.

#### VIRGINIA

**Personal.**—Dr. Howard F. Smith, surgeon, U. S. Public Health Service, for the last two years quarantine officer-in-charge at Hampton Roads, has been transferred to Manila, P. I. Dr. A. M. Byrd has resumed practice in Richlands, following three and a half years of illness. Dr. Richard Eanes, formerly of Moseley, and for the last three years stationed at Tientsin, China, has landed in San Francisco. He will report for duty at the Fitzsimons Hospital, Denver. Dr. William P. Gilmer, Clifton Forge, sailed for Korea in January, where he will work as a medical missionary under the auspices of the Southern Presbyterian Church.

#### WASHINGTON

**Hospital Contract Awarded.**—Construction of the U. S. Veterans' Bureau hospital located between Camp Lewis and Fort Steilacoom has been started. The Harley-Mason Company of Tacoma was awarded the contract for \$1,397,000, with a provision calling for completion within a period of 260 days. The entire cost of the base hospital will be \$2,000,000, and will involve the erection and equipment of twenty-eight buildings.

#### WISCONSIN

**Personal.**—Dr. Chester L. Carlisle, surgeon, U. S. Public Health Service, has been assigned medical officer in charge of the U. S. Veterans' Hospital No. 37, Waukesha, vice Surg. Lawrence Kolb, who has been detailed to the Hygienic Laboratory, Washington, D. C. Dr. Carlisle was formerly chief of the neuropsychiatric section of the U. S. Veterans' Bureau in the eighth district, which comprises Wisconsin, Michigan and Illinois, with headquarters in Chicago.

#### PHILIPPINE ISLANDS

**Banquet for Dr. Beck.**—A dinner was given in honor of Dr. Joseph G. Beck, associate professor of surgery, otology, rhinology and laryngology at the University of Illinois College of Medicine, Chicago, by alumni of the University of Illinois and members of the eye, ear, nose and throat department of the University of the Philippines, at the Manila Hotel, when he was touring the Far East, recently.

**Society News.**—At the annual meeting of the Philippine Islands Medical Association, held in Manila, December 20-22, under the presidency of Dr. Henry H. Steinmetz, Manila, the following officers were elected for the ensuing year: president, Dr. Antonio G. Sison; vice presidents, Drs. I. Oto Schöbl and Leoncio Lopez-Rizal, and secretary-treasurer, Dr. Isabelo Concepcion (reelected). The next annual meeting will be held in Manila, December, 1923. Dr. Walfrido de Leon, who was elected delegate to the annual session of the American Medical Association, has already left for San Francisco. Dr. Leonard Wood, governor general of the islands, Dr. Charles N. Leach of the Rockefeller Foundation and Capt. W. D. Fleming, U. S. Army Medical Department Research Board, were among the speakers. The annual meeting of the Manila Medical Society was held January 3, in the library of the Philippine General Hospital. Dr. Herbert W. Wade was elected president for 1923; Dr. Daniel De la Paz, vice president, and Dr. Carmelo M. Reyes, secretary-treasurer (reelected). The chairman announced that Dr. Liborio Gomez has been elected editor-in-chief of the *Journal of the Philippine Islands Medical Association*, to succeed Dr. Carmelo M. Reyes.

#### CANADA

**Public Health in Canada.**—Seven cases of epidemic (lethargic) encephalitis were reported from Vancouver in one day recently. It was stated that the majority of the cases were preceded by influenza. The epidemic of influenza in Toronto is abating, although the capacity of the city hospitals is still overtaxed. The peak was reached the week ending February 10, when eleven deaths were reported in one day.

**Personal.**—Drs. John Hunter, Caroline S. Brown, James E. Forfar and Edwin C. Beer were recently elected members of the school board in Toronto. Dr. Paul A. T. Sneath, Toronto, has been appointed a medical officer on the Gold



Coast, West Africa. He will take a course of instruction in tropical medicine in London, England, before taking up his duties in Africa.—Dr. Roderick D. Dewar, Melbourne, and Dr. William H. Woods, Mount Brydges, were elected president and secretary-treasurer, respectively, of the Middlesex Medical Association, at the annual meeting.—Dr. Alexander F. McKenzie and Dr. F. M. Walker were elected president and secretary, respectively, of the Southern Branch of the Simcoe County Medical Society at the annual meeting at Alliston.—Dr. Thomas C. Routley, secretary of the Ontario Medical Association, addressed the Niagara District Medical Society at Welland, January 4.

**Amendment to Medical Practice Act.**—Amendments to the Quebec Medical Act, passed by the lower house, were recently approved in the public bills committee of the legislative council after a number of the proposed changes had been killed. As finally approved, the bill holds that any one who assumes the title of doctor without qualifications, whether in newspaper advertising or by other means, is liable to fines ranging from \$50 to \$200. Improper advertising of this character will also carry a three months' prison sentence as well as a \$200 fine for any offense subsequent to the second. The clause stating that "without previously obtaining authorization from the lieutenant governor-in-council, it is forbidden to keep an institute, private hospital, home for convalescent or sick persons, maternity hospital or establishment where consultations and treatments are given" was struck out, following representations by osteopaths of the province.

### GENERAL

**Drs. Elliot and Lovejoy Awarded Medals.**—The Greek government has conferred the war cross on Drs. Mabel Elliot of Benton Harbor, Mich., and Esther Lovejoy of New York, for their services with the Near East Relief in Smyrna. It is stated this is the first time this decoration has been awarded to women.

**Society News.**—The seventy-fifth annual meeting of the South Carolina Medical Association will be held at Charleston, April 17-19, under the presidency of Dr. Charles F. William, Columbia, and in conjunction with the South Carolina Pediatric Association, the state nurses' association and the state public health association.—The annual meeting of the Southern Public Health Laboratory Association will be held in Richmond, Va., March 23-24. This association is composed primarily of the laboratory directors of the southern states.—The Women's Medical Society of New York will hold its annual meeting, May 21, in New York, under the presidency of Dr. Harriet M. Doane.

**Appropriation for Lepers' Home.**—The appropriation of \$650,000 to provide additional facilities for the national home for lepers at Carville, La., is authorized in a bill that passed the House of Representatives. The measure had previously been adopted by the Senate and now goes to the President for his signature. The bill authorizes the enlargement of the leprosarium at Carville to accommodate 500 patients, as compared with its present capacity of 200. A theater is to be erected. The U. S. Public Health Service now controlling the National Lepers' Home at Carville has been compelled to reject many applications from state health authorities, asking that they be allowed to turn over lepers to the national government.

**Surgeons Sail for South America.**—Members of the American College of Surgeons sailed from Hoboken, N. J., February 10, on the Lamport and Holt liner *Vandyck* for a cruise to South America, which will occupy about two months. The purpose of the trip is the promotion of professional and social relations between the surgeons of Central and South America with surgeons of the United States, which, it is hoped, will lead to an exchange of professors and students between the colleges of surgery in the various countries. Approximately 350 members of the college and their families will make the trip. Scientific meetings and clinics will be held in the various cities, and the medical schools and hospitals visited. The party will be entertained by the president of Cuba. At Colon, Panama, they will assist in laying the cornerstone of the Gorgas Institute of Tropical Medicine.

**Scheme to Defraud Physicians.**—A swindler has visited York, Pa., Braddock, Pa., and Alliance, Ohio. He aims to call on the leading surgeons of a city and make arrangements for an operation for a growth on the inside of his right jaw, and a fistula. When all arrangements for the following day are made he produces a bank book on a bank in another part of the country, saying he will deposit money in a bank in the city where he happens to be, so that funds

can be used as required during his stay in hospital. He induces the surgeon to advance money on account of his supposed bank account, and of course, never turns up for the operation the next day. The impostor uses the name of Frank S. Miller. He is 65 to 70 years old and 6 feet tall. He is clean shaven, appears nervous and deaf, has thin gray hair, a growth on the inside of the right jaw, and laughs peculiarly. Should this party come to your attention, please notify the First National Bank, Braddock, Pa.

### FOREIGN

**London Free from Smallpox.**—The two remaining cases of smallpox in London were discharged from the Long Reach Isolation Hospital, Dartford, January 19, and for the first time in months the metropolitan area is free of the disease.

**Body of Roentgen Cremated.**—The body of Prof. William Konrad Roentgen, discoverer of the roentgen ray, was cremated at the Ostfriedhof Cemetery, Munich, February 13. The immediate cause of his death was strangulated hernia.

**German Dermatology Congress.**—The annual meeting of the German Dermatologic Society is to be held at Munich, May 20-23. The only topic selected for discussion is "Eczema." For further details, apply to Professor Jadasohn, Maxstrasse 1, Breslau.

**Manchuria Medical College.**—The Manchuria Medical College (formerly the South Manchuria Medical School) at Mukden, having been recently raised to the rank of a university, celebrated the augmentation of its faculty recently. Dr. I. Inaba, president of the college, delivered the opening address.

**German Scientists Desire to Exchange Publications.**—A committee has been formed in Germany to facilitate exchange of scientific periodicals. It is requested that those who wish to exchange American publications for foreign may address Notgemeinschaft der deutschen Wissenschaft, Bibliotheksausschuss, Berlin C.2, Schloss, Portal 3.

**The Italian Surgical and Internal Medicine Congresses.**—The thirtieth annual meeting of the Italian Surgical Society is to be held at Rome in October, the same week as the annual meeting of the Italian internists. There is to be a joint session of the two to discuss the surgical treatment of gallstones from the standpoint of chronic pancreatitis. The only other subject selected for discussion at the surgical congress is "Transplants." The officers of the society are Professors Alessandri, president; Parlavecchio and Baldo, vice presidents, and Rossa Felice and Crescenzo, secretary and treasurer, respectively.

**Roentgenologist Honored.**—Dr. Charles Vaillant of the Lariboisière Hospital, Paris, who has suffered the loss of both arms in roentgen-ray experimentation, was awarded the cravate of the Legion of Honor, the Carnegie hero medal and the gold medal of the city of Paris, February 19. The ceremonies took place at the city hall. The United States ambassador, Myron T. Herrick, conferred the Carnegie medal after Gen. A. Y. E. Dubail, grand chancellor of the Legion of Honor, had awarded Dr. Vaillant the cravate. The president of the municipal council of Paris presented the gold medal of the city of Paris, a rarely conferred honor. Dr. Vaillant has worked almost without respite for twenty-five years at Lariboisière Hospital, and was one of the first Frenchmen to apply himself exclusively to study of the roentgen ray.

**Medical Library for American Hospital in Japan.**—Dr. R. B. Teusler, director of St. Luke's International Hospital, Tokyo, is asking for assistance in building up a medical library at the institution. The hospital staff, which includes twenty Japanese physicians, is handicapped by lack of reference books, and the medical profession in general has no access to anything in Tokyo except occasional textbooks and broken files of American and British medical magazines. St. Luke's, the only American hospital in Japan, is being enlarged to a 230-bed capacity, for private and charity patients. Persons having published books on medicine or nursing are requested to donate copies, and physicians who are retiring from practice are asked to remember St. Luke's when disposing of their libraries. The Church Periodical Club, 2 West Forty-Seventh Street, New York, has charge of providing the library and will be glad to furnish further information.

**German Warning Against Milligram Ampules.**—The organized physicians of Greater Berlin have recently published a warning against the use of *milampullen*, and urge pharmacists not to dispense them when prescribed. The direct occasion for the warning was three instances of severe poisoning from atropin after subcutaneous injection of an ampule of atropin



from a box labeled to contain atropin in ampules in 1 mg. doses. The ampules dispensed had been prepared for veterinary purposes, and each ampule was supposed to contain 0.1 gm. of atropin. The organized pharmacists, it is stated by the *Medizinische Klinik*, have frequently warned that all preparations supposed to contain 1 mg. doses should be viewed with suspicion. Not only the labels on the packages may be incorrect, but the dose may not be accurate. This was evidenced by the three cases cited: If the whole alleged amount of 100 mg. had been contained in the ampule, the injection would probably have been fatal.

**International Conference on Spanish Theory of Tuberculosis.**—The *Semana Médica* and other journals give the details of the conference to be held at Madrid in the last two weeks of April, to discuss the various aspects of the theory in regard to the etiology and treatment of tuberculosis, which Dr. Jaime Ferrán promulgated twenty-five years ago, and on which there is now considerable international literature. It was commented on in *THE JOURNAL*, June 10, 1922, p. 1833. The conference is open to all who have any communication to make bearing on Ferrán's theory. A list of those already inscribed for the conference includes a number of tuberculosis specialists from Latin America, and Ascoli of Italy, Pribram of Vienna and Brück of Budapest. Prophylaxis and treatment based on Ferrán's views were applied in 1919 on a large scale at Alcira in Spain, as described in the *Madrid Letter* at the time, Oct. 4, 1919, p. 1074. The letter described also the scientific foundation for Ferrán's antialpha vaccination against tuberculosis.

**Personal.**—Dr. Brunner of Groningen, who was active in obtaining temporary homes for German children in Holland during the war, has received an honorary degree from the University of Greifswald.—Dr. F. von Soxhlet of Munich recently celebrated his seventy-fifth birthday.—Dr. L. Asher, professor of physiology at the University of Berne, has been elected honorary member of the Biologic Society of Buenos Aires.—Prof. M. Oppenheim of Vienna has been invited to address the annual meeting of the London Dermatologic Society on "Recent Progress in Dermatology."—Dr. Gálvez of Malaga was recently presented with an address on vellum in tribute to his work among the wounded in the Morocco campaign.—Dr. Franz M. Groedel of the University of Frankfurt, Germany, was the guest of the Eastern Medical Society at the New York Academy of Medicine, recently. He gave a roentgen-ray demonstration of cardiac movements.—Dr. E. Phole, Frankfurt, conducted a ten-day clinic at St. Joseph's Hospital, Omaha, February 5-15.—Major W. D. H. Stevenson has been appointed officiating director of the Pasteur Institute of India, Kasauli.—Col. Charles Macwatt has been appointed director general of the Indian Medical Service, to succeed Major Gen. Sir William Edwards.

#### Deaths in Other Countries

Dr. A. P. Sherwood, at Eastbourne, two days after his retirement from practice.—Capt. William A. Whitelegge, surgeon of the British Navy; aged 61.—Dr. Cornelius Biddle, December 16, aged 74.—Dr. Mary T. McGarvan, a medical missionary of the Christian Church for twenty years; at Damah, India, following an operation. Dr. McGarvan was formerly a resident of Lisbon.—Dr. Hunter F. Tod, well known surgeon for diseases of the throat, nose and ear. He died from malignant disease of the larynx, January 23, in his own ward in the London Hospital.—Dr. Jorge Martínez Santamaría of Bogota, aged 42. Nearly the entire issue of the *Repertorio de Medicina* of Bogota is devoted to the official tribute from the president of the republic, and the resolutions of condolence passed by the national parliament, by the public health and other departments and by the scientific societies of Colombia on the death of this physician, who was called the Colombian Pasteur. He founded the national laboratory for production of antiserums and vaccines, and published works on tropical diseases, one on leprosy winning an international prize.—Dr. Raffray, physician on Mauritius Island, east of Madagascar. Two of his works, on the nervous system and diet, were awarded prizes by the French Académie de médecine.—Dr. Samuel M. Salazar, professor of medical propedeutics at the Military Medical School of Mexico.

#### CORRECTION

**Chicago Surgeons Not on Tour.**—Drs. A. J. Ochsner and Henry Schmitz request statement that their names were included in a list of surgeons making the South American trip, *THE JOURNAL*, January 20, through error. The announcement published was taken from the *Chicago Journal*.

## Government Services

### New Name Proposed for Postal Department

The U. S. Postoffice Department, of which Dr. Hubert Work, former president of the American Medical Association, is head, will be known as the Department of Communications under the proposed reorganization of the government departments.

### Colonel Forbes Resigns from Veterans' Bureau

It is announced from Washington that Col. Charles R. Forbes has resigned as director of the U. S. Veterans' Bureau. Colonel Forbes is now on leave in Europe.

### U. S. Public Health Service

Examinations of candidates for entrance into the regular corps of the U. S. Public Health Service will be held, March 12, 1923, at San Francisco, Washington, D. C., and Chicago. Requests for information or permission to take this examination should be addressed to the Surgeon-General, U. S. Public Health Service, Washington, D. C.

### Medals Awarded

Distinguished service medals for conspicuous efficiency during the World War were awarded this week by Secretary of War Weeks to Col. Christopher C. Collins, Medical Corps, and Capt. Robert A. Dickson, Medical Administrative Corps.

### Reorganization of Government Departments

The plan of President Harding for reorganization of the government departments has been transmitted to Congress by the joint congressional committee on the reorganization of the administrative branch of the government.

An outstanding feature of the committee's report is the proposed creation of a department of education and welfare. This department would include a number of bureaus having functions related to public health, veteran relief and women and children's service, which are now functioning in at least a half dozen different departments of the government. The proposed organization of the department of education and welfare follows:

(a) This is a new department, to have four major subdivisions, each in charge of an assistant secretary, as follows:

- Education.
- Health.
- Social Service.
- Veteran Relief.

(b) Existing bureaus and offices to be transferred to the Department of Education and Welfare are as follows:

From the Department of the Interior:

- Bureau of Education.
- Indian schools.
- Howard University.
- St. Elizabeth's Hospital.
- Freedmen's Hospital.
- Bureau of Pensions.

From the Department of Labor:

- Women's Bureau (part).
- Children's Bureau (part).

From the Treasury Department:

- Public Health Service.

From the War Department:

- Soldiers' Home.

From the Department of Justice:

- Office of the Superintendent of Prisons.

Independent establishments:

- Smithsonian Institution.
- Federal Board for Vocational Education.
- National Home for Disabled Volunteer Soldiers.
- Columbia Institution for the Deaf.
- Veterans' Bureau.

No immediate action is expected on the report of the committee. Its recommendations have the sanction of the Cabinet, but must await the action of the December session of Congress.

### Senate Investigation of Veterans' Bureau

A resolution proposed by Senator Walsh of Massachusetts, providing for a thorough investigation of alleged waste, extravagance and mismanagement in the Veterans' Bureau, has been adopted. The resolution requires the Special Hospitalization Committee, appointed in June, 1921, to consider



the charges of mismanagement, waste of funds and extravagant purchase of supplies, to determine whether or not such charges should be investigated and to recommend to the Senate the manner and scope of the investigation. The recent resignations of Director Charles R. Forbes, General Counsel Charles F. Cramer, and Dr. T. Hugh Scott, formerly executive officer, are regarded as significant in connection with the proposed investigation.

#### Survey of Philippine Subdistrict of Veterans' Bureau

Dr. L. B. Rogers, assistant director, has arrived from the Philippine Islands and is at his post as chief medical adviser in charge of the medical division of the U. S. Veterans' Bureau, Washington, D. C. Before leaving the islands, Dr. Rogers, accompanied by Major A. C. York, manager of the Philippine Islands subdistrict, made a survey of bureau activities in that section. More than \$500,000 in gold is being paid annually to disabled ex-service men of the islands in the form of compensation, hospitalization and vocational training. Dr. Rogers visited the hospitals where bureau beneficiaries are located and personally examined about 300 patients. The bureau, which has about sixty cases in the Santol Tuberculosis Colony, Sana Mesa, Los Banos, the only institution in the vicinity of Manila admitting tuberculous patients, has a contract with the Philippine Island Antituberculosis Society, which conducts the sanatorium for the care of these wards, 5 pesos per day for each patient being paid by the bureau. Dr. Rogers, after visiting many proposed hospital sites, selected a tract of land with modern buildings, accessible to Manila and in a high altitude, which can be converted into a tuberculosis hospital at thirty days' notice. Following a conference with General Read and Colonel Kennedy of the U. S. Army, it was arranged that general medical and surgical cases should be cared for in the Sternberg Hospital at Manila.

### Foreign Letters

#### LONDON

(From Our Regular Correspondent)

Feb. 1, 1923.

#### Maudsley Hospital Opened

The Maudsley Hospital, which is the first institution in this country following the lines of the neurologic and psychiatric clinics of the continent of Europe and of America, designed for the treatment and investigation of organic nervous diseases, neuroses and incipient psychoses, has been opened. It was founded by the London County Council on the initiative of the late Dr. Henry Maudsley, an eminent alienist and psychologist, who made a munificent gift for the purpose—\$150,000—during his lifetime and left \$50,000 in his will. The hospital represents the first provision made by a public body in England for the treatment of early and curable types of mental disorder entirely on a voluntary basis and apart from certified cases. The hospital is intended primarily for the early treatment of mental disease, but it is also intended to afford opportunities for diagnosis of cases in which special facilities are necessary, for observation of cases of unusual scientific interest and for the study of psychologic medicine, especially by physicians who have qualified. There are 157 beds for inpatients, as well as an outpatient department. A course of lectures for the diploma in psychologic medicine under the direction of Sir Frederick Mott has been arranged. Given willingness to undergo treatment, good prognosis is the main feature constituting suitability for admission of patients. In fact, cases without such prognosis will be admitted only on account of difficulty of diagnosis or exceptional scientific interest. Suitable types for admission among neuroses are hysteria, neurasthenia, anxiety and obsessional states, and among psychoses mild

phases of the manic-depressive type and those associated with pregnancy and the puerperal period, with postinfective states, with syphilitic brain disease of the interstitial types, with alcoholism and other drug habits, with endocrine disturbances and generally cases exhibiting mental symptoms associated with all forms of definitely bodily disease. Cases of organic nervous disease of most kinds with mental symptoms will be considered as sufficiently interesting to justify admission regardless of prognosis. Unsuitable types (except for diagnosis, research or teaching) are cases of simple congenital defect, epileptic deterioration, general paralysis, advanced dementia praecox, and usually delusional states of more than one year's standing.

#### An Institute of Animal Pathology at Cambridge

The council of the senate of the University of Cambridge has presented a report on the offer of the ministry of agriculture and fisheries to establish an institute of animal pathology. For a long time it has been the opinion in the departments of agriculture and medicine of the university that provision should be made for the teaching of animal pathology. This opinion is strongly supported by the Right Hon. Sir Clifford Allbutt, regius professor of physic, and by the professor of agriculture. The ministry offers, in the first instance, to provide a capital sum of \$150,000 for investment by the university, on certain conditions bearing on the founding of a chair of animal pathology; but it is not in a position to recommend any assistance toward expenditure on the study of animal diseases at Cambridge from funds other than the Corn Production Acts fund, and when this fund is exhausted, their commitments will cease. But when, in 1927 or thereabouts, this fund is exhausted, the government will be prepared to consider, with due regard to the position of national finances and of agriculture, provision for carrying on the scheme. The council is of opinion that the university should be protected from financial risk by the addition of a proviso that it should be under no obligation to continue the institute after 1927 unless satisfactory provision for maintenance is forthcoming, either from the government or from other sources. In the event of failure of financial support, the university will be left with a fully endowed professorship of animal pathology, an extension of the school of agriculture, with sufficient endowment to pay its rates and arrange for more or less temporary buildings. The council recommends acceptance of the scheme subject to the conditions mentioned.

#### Plan for a World List of Scientific Periodicals

At a meeting of the Conjoint Board of Scientific Societies, a definite constitution was given to a scheme to prepare and issue a list of all scientific periodicals containing the results of original research, with an indication of the libraries in Great Britain where they may be consulted. There are many thousands of such periodicals written in many languages, printed in almost every civilized country, and produced at different prices and intervals. No accurate list of these exists; no single library contains even a large proportion of them; there is much overlapping, and many periodicals are not known to reach this country. An influential committee representing different branches of science has been arranging for the preparation and publication of a complete list. The trustees of the British Museum, recognizing the importance of the work, have consented to allow the preparation of the list to be undertaken by the staff of the keeper of printed books. Material has been sent in by many scientific societies and libraries, and it is hoped that the list will be printed before the end of the year. As a result of a preliminary circular, between 300 and 400 copies have been subscribed for at \$10 each. The Carnegie United Kingdom



Trust has guaranteed the cost of publication up to \$5,000 on condition that libraries at a larger number of centers in Great Britain than was originally intended be included.

#### The Investigation of Distemper

The *Field*, a journal devoted to country life, is inaugurating a fund for investigation of the cause of distemper in dogs. It appeals for support, either in the form of one donation before March 1 or an annual subscription for three years beginning on that date. After the three years the position will be reconsidered, and it will be decided whether any further subscription is necessary. The Medical Research Council has promised cooperation and the use of its farm laboratory, which is under the direction of a skilled veterinary pathologist. Promises of collaboration and assistance have also been received from France and the rest of Europe, and particularly from the United States and the various dominions of the British Empire. Individual research is by no means a novelty in the long history of distemper. But by the centralizing of effort over so large an area, by avoidance of overlapping and by cooperation of the medical and veterinary professions, it is hoped to make greater progress than has been achieved before. Any advance in our knowledge of distemper will probably involve a similar advance in the power of controlling similar diseases in man. It is estimated that the loss caused by the ravages of the disease in dogs amounts to several million pounds a year. A bulletin of the progress made will be issued regularly to subscribers and to the press.

#### The Position of Physicians Under the Dangerous Drugs Act

The Dangerous Drugs Act, which was passed in order to prevent the abuse of drugs by addicts, has been described in previous letters to THE JOURNAL. Obligations are imposed on physicians in regard to giving prescriptions and keeping records. The Home Secretary, whose department administers the act, has issued regulations as to inspection. At first a policeman, acting under authority, could demand to see a physician's drug books, but the Home Secretary has now decided that inspection can best be carried out by health officers. This new regulation is regarded by the profession as less irritating, though not without objection, for it has been pointed out that the health officer may possibly be a rival practitioner with a right to enter premises without warning, to whom the books and other circumstances of an opponent would be thus thrown open. All prescriptions containing a dangerous drug must be in writing, dated, signed with the name and address of the physician, and must state the name and address of the patient, and the total amount of the drug to be supplied on the prescription. Physicians who dispense medicine must keep registers both of purchases of drugs and of their supply to patients. A physician who infringes any of the regulations is liable to a fine of \$1,000 or to imprisonment for six months. Further, the Home Secretary has power after conviction to withdraw from a physician his authorization. The effect would be to deprive him of his right to be in possession of or to supply drugs.

#### A Well-Documented Methuselah

Under this title, Donald MacKie, deputy registrar-general, Bureau of Vital Statistics, Edmonton, Alta., records in the *Lancet* the death of William Kennedy of Holden, which has been registered in his department. His age is given as 125 years, the primary cause of death as "senility," and the contributory cause as "exhaustion." On investigating the dates, Mr. MacKie got the following information from the son of the deceased: "He was baptized, Sept. 25, 1802, near Ennis-killen, Ireland, by the Rev. John Richardson, vicar of the

parish, and is the son of Thomas and Margaret Kennedy of Glenvannon. I personally copied it from the original in 1898. He had seven brothers and four sisters, and one of the latter was alive two years ago, and was senior to the deceased. He shaved without glasses two weeks ago, and until lately could read without glasses. He recited long passages of scripture within four days of his death, and passed away almost imperceptibly."

#### A National System of Registration of Disease

At the Royal Statistical Society, Dr. R. Dudfield advocated the establishment of a national system for the registration of disease. He said that though much attention had been given to epidemic diseases, there was a mass of disablement treated in hospitals and other institutions, of which no study on a grand scale had been attempted. The research work which was going on was too piecemeal in character. Data need bringing together from all institutions, to be collated and analyzed by a central body of statisticians with medical experience.

#### PARIS

(From Our Regular Correspondent)

Jan. 26, 1923.

#### The Centenary of the Death of Jenner

The Academy of Medicine commemorated with appropriate ceremonies the centenary of the death of Jenner. A commemorative exhibition of documents connected with Jenner and the earliest period of smallpox vaccination was held, on this occasion, at the headquarters of the academy.

#### Some Criticisms on Modern Medicine

As he was about to retire from active duty, Dr. X. Arnozan, professor of clinical medicine at the Faculté de médecine of Bordeaux, gave a farewell lecture, in which he compared modern medicine with that in vogue fifty years ago. While unsparing in his criticisms of the medicine of the past, Arnozan also condemned contemporaneous medicine. He reproached it for not taking any particular account of the natural course of diseases. The belief seems to be prevalent that a disease cannot be cured unless it is treated with a specific. Another criticism of contemporaneous medicine is its too great multiplicity or complexity; the overdoing of specialization and the undue number of physical examinations to which patients are consequently subjected. There are, in fact, too many specialists. Finally, and chiefly, Arnozan arraigns modern medicine for being overready to accept new remedies. As soon as a new remedy is put on the market, everybody hastens to prescribe it, without waiting for sure evidence that its use is really beneficial. Then, after a few years, a few months or merely a few weeks of popularity, the new remedy is discarded, leaving the memory of useless, and sometimes, unfortunately, of dangerous prescriptions. Arnozan regrets particularly that, in the application of new remedies, we often lose sight of the fact that a given remedy, excellent though it may be to combat the manifestations of an infectious agent in one portion of the organism, may be absolutely incapable of influencing conditions in other portions.

#### Collection of Public Health Statistics in France

I mentioned in a previous letter the critical study of Dr. Raoul Pacaud on the public health statistics of France (THE JOURNAL, Dec. 30, 1922, p. 2244). The question has been taken up also by Drs. Louis Martin and E. Briau, and they rendered a report on the subject to the ninth Congress of Hygiene, recently held at Paris. This congress, considering the fact that hygienists need to have access to public health statistics which are easily utilizable and always up to date, passed a resolution demanding that (1) death certificates



shall be obligatory and shall be executed by physicians (as far as possible, by the attending physicians) on an official blank giving a list of questions drawn up by the Conseil supérieur d'hygiène; (2) these official blanks, when filled out, shall be delivered at the *mairie* (mayorality house), whence they shall be promptly sent to the departmental medical inspector of public health, who will each day classify the statistical information contained therein; (3) a condensed report of the statistics of each month shall be sent by the departmental medical inspector to the minister of public health, whose duty it shall be to see that the statistical tables are kept up to date and that the departmental reports are communicated to the *Journal officiel*, and (4) an earnest appeal should be made to practitioners, through the intermediation of their associations and "syndicates," in order that, guarantees being furnished that privileged communications shall not be violated, they may give whole-heartedly and without mental reservations their complete and hearty cooperation toward securing reliable death certificates.

#### Antivenereal Instruction

Dr. Julien, an army physician, recently presented to the ninth Congress of Hygiene a communication on antivenereal instruction as given in educational institutions for young men. In 1921, Jullien instituted in the boys' college of his city a series of lectures on public health, which he closed with a talk on "The Sexual Life and Its Dangers," to which only seniors who were candidates for the bachelor's degree were admitted. None of the boys' parents raised any objections, while most of them expressed their appreciation of his endeavors. In 1922, parents requested that he should give again the talk he had given the previous year for the older boys. These results seemed to the congress sufficiently encouraging to prefer a request to the minister of public instruction to establish as a regular routine in secondary schools, and in the beginning classes of higher institutions, sex education and antivenereal instruction, to be given by a competent physician and reserved for pupils above 16 years of age.

#### Taxes Imposed on Sanatoriums

The tax administration has of late made the claim that physicians who are directors of sanatoriums are required to pay the 8 per cent. tax on industrial and commercial profits, instead of the 6 per cent. tax that is levied on the profits of the so-called liberal professions. An alienist who directs personally a sanatorium was addressed thus: "You are conducting a *pension*, since you are hospitalizing a certain class of patients in a special establishment, where they may enjoy calm, rest and fresh air, while, at the same time, they receive the care appropriate to their condition. You furnish them also board and lodging, heat, light and domestic service. Would you deny that these are acts identically the same as those performed by persons pursuing a purely commercial profession? It would seem that you should be taxed as one deriving commercial profits." The council of prefecture (a tribunal in each department of France, which assists the prefect in his administration) of the department of the Seine, with which the physician who had been thus taxed filed a complaint, decided the question quite differently. It rejected the claim of the fisc and brought out the fact that the profession of medicine "consists essentially in caring for a certain category of patients. The acts in question constitute the exercise of the purely liberal profession of a medical alienist in treating his patients. Again, providing patients with board and lodging, heat, light and domestic service appears to be a necessary consequence and only accessory or supplemental to the regular applied treatment, and therefore cannot and does not change the character of the profession exercised. . . ."

The council of prefecture decided that the physician had been wrongfully subjected to the tax on commercial profits.

In an additional instance, M. Grinda, member of the chamber of deputies, presented to the minister of finance the question: If two doctors of medicine have formed a partnership to practice their profession in common, and, in pursuit of this purpose, have contributed to a common fund to develop the possibilities of a sanatorium (founded, originally, by one of the partners, before a partnership was entered into), which they manage themselves and in which they give their personal attention to the patients who entrust themselves to them, are they subject to the tax on industrial and commercial profits, even though they employ a domestic and attending personnel, and are aided in the exercise of their profession by a physician who receives a fixed salary and, in addition, certain supplementary fees, varying in amount? The minister of finance replied:

Physicians who are directors of a sanatorium and give personal attention to patients who are under treatment must, if the principal purpose of their enterprise lies in the practice of their art, be regarded as devoting themselves solely to the practice of medicine, and therefore subject, as regards their total profits from their profession, to the tax on profits from noncommercial professions, even though they employ a domestic and an attending personnel attached to the establishment, and though they make use, accessorially, of the services of a salaried physician. On the other hand, if their profits are derived chiefly from the furnishing of board and lodging to the boarders in the sanatorium of which they are directors or from the work of a confrère to whom is entrusted the largest part of the care required by the patients, the operations in which they are engaged take on the character of a commercial enterprise, and the profits they derive therefrom must be subjected, in their totality, to the tax on industrial and commercial profits.

#### Hospital Ships in Time of Peace and in Time of War

Dr. Chastaing, surgeon-general of the navy, holds (*Archives de médecine et de pharmacie navales*) that a hospital ship should be, above all, a hospital. It should offer the same resources and give the same care and attention to patients that a hospital on land affords. To accomplish this, the first essential is to have wards in which the beds are conveniently arranged, preferably in a single row. Superimposed beds (double deckers) should be abolished. Separate isolation wards should be provided for patients with contagious diseases, tuberculosis and dysentery, and for psychiatric and for hopeless cases. Almost all the wards should have an adjoining room in which patients may be examined and treated without being exposed to the gaze of the other inmates of the ward. A special room for the use of the nurses should also be provided. There should be two operating rooms, a room for sterilization, a roentgenographic room, a pharmacy with an analytic laboratory, a morgue with a port-hole for burial at sea, and storerooms for hospital material and patients' effects.

A separate mess should be provided for ambulant patients. After meals have been served, the mess halls may be used as rest or lounging rooms. On the bridges, open spaces or passages roofed in with glass may be utilized as a promenade for convalescents or as places where patients may be given an airing or exposed to the sun.

Adjoining the several wards, there should be ample facilities for shower baths. A delousing room, a sulphuration room and steam dryers for clothing should be provided. Cold-storage rooms are indispensable for the preservation of meats and fresh foodstuffs. It is not out of place to have a morgue with a refrigerating chamber for the preservation of cadavers, such as was installed, about fifteen years ago, on board the American hospital ship *Relief*.

The medical personnel of a hospital ship should be sufficiently large and so habituated to life at sea as to be in a position to face any situation that may arise at any time. In regard to the number of nurses necessary, from 8 to 10 per cent. of the bed capacity of the hospital constitutes an average estimate.



In time of war, hospital ships may not be used for any purpose other than as hospitals. The chief surgeon should be on board the highest representative of authority, charged with the execution of orders that he receives directly from higher authorities, and not dependent on the captain. On board mixed transports, the medical director should be the supreme authority in the hospital section.

### BELGIUM

(From Our Regular Correspondent)

Jan. 20, 1923.

#### Dyspnea and Pneumothorax

At a recent meeting of the Academy of Medicine, Dautrebände and Spehl presented an important study on the causes of dyspnea and of death in open pneumothorax. They conclude that surgical pneumothorax induces dyspnea owing to anoxemia, and that this condition, characterized mainly by a superficial and rapid respiration that soon becomes dangerous, can be combated by the administration of oxygen.

#### Spermatic or Seminal Cysts

Before the Belgian Urologic Society, Dr. Cantinaux presented recently the results of his researches on the origin of bilateral spermatic cysts, and discussed their relationship with syphilis.

#### Drainage in Empyema

Speaking before the Belgian Surgical Society, Willems stated that he had tried several times reversible drainage, but that he had obtained only mediocre results; for generalized purulent pleurisy, at least, he regards it as insufficient. In the case of patients confined to the bed, he performs a posterior thoracotomy (Walther method) in the costovertebral groove at the level of the tenth or eleventh intercostal space. In the less grave cases, when the patient can sit up early, Bérard's technic is advantageous: lateral thoracotomy at the anterior axillary line, resection of the seventh rib with insertion, the patient sitting upright, of a drain at the lowest point. The main point in order to prevent the formation of pleural fistulas is to use short drains that do not penetrate the pleura but are just long enough to keep the wound in the thorax open.

#### Poisonous Mushrooms

Before the Société royale des sciences médicales et naturelles of Brussels, M. Dekeyser presented a proposal concerning the control and supervision of the sale of mushrooms. After some discussion, the following resolution was unanimously adopted:

The Société royale des sciences médicales et naturelles of Brussels, in view of the dangers that the public incurs owing to the absence of control of the sale of mushrooms, has passed a resolution favoring a strict supervision of this traffic. It has decided to send the text of this resolution to the provincial and communal authorities, the Conseil supérieur d'hygiène and also to the public press.

#### Thymectomy

Before the Société médico-chirurgicale of Brabant, Dr. Marique presented the case histories of fifteen children on whom he has operated for hypertrophy of the thymus. He performed an extracapsular thymectomy according to the technic of Veau and Olivier. The operation is exceedingly simple. The skin incision is as for a low tracheotomy, slightly inclined downward. Keeping precisely on the middle line, the operator, pushing the sternothyroid muscle aside, reaches the thymic capsule, which, when opened, allows the two lobes of the thymus to be easily enucleated. Marique stated that the feeling of suffocation, which constitutes the main indication for the operation, is immediately relieved, and that the other symptoms likewise disappear very soon.

The patients operated on, when seen at irregular intervals, presented no anomalies of weight or height, which is not

surprising, since thymectomy is never total. By reason of the simplicity of the operation, it may be regarded as a competitor of radiotherapy, and it has the advantage that it can be performed in remote places or in urgent cases.

#### Domiciliary Treatment in Mental Cases

Dr. Boulenger presented to the Société de médecine mentale a communication that is of interest to psychiatrists and legislators alike; for, since the passage of the revised act of June 14, 1920, domiciliary sequestration has passed beyond the stage of mere care taking, but has not as yet developed to the point that it constitutes a consistent means of treatment in mental cases over which judicial authority exercises supervision and control. Sequestered mental patients should not be dependent solely on the devotion of relatives or on the constantly varying prejudiced opinions that they may entertain with respect to those mentally defective. These patients usually receive good physical treatment, but they lack the psychiatric treatment needed. It is now proposed that domiciliary sequestration shall be organized on a scientific and medical basis. This will require the creation of a special medical service and a special nursing personnel in each province or judicial district, the medical service to consist of one or more psychiatrists, aided by visiting nurses who have received special instruction, whose duty it shall be to advise, aid and supervise the mentally defective who are sequestered, and to counsel with the family that has assumed their care, in regard to their treatment. This seems to be the only way to render the act of 1920 effective.

#### The Proper Time for Osteosynthesis

M. Lambotte, the first proponent of osteosynthesis, discussed recently before the Société belge d'orthopédie the results of his experience with regard to the choice of the proper time for such intervention in fractures. Lambotte holds fast to his principle of not operating on diaphysal fractures under one to two weeks after the traumatism. He has observed that fractures operated on immediately show unmistakable evidence of retarded consolidation. He attributes this to the fact that the periosteum, during the first few days following the breaking of the bone, has not at yet regained its embryonal character. Immediate intervention is indicated only in case the bone fragments protrude through the skin, in grave arterial lesions, or in impingement of nerves. Epiphysal fractures, especially in children, are not subject to this rule and may be operated on at once; the same is true of fractures of the short bones.

### BERLIN

(From Our Regular Correspondent)

Jan. 27, 1923.

#### The Struggle Between the Health Insurance Societies and the Physicians

Many of the health insurance societies, owing to the bad economic conditions obtaining generally, are in financial straits. In compliance with governmental decrees, they have been compelled to increase the sick benefits; likewise their disbursements for medical treatment and medicines have been augmented, but after the recent avalanche of high prices, the reaction to which, in the form of higher wages, came but slowly, the capitation fees paid by the members of the health societies were not raised for some time, and the supplementary charges are, in many instances, several months in arrears. Owing to the heavier drains on their treasuries, together with diminished receipts, the financial condition of many health insurance societies has become so desperate that they have been compelled to petition loans from the central government, the governments of the federal states or the municipalities. The directors of the *Hauptkrankenkassenver-*



*band* (federation of public health societies, which includes district, industrial and provincial public health societies) immediately took advantage of these admittedly deplorable conditions to launch an attack against the principle of free choice of physician, which, for several decades, has been a bone of contention between them and the opposing organization of physicians; namely, the Leipziger Verband (the Leipzig league). As the most essential means of accomplishing their purpose, they demand the abolition of Section 182 of the federal act governing the administration of social insurance. This section provides that members of the health insurance societies, if they become ill, must be given not only sick benefits but also free medical treatment, free medicines and, in short, everything needed for their recovery. The directors of the federations of health insurance societies now demand that, in view of their depleted finances, as the main cause for which condition they allege the free choice of physician, free medical treatment, etc., be abolished, and that members who are taken ill shall receive solely a definite sum per day as a sick benefit. It is evident that the main purpose of social health insurance would be thwarted by any such modification of the law; for, especially at the present time, when workmen and employees, owing to the prevailing economic distress, often have not sufficient means at their disposal to buy the necessities of life, the sick members of the societies would frequently be tempted to divert to other purposes the sick benefits they received, instead of providing for themselves the needed medicines and medical treatment. Many of them would resort to quacks instead of consulting reputable physicians, which would invalidate one of the main purposes of health insurance. That the income of physicians would be thereby much impaired goes without saying, and, since, at present, a large part of their practice is derived from the health insurance societies, the physicians are quite justified, for material reasons, in their opposition to the proposal of the directors of the health insurance societies. Another matter that has a wide bearing on the situation is the fact that, just recently, the limit of income under which all persons are obliged to take out health insurance; that is, become a member of one of the health insurance societies, has been raised to 2,400,000 marks. It is fortunate that our leading statesmen are fully alive to the true situation of affairs, and it is pleasing to record that, a few days ago, the conferring committee of the reichstag rejected the demand of the directors of the health insurance societies for the abolishment of Section 182.

#### Personal

Professor Heubner, the senior German pediatrician, who for many years was head professor of pediatrics on the University of Berlin Medical Faculty, and who, since his retirement, has been living in a suburb of Dresden, celebrated, January 21, in the full vigor of health, his eightieth birthday.

The Heubner Prize, which was created in honor of Heubner's seventieth birthday and which is awarded, every three years, for the best work done in the field of pediatrics, has just been bestowed on Dr. Degkwitz, assistant physician in the Munich University Children's Clinic, for his application of an antimeasles serum. Degkwitz himself discussed the nature of his serum and the results he has secured with it in the *Deutsche medizinische Wochenschrift* (48:26 [Jan. 5] 1922). His results have since been confirmed by all German children's clinics.

Dr. Franziska Tiburtius, a woman physician of Berlin, celebrated, January 24, her eightieth birthday. She became at first a governess and teacher, and took up medicine later in life. As Germany, at that time, offered no opportunities to women desirous of studying medicine, she entered the

University of Zürich, where she studied from 1871 to 1875. After taking her degree in Zürich, she served for a time in the Women's Hospital in Dresden, under Professor Leopold, and then, in 1877, settled in Berlin. When later, through her work, she became known to a large circle of women, she founded, together with another woman physician, Emilie Lchmus, who has since died, a polyclinic, and afterward a hospital for women. This highly esteemed physician, who was the first champion of woman physicians in Germany, received on her eightieth birthday a hearty ovation at the hands of the woman physicians of the city.

#### Creation of a Government Institute for Medical Research

The Emperor William Academy for medicosocial education, which was formerly the Emperor William Academy for the advancement of military medicine, is to be transformed into a government institute for medical research. This large institute, which was completed just a few years before the war, is to turn over its excellent laboratories and its library, which is probably the largest medical library in Germany, to the service of scientific medical investigation. Further details will be given when the plans for the transformation have been fully matured.

#### Increase of Alcoholism and Drunkenness

Prof. E. Meyer, director of the Königsberg Psychiatric University Clinic, states with regret, in the *Deutsche medizinische Wochenschrift*, January 5, that alcoholism and its sequels, which, during the war, for evident reasons, showed a decrease, have again begun, during the last few years, to rear their head. In his own clinic, the percentage of patients admitted for chronic alcoholism showed a marked increase during the fiscal year 1921-1922 (after the percentage for the year 1918-1919 had trebled). Of 795 men, 100, or 12.58 per cent., and of 503 women, 11, or 2.18 per cent., were admitted for alcoholism. Furthermore, in the case of thirty-three men and two women, the tendency to drink to excess constituted an essential factor in the causation of their mental derangement. Professor Meyer advocated that Germany should adopt regulations similar to those in force in the United States. It is true, that in the United States viniculture does not play as distinctive a rôle as it does in Germany, and the financial difficulties that stand in the way are harder for us to overcome. In spite of that fact, what needs to be done, should be done. For example, the production of beverages with high alcohol content, such as brandy, liqueurs, strong wines and strong beers should be prohibited, and the sale of alcoholic beverages in general should be strictly regulated.

#### VIENNA

(From Our Regular Correspondent)

Jan. 6, 1923.

#### Infant Mortality in Rural Districts

The Austrian Eugenic Society (Oesterreichische Gesellschaft für Bevölkerungs Politik) gets reports from all parts of the country from competent observers, with a view of controlling the development of the birth rate and public health. Two medical men, Dr. Narcshuber and Dr. Gerhardinger, have studied for the society the conditions prevailing among the agricultural population of Upper Austria and the Tyrol, two typically conservative and old fashioned provinces, 90 per cent. of the population being peasants. Their report is a shock to all persons accustomed to the conditions of poverty in towns and cities. Infant mortality and infant morbidity is, in our minds, inseparably connected with poverty and want. And it is a revelation to city dwellers to learn that, among peasants who for many years have enjoyed excellent incomes and have hoarded treasures and do not



even know from hearsay the lack of nourishing food, infant mortality exceeds by far the highest statistics for Vienna, with its hundreds of thousands of underfed children.

In the capital, 9.9 per cent. of all children born in 1920 died within their first year of life. In upper Austria, the figure was 21.1 per cent., in Pyrot, 27 per cent., while in Styria and Carinthia, also rural provinces, the rate was 20 and 17.3 per cent., respectively. In the richest rural district of Austria, where a population of 767,000 exists, the average was 27.6 per cent., while in some villages 40 and 50 per cent. of all children died before the age of 12 months. In one hamlet (667 population), of seventy-six new-born babies, only one was alive after a year. In another district of the same province, a purely industrial one, where in 1913 there was an infant mortality of 17.6 per cent., it rose, in 1917, to 21.6 per cent., but it stands now at 19.1 per cent. What is the reason of the remarkable difference between the two populations? Hereditary influences can be ruled out, as only one child is born dead for each thirty-nine born alive, although syphilis among infants is now more frequent, owing to the effects of the war. The only real cause is the manner of rearing children. The main reason for the excessive death rate among young infants is artificial feeding. Among our peasants, it is practiced from the first day of life. An inquiry among the midwives of these districts showed that barely 70 per cent. of these infants are ever given the breast. This is not due to inability of the peasant women to nurse their infants or to any defect on the child's part, but to the absence of knowledge of the importance of breast feeding, and to old customs. Farinaceous food and cabbage and oatmeal are included in the daily fare of the new-born, and bottle feeding is practiced to excess, without the slightest attention to sterilization of the bottle or the contents or the quantity, or periods of rest. There is no trace of efficient nursing, no knowledge of the most primitive hygienic principles.

Tuberculous persons, who are very numerous among the rural population in spite of all the hygienic possibilities of fresh air and good food, are allowed to mix freely and play with even the youngest children. Naturally, whole families are thus extinguished, once an infection is started. Alcohol, in the shape of cider, is not withheld even from infants; and superstition is paramount even among the midwives, in an amazing degree. The reporters point out that the rural districts are suffering from an alarming want of primitive knowledge, owing to the old-fashioned methods of government and absence of schools, while the ceaseless efforts of physicians in the towns have influenced nearly all mothers to give their babies the breast. Perhaps the lack of other food and of milk is also a factor. The rich peasant mother shrinks from her maternal duty because of laziness and of bad examples. Here is a most fruitful field for the intervention of the board of health, and in this country, where religion plays such an important part among the peasant population, influence will have to be brought to bear on the Roman Catholic church, to induce its priests to act as apostles of modern hygiene in these rural provinces. Otherwise, race suicide is an absolutely sure consequence.

## Marriages

EDWARD MITCHELL HANRAHAN, JR., to Miss Evelyn Barton Randall, both of Baltimore, February 3.

LEO W. ZIMMERMAN, Timblin, Pa., to Miss Katherine Zapp of Louisville, Ky., January 31.

CORTLAND MYERS to Miss Anne Esther Hughes, both of Los Angeles, January 26.

## Deaths

**John R. Hoffman** ☉ Wilmette, Ill.; Northwestern University Medical School, 1891; member of the American Academy of Ophthalmology and Oto-Laryngology and vice president of the Chicago Ophthalmological Society; secretary and professor of ophthalmology at the Chicago Eye, Ear, Nose and Throat College; for twenty-five years superintendent of the Chicago Eye, Ear, Nose and Throat Hospital; aged 57; died, February 19, of thrombosis.

**Clement Belton Lowe**, Vineland, N. J.; Jefferson Medical College of Philadelphia, 1887; also a pharmacist; emeritus professor of materia medica at the Philadelphia College of Pharmacy; at one time president of the Pennsylvania Pharmaceutical Association and vice president of the American Pharmaceutical Association; editor of *Plants of the Philippines* and other botanical works; aged 76; died, February 6.

**William Augustus Hardaway** ☉ St. Louis; St. Louis College of Physicians and Surgeons, 1870; Missouri Medical College, 1873; formerly professor of diseases of the skin at Washington University Medical School, St. Louis; at one time president of the American Dermatological Association; author of "Essentials of Vaccination" and "A Manual of Skin Diseases"; aged 73; died, February 3.

**Mary Thomas Miller** ☉ Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1899; member of the Obstetrical Society of Philadelphia and the Philadelphia Pediatric Society; on the staff of the West Philadelphia Homeopathic Hospital, where she died, February 8, from pneumonia, aged 53.

**Clarence M. Slack**, St. Petersburg, Fla.; Jefferson Medical College of Philadelphia, 1865; member of the Florida Medical Association; veteran of the Civil and Spanish-American wars; formerly superintendent of the Florida Baptist Children's Home, Arcadia; aged 81; died, January 28, from senility.

**David C. Peyton** ☉ Jeffersonville, Ind.; University of Louisville Medical Department, Louisville, Ky., 1886; member of the Medical Society of Virginia; veteran of the Spanish-American and World wars; superintendent of the Indiana Reformatory; aged 62; died, February 6, from pneumonia.

**Rufus Joshua Cassel**, Mount Vernon, Wash.; University of Minnesota Medical School, Minneapolis, 1901; member of the Washington State Medical Association; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 48; died, January 30, from heart disease.

**Richard J. Hill** ☉ Minneapolis; Jefferson Medical College of Philadelphia, 1875; member and at one time president of the Minnesota State Medical Association and the Hennepin County Medical Society; formerly on the staff of St. Mary's and Asbury hospitals; aged 69; died, February 2.

**John Miles Martin**, Grove City, Pa.; Bellevue Hospital Medical College, New York, 1874; member of the Medical Society of the State of Pennsylvania; served five terms as state legislator; veteran of the Spanish-American War; aged 74; died, February 5, following a long illness.

**Joseph Coles Brick** ☉ Philadelphia; Jefferson Medical College of Philadelphia, 1894; member of the American Proctologic Society; associate professor of proctology at his alma mater; on the staff of the Jefferson Hospital; aged 61; died, February 4, from carcinoma.

**James William Hinckley** ☉ Boston; Tufts College Medical School, Boston, 1898; formerly instructor of gynecology at his alma mater; member of the Boston Society of Medical Sciences; on the staff of St. Elizabeth's Hospital; aged 65; died suddenly, February 7.

**William Napier Keefer**, Toronto, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1869; L.R.C.S., Edinburgh, and L.S.A., London, 1869; served in the British army during the Afghan War, in India and Egypt; aged 78; died, January 27.

**Isaac Arthur Harris**, Weaverville, N. C. (licensed, North Carolina, 1885); member of the Medical Society of the State of North Carolina; Confederate veteran; president of the Farmers' and Traders' Bank; aged 84; died, December 29, from cerebral hemorrhage.

**Israel Lurier**, New York; Medical School of Harvard University, Boston, 1914; served in the M. C., U. S. Army, dur-



ing the World War, with the British and the American armies; on the staff of the Bellevue Hospital, where he died, February 5, aged 34.

**Edward S. King**, Bluff City, Tenn.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1890; member of the Tennessee State Medical Association; aged 57; died, December 10, from cerebral hemorrhage.

**Victor Oscar Saphro** ⊕ Los Angeles; University of Colorado School of Medicine, Denver, 1910; lieutenant, U. S. Naval Reserve Force; aged 37; died, February 3, at the Fitzsimons General Hospital, Denver, from bronchopneumonia.

**Albert Butler Stone** ⊕ Lamar, Mo.; Northwestern Medical College, St. Joseph, 1890; president of the Barton County Medical Society; also a druggist; aged 73; died, February 3, at Pittsburg, Kan., from carcinoma of the prostate.

**Richard Gay De Puy**, Jamestown, N. D.; University of Michigan Homeopathic Medical School, Ann Arbor, 1881; member of the North Dakota State Medical Association; aged 67; died, February 4, from influenza.

**Joseph Adkemar Jeannotte** ⊕ Leadville, Colo.; Laval University Faculty of Medicine, Quebec, Que., Canada, 1875; mayor of Leadville; on the staff of St. Vincent's Hospital; aged 68; died, January 31, from pneumonia.

**George Bethune Best**, Englewood, N. J.; New York Homeopathic Medical College and Flower Hospital, New York, 1887; member, and at one time president of the state board of health; aged 63; died, January 26.

**William H. Crow**, Pavo, Ga.; Atlanta Medical College, Atlanta, 1895; member of the Medical Association of Georgia; aged 52; died, February 4, at Sylvester, from injuries sustained in an automobile accident.

**Isabella Hursen** ⊕ Chicago; Chicago Physio-Medical College, 1902; formerly adjunct professor of medicine at her alma mater; aged 55; died, February 11, from heart disease, following an attack of influenza.

**John H. Rice**, Quincy, Ill.; Eclectic Medical Institute, Cincinnati, 1878; Rush Medical College, Chicago, 1898; member of the Illinois State Medical Society; aged 66; died, January 31, following a long illness.

**William A. Ross**, Forkshoals, S. C.; Southern Medical College, Atlanta, Ga., 1892; member of the South Carolina Medical Association; aged 56; died at Greenville, January 30, from heart disease.

**William F. Hoey**, Frederica, Del.; Hahnemann Medical College and Hospital of Chicago, 1889; aged 61; died, January 24, at the Homeopathic Hospital, Wilmington, from epidemic (lethargic) encephalitis.

**Nelson H. McNew**, Carlisle, Ky. (licensed, Kentucky, 1893); former county judge; for twelve years editor of the *Carlisle Democrat*; aged 86; died, December 13, from cerebral hemorrhage.

**James Claude Wilhoit**, Manhattan, Kan.; University of Louisville Medical Department, Louisville, Ky., 1907; member of the Kansas Medical Society; died, February 17, from pneumonia.

**John W. Kidd**, Burnsville, W. Va.; College of Physicians and Surgeons, Baltimore, 1884; formerly member of the state legislature; aged 66; died, February 2, from cerebral hemorrhage.

**Robert Orrin Burke**, Lansing, Mich.; Chicago College of Medicine and Surgery, Chicago, 1915; member of the state board of health; aged 37; died, December 16, from pneumonia.

**Milton Emerson Lake** ⊕ Erie, Kan.; Medical College of Indiana, Indianapolis, 1885; also a druggist; aged 33; died, February 7, from acute dilatation of the heart and pneumonia.

**William S. Martin**, Tuscola, Ill.; Bellevue Hospital Medical College, New York, 1877; member of the Illinois State Medical Society; aged 85; died, February 5, from senility.

**Daniel B. Warren**, Wellston, Ohio; Medical College of Ohio, Cincinnati, 1878; member of the Ohio State Medical Association; aged 69; died, February 1, from pneumonia.

**James Philip Roy**, Richmond, Va.; University of Virginia Department of Medicine, Charlottesville, 1884; member of the Medical Society of Virginia; aged 61; died, January 25.

**Marvin Le Roy Smoot** ⊕ Fayetteville, N. C.; University College of Medicine, Richmond, Va., 1903; aged 46; died, February 6, following a long illness.

**William D. Vanderpool**, Montesano, Wash.; Missouri Medical College, St. Louis, 1882; also a pharmacist; aged 70; died, December 31, from carcinoma of the stomach.

**James Nelson Ayers**, Cressey, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1889; aged 65; died recently, from carcinoma of the stomach.

**Henry B. Wiggs**, Russellville, Ark.; Memphis Hospital Medical College, Memphis, Tenn., 1896; also a druggist; aged 49; died, January 29, at Colorado Springs, Colo.

**Joseph Robert Lee Hardesty**, Washington, D. C.; Jefferson Medical College of Philadelphia, 1856; Confederate veteran; aged 87; died, February 3, from senility.

**Reuben C. Fisher**, Belton, Texas; Louisville Medical College, Louisville, Ky., 1893; aged 52; was found dead in his office, January 30, from heart disease.

**Edward S. Crump**, Detroit; Detroit College of Medicine and Surgery, 1917; aged 33; died, February 2, at the Harper Hospital, from epidemic (lethargic) encephalitis.

**Phillip A. Conner**, Whitton, Ark. (licensed, Arkansas, 1907); aged 43; died, January 30, from a bullet wound in the brain, presumably self-inflicted.

**Sidney Thompson** ⊕ Humboldt, Tenn.; Vanderbilt University Medical Department, Nashville, 1882; aged 61; died, January 29, from heart disease.

**L. C. Downtain**, Eastland, Texas; College of Physicians and Surgeons, Keokuk, Iowa, 1881; aged 63; died, February 8, from cerebral hemorrhage.

**Hitzel C. Le Blond**, McCurdysville, W. Va.; Medical Department of Western Reserve University, Cleveland, 1881; aged 65; died, January 29.

**Victor Veranus Thompson**, Waldoboro, Me.; Medical School of Harvard University, Boston, 1911; aged 56; died suddenly, January 26, of heart disease.

**George Clinton Evans**, Tulsa, Okla. (licensed, years of practice); aged 43; died at the Oklahoma Hospital, December 13, from senility.

**Francis Ignatius Drobinski** ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1906; aged 41; died, February 9, from angina pectoris.

**Walter A. Lamont**, Denver; Medical Department University of Tennessee, Nashville, 1883; aged 75; died, January 27, at Canon City, Colo.

**Henry H. Moorehouse**, Toronto, Ont., Canada; Victoria University Medical Department, 1871; aged 76; died, December 23, at Oakville.

**Howard Luther Diehl**, Gettysburg, Pa.; Hahnemann Medical College of Philadelphia, 1876; aged 64; died, February 2, from pneumonia.

**Charles C. Eldred** ⊕ Joliet, Ill.; Jefferson Medical College of Philadelphia, 1875; aged 73; died, February 4, following a long illness.

**Jesse Marvin Williams**, Los Angeles; Wisconsin College of Physicians and Surgeons, Milwaukee, 1903; aged 46; died, February 4.

**James Wayne Martin**, Wynona, Okla.; Barnes Medical College, St. Louis, 1899; aged 48; was shot and killed by bandits, December 1.

**Walter Leon Culbertson** ⊕ Philadelphia; Maryland Medical College, Baltimore, 1911; aged 40; died, February 3, from pneumonia.

**Harriett Judd Sartain**, Philadelphia; Eclectic Medical Institute, Cincinnati, 1854; aged 93; died, February 8, from senility.

**John R. Harwell**, Nashville, Tenn.; University of Nashville Medical Department, 1864; aged 86; died, February 7, from senility.

**John Hardin Stewart, Sr.**, Exeter, Ill.; Rush Medical College, Chicago, 1870; died, February 2, from cerebral hemorrhage.

**David Hume Rice** ⊕ Colorado Springs, Colo.; Missouri Medical College, St. Louis, 1885; aged 67; died, January 25.

**A. S. Byrne Nellis**, Dayton, Ohio; Chicago Homeopathic Medical College, Chicago, 1882; aged 62; died, January 25.

**Noah P. Buskirk**, Round Bottom, Ohio (licensed, Ohio, 1896); aged 78; died, January 17, from chronic nephritis.

**J. W. Powell**, Evansville, Ind.; Louisville Medical College, Louisville, Ky., 1881; aged 77; died, February 1.

**Elijah J. Tucker**, Oroville, Calif.; American Medical College, St. Louis, 1882; aged 72; died, January 30.



## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

### ALLEN'S GOITER TREATMENT

At Sheffield, Iowa, the Allen Remedy Company conducts a mail-order business in "Dr. C. J. Allen's Goiter Treatment." Business is drummed up, apparently, by means of agents and traveling representatives. During the past few months several inquiries have been received about this product. We quote from some of them; first from a Wisconsin physician:

"I have under my care a patient who had developed a toxic adenoma of the thyroid as a result of taking the Allen Goiter medicine made at Sheffield, Iowa. This patient was examined at our clinic some months ago and a clinical diagnosis was made of non-toxic, multiple adenomata. She now appears after having taken this medicine for several months with all the symptoms of thyrotoxicosis, including a basal metabolic rate of plus 44 per cent. She reports a neighbor who is in the same condition as herself as a result of taking this treatment. Dr. \_\_\_\_\_ of this city today told my brother of two cases coming to his attention in the past week, both of whom had been taking this treatment, and one of whom is so toxic that she may not live."



From a physician in Iowa:

"I wish to secure some information regarding the Allen Remedy Company of Sheffield, Iowa, and especially regarding Dr. C. J. Allen's Goiter Remedy put out by this company. Several patients of mine with different types of goiter have been solicited by a Mr. A. D. Tabor of Cedar Rapids, Iowa, and some of them have asked me for an opinion regarding it."

While a South Dakota physician writes:

"Under separate cover, I am mailing you a bottle of dope put out by the Allen Remedy Co. of Sheffield, Iowa. This has been sold in our community lately as a sure cure of goiter of all kinds. Can you enlighten me as to its relative merits for such a sure fire cure and also what the medicinal ingredients might be?"

According to our records, C. J. Allen of Sheffield, Iowa, died in August, 1917, of tuberculosis. He was graduated by Rush Medical College in 1887. The records fail to show that he was ever a member of his local medical society. The advertising matter put out by the Allen Remedy Company states that C. J. Allen "discovered" his cure some years ago, that its fame began to spread and as a result, "C. J. Allen became a goiter specialist and was recognized as such by many leading medical authorities." This statement, of course, is unqualifiedly false. A careful search of medical literature for thirty years past fails to show that C. J. Allen ever made a single contribution to scientific medical literature.

The "treatment" consists of sixteen four ounce bottles of the preparation, for which \$90.00 is charged. Those using the product are told to take a teaspoonful with water after each meal. They are especially instructed to "massage the goiter both morning and evening" and, in black-faced type, are told that "This is very important."

Some of the advertising material put out by the Allen Remedy Company contains a testimonial that is printed under the title "Doctor Recommends Treatment." It purports to be from one "G. W. Lee, M.D." of Sheffield, Iowa, and is dated Oct. 10, 1922. Dr. Lee states that he, too, was graduated by Rush Medical College and has "practiced medicine in Sheffield fourteen years." He states further that he knows "all of the ingredients" in the preparation and assures the public that "there is nothing harmful in this treatment." G. W. Lee is an employee of the Allen Remedy Company and is described as "Head of Medical Advisers' Department." According to

our records, George W. Lee was graduated by Rush Medical College in 1869 and went to Sheffield, Iowa, in 1886. A few years later he went to Mason City, Iowa, and later still moved to Wisconsin. At the time the Propaganda department was investigating the itinerant quacks a Wisconsin physician wrote to THE JOURNAL stating that a concern known as the "Northwestern United Doctors" then operating in Wisconsin had one G. W. Lee in charge of one of its offices.

Some original specimens of the Allen nostrum were secured and submitted to the A. M. A. Chemical Laboratory for analysis. The report follows:

#### LABORATORY REPORT

"Allen's Goiter Treatment is a reddish-brown, syrupy liquid having an acid reaction and an odor of sassafras and wintergreen. No information is given by the manufacturers concerning the composition of the preparation except that the presence of 4 per cent. of alcohol is declared. Alkaloids, benzoates, salicylates, glycerin, emodin-bearing drugs, potassium salts, sodium salts, and calcium salts are absent, or present only in traces. Qualitative tests demonstrate the presence of an ammonium salt in very small amounts, an iron salt (in the ferrous state), iodid ions, sucrose (cane sugar), small quantities of a phosphate, coloring matter and alcohol. The iodid is present partly as ferrous iodid and partly as free hydrogen iodid. The ammonia, the iron and the iodine were determined separately. The iron found was equivalent to about 0.83 gm. of ferrous iodid per 100 c.c. The ammonia found was equivalent to about 0.06 gm. of ammonium iodid per 100 c.c. and the hydrogen iodid was equivalent to about 1.74 gm. per 100 c.c. The alcohol content was 3.98 per cent. Each fluid dram (teaspoonful) of this preparation, therefore, contains approximately 1 grain of hydriodic acid and one-half grain of ferrous iodid.

"From the results obtained it is concluded that Allen's Goiter Treatment consists essentially of ferrous iodid and hydrogen iodid (hydriodic acid) in a colored and flavored syrup."

The profits made from selling four pints of a syrup of ferrous iodid and hydriodic acid for \$90.00 must surely not be inconsiderable. This, however, is a minor indictment. The most serious feature of the business is the viciousness of the indiscriminate sale of an iodid mixture to those who may be and are likely to be suffering from exophthalmic goiter. Add to this the pernicious suggestion that the victim should massage the thyroid daily and it is not surprising that physicians are beginning to report serious results from the use of this preparation.

## Correspondence

### THE EARLIEST RECOGNITION OF APPENDICITIS—AGAIN

To the Editor:—Apparently Dr. R. D. Rudolf of Toronto was the first to call attention to the interesting fact that Lorenz Heister seems to have been the first to describe a case of typical appendicitis, namely, in his account of a post-mortem performed by him publicly at Altdorf in November, 1711. Dr. Rudolf's paper (*Canad. M. A. J.*, May, 1913) reprints in full this curious "Observation CX" from what he says is "a translation by a Dr. Daniel Cox, of London, under date of 1755, and the book is entitled 'Heister's Cases in Surgery.'" Dr. Rudolf gives the title in this form because the title-page and following leaves were lacking in his copy (which he kindly lent to Sir William Osler, who showed it to me when I showed him the original). In fact, the English title-page reads:

MEDICAL, CHIRURGICAL, AND ANATOMICAL CASES AND OBSERVATIONS. By Laurence Heister, M.D., Senior Professor of Physic and Surgery in the University of Helmstadt, first Physician and Aulic Counsellor to his serene Highness the Duke of Brunswick, Member of the Imperial Academy of Sciences, and Fellow of the Royal Societies of London and Berlin. With Copper-Plates, illustrating the Descriptions in the respective Cases. Translated from the German Original By George Wirgman. London: Printed by J. Reeves, For C. Hitch etc. MDCCLV.



It is a large quarto of more than 700 pages. The preface is by Dr. Shaw, and the introduction by Daniel Cox, who declares his ignorance of German. It is worth noting that Lord Lister owned a copy of this translation (No. 1285 in Catalogue 733 [1913] of Henry Sotheran & Co., London), and may have read the passage in question.

Dr. Rudolf does not attempt to give any information whatever in regard to the German original, which is, of course, necessarily earlier than the English translation. Its title-page reads:

D. LAURENTIUS HEISTERS . . . MEDICINISCHE CHIRURGISCHE UND ANATOMISCHE WAHRNEHMUNGEN NEBST KUPFERN UND GEDOPPELTEN REGISTERN. Mit Königl. Pöhlisch und Churfürstl. Sächsischem allergnäd. Privilegie. Rostock, verlegt Johann Christian Koppe. 1753. Quarto, with Heister's portrait, engraved by A. Beck.

A second volume appeared in 1770, four years after Heister's death.

In the original the appendicitis observation is numbered 111 instead of CX. Dr. Erich Ebstein of Leipzig has recently given a photographic facsimile of the page (194) in question, so that it is now readily accessible to all. It appears in *Virchows Archiv für pathologische Anatomie* 226:98, 1919. Ebstein thanks me there in a note because it was I who first called his attention to the passage in Heister, and he then (1914) wrote to me asking for the precise reference. The number of the *Canadian Medical Association Journal* containing Dr. Rudolf's article was handed to me in the office of the editor, my friend Dr. William W. Francis, in May, 1913. Within a few days I secured a fine copy of the original edition of Heister's book, and later obtained the English translation also. The original was lent to Dr. Howard A. Kelly in 1914. Both original and translation were presented to the "Bibliotheca Osleriana" in 1921, and thus will go to the medical faculty of McGill University.

I should perhaps mention that the New York Academy of Medicine owns an elaborate and valuable manuscript bibliography of appendicitis by the late George M. Edebohls. In this some one has added in pencil a reference to Heister, 1755, p. 136, Case 110.

LEONARD L. MACKALL, Savannah, Ga.

#### ORGANIZATION OF WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

*To the Editor:*—Since the last session of the American Medical Association, when the organization of a Woman's Auxiliary of the American Medical Association was authorized, it has been gratifying to note the progress made. Several states have been organized and are on a working basis. Many others are in the process of organization, having given favorable opinions, so that by the time of the San Francisco session, it is hoped there will be a large number of states organized, with delegates and representatives in attendance.

The Woman's Auxiliary of the American Medical Association is no longer a dream, but a realized entity, and it is felt that if all the states knew that the others were endorsing and furthering the movement, some prejudices could be removed on the ground that it is an experiment, for such is far from the case.

This means is taken to give any state, desirous of organization, an opportunity to get any information that may be needed, should any have been overlooked, in order that there may be time to organize and have representatives at the session of the American Medical Association in San Francisco; for it is an assured fact that a large proportion of the states will be represented.

Should any desire information, the corresponding secretary, Mrs. H. L. D. Kirkham, 3711 Mount Vernon Street, Houston,

Texas, will be very glad to furnish the information needed, and be of any assistance possible in organization.

Mrs. H. L. D. KIRKHAM, Houston, Texas.  
Corresponding Secretary, Woman's  
Auxiliary to the American  
Medical Association.

#### THE PREVENTION OF CONCEPTION

*To the Editor:*—The Chicago Gynecological Society is desirous of giving proper publicity to its present stand on the subject of the regulation of conception. The following paragraphs are, therefore, submitted for publication:

In accordance with a resolution passed by the Chicago Gynecological Society, the undersigned committee sent to all of the members of the society a questionnaire dealing with various phases of the general subject of regulation of conception. The replies were analyzed and submitted to the society at its regular business meeting of January 19, and the society unanimously approved of the following conclusions:

1. It is against public policy that information as to contraceptives should be given to the general public.
2. Information as to the prevention of conception should be given wherever indicated to wives and husbands by physicians, either privately or in existing clinics and dispensaries.
3. Special clinics for the dissemination of this information are neither necessary nor desirable, nor should nursing organizations be utilized to give out such instructions.
4. Risk to the mother, based on ill health, whether due directly to existing disease or to the drain of too frequent childbirth under unfavorable home conditions, is the essential indication for instruction in prevention of conception.
5. All mechanical devices used by the wife, as well as strong chemical douches, are discountenanced.

RUDOLPH W. HOLMES, M.D.,  
JOSEPH L. BAER, M.D.,  
N. SPROAT HEANEY, M.D.,

Chicago.

#### Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

#### DANGERS OF WORK WITH ROENTGEN RAY

*To the Editor:*—Some time ago a news item stated that an office building in Paris had refused to lease rooms for roentgen-ray work, alleging danger to other tenants. 1. What practical dangers exist which might warrant such action, and what principles apply which might enable the superintendent of a hospital, office building or person similarly placed to know what measures are necessary to insure the safety of persons constantly placed in contiguous or nearby rooms? 2. What physical ill effects might be expected to follow failure to supply such protection? Please omit name and address.

C. E. W., Pennsylvania.

ANSWER.—1. There are no conclusive reports on this particular question, but there are instances of practical application which permit certain conclusions based on demonstrable facts regarding the alleged dangers of roentgen rays at points beyond the walls of the roentgen-ray room. The danger to persons working in rooms above, below and on the several sides of the room in which there is an active roentgen-ray tube is virtually nil. A practical demonstration of the possible dangers to others than those actually engaged in operating roentgen-ray tubes is to be seen daily in the laboratories of a large manufacturer of roentgen-ray equipment where, during the process of manufacture of the Coolidge tube, persons work in rooms above, below and alongside the roentgen-ray tubes which are in action all day long during the process of rarefaction. This work has been going on for several years, and for the last year and a half (approxi-



mately) some of the newer deep therapy tubes have been in action for long periods of time, running as high as 295,000 volts, while many others are operated at around 200,000 volts. On careful inquiry it appears that in no instance has an untoward action been found on any of the numerous workers who constantly are occupied in the immediate vicinity of these roentgen-ray tubes. Blood tests have been repeatedly made on these employees in order to detect any untoward action of the rays. In order to insure a proper peace of mind in any one concerned, as those in neighboring rooms, it is regarded as advisable to provide some protection against the supposed deleterious action of roentgen rays. For this reason some roentgenologists place a lining of sheet lead (from  $\frac{1}{32}$  to  $\frac{1}{16}$  inch) on the walls of the rooms in which the roentgen ray is used. This sheeting is often carried from the floor up to about 8 feet, although to be entirely consistent it should cover all the walls, ceiling as well as the floor, thus making a six sided lead lining. (Such a lead lining should always be covered with pantasote or similar material; it ought not to be left bare, to avoid lead poisoning of the technicians and assistants). This, of course, is in addition to the usual standard lead-glass bowl around the roentgen-ray tube, lead protection screen or lead lined booth for the operator, which are an actual necessity in all instances. Some go to ridiculous extremes in providing unnecessarily thick lead linings which are costly; many others use no such lead lining at all. Obviously, the roentgen-ray operator is the one who requires most protection from untoward actions of the roentgen-ray, mainly because he is continually engaged in the work and is in close proximity to the tube. It is well known that in applying the very penetrating roentgen ray such as is now coming into extended use in the treatment of deep-seated malignancies, the unprotected roentgen-ray tube will result in a considerable quantity of the rays reaching into the neighboring rooms. However, it would be the grossest negligence were one to use such a roentgen-ray tube without protection, such as a standard lead-glass bowl, metal parts supporting it, proper filters of copper, and the like, all of which serve to reduce the amount of roentgen ray which reaches places other than the area being treated. In the case of a so-called "deep roentgen-ray treatment" using 200,000 or more volts, using the accepted formula as to filter, target-skin distance, milliamperage, etc., the amount of roentgen ray which escapes would be too small to be dangerous. The amount of ray which passes through 1 mm. of copper, plus 1 mm. of aluminum, through the small diaphragm opening which entirely confines the direct roentgen rays within the body of the patient, and the attenuation of the roentgen-ray strength, which decreases rapidly with the added distance traveled, is very small. The amount of roentgen ray which reaches a person in a neighboring room or in the room above or below, from 15 to 20 or more feet away, separated by the modern concrete and steel construction of floors, ceilings and walls, would be so small that it would not be sufficient to cause tissue or blood changes, even if continued over considerable periods of time.

2. The physical changes to persons acted on by the roentgen ray such as is suggested by the question, if it really did occur, would probably be the same as changes occurring in unprotected roentgen-ray workers, namely, a leukopenia. Skin changes under the conditions mentioned in the inquiry are unheard of.

#### TREATMENT OF ICHTHYOSIS

To the Editor:—Please describe the most satisfactory treatment for congenital ichthyosis (a mild case).  
G. T., Wyco, W. Va.

ANSWER.—There is no satisfactory treatment for ichthyosis. It is a congenital defect in the skin which cannot be corrected. In addition to the excessive horn formation, there is in ichthyosis a deficiency of sweat and sebaceous secretion so that the skin is abnormally dry. The most that can be done for the cases is to supply this deficiency of fat in the skin by the local application of fat in some form. This can be done by the inunction of any sort of a bland ointment. Petrolatum or cold cream is perhaps as good as any. Occasionally on localized areas where the horn is thick it can be softened and diminished by the addition of salicylic acid—from 10 to 60 grains to the ounce of ointment. Bathing also softens the horn, and warm baths prolonged to ten or fifteen minutes are useful. But they should be followed by the inunction of a bland fat immediately afterward, or they increase the dryness of the skin.

## Medical Education, Registration and Hospital Service

### COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vighne, Juneau.  
IDAHO: Boise, April 4. Dir., Mr. Harry L. Fisher, Boise.  
IOWA: Des Moines, March 8-10. Sec., Dr. Rodney P. Fagen, State House, Des Moines.  
MAINE: Portland, March 13-14. Act. Sec., Dr. Adam P. Leighton, 192 State St., Portland.  
MONTANA: Helena, April 3. Sec., Dr. S. A. Cooney, Power Bldg., Helena.  
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.

### Arkansas November Examination

Dr. J. W. Walker, secretary, Arkansas State Board of Medical Examiners, reports the written examination held at Little Rock, Nov. 14-15, 1922. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Seven candidates were examined, all of whom passed. Eighteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Little Rock.....	(1910)	79,	79.5
Tulane University .....	(1922)		92.1
Harvard University .....	(1922)		87.9
Memphis Hospital Medical College.....	(1911)	77.5, (1913)	79.5
Vanderbilt University .....	(1888)		79.1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Atlanta Medical College.....	(1915)		Georgia
Southern Medical College.....	(1891)		Georgia
Northwestern University.....	(1902)	Oklahoma, (1922)	Mississippi
Indiana University .....	(1921)		Indiana
University of Maryland.....	(1904)		Dist. Colum.
Barnes Medical College.....	(1911)		Missouri
Kansas City Medical College.....	(1896)		Oklahoma
Memphis Hosp. Med. Coll. (1902)	Tennessee, (1904), (1912)		Mississippi
Meharry Medical College.....	(1914)	Texas, (1918)	Tennessee
University of Tennessee....	(1895)	Texas, (1921, 2), (1922)	Tennessee
University of Texas.....	(1920)		Texas

### Nebraska November Examination

Mr. H. H. Antles, secretary, Nebraska State Department of Public Welfare, reports the written examination held at Lincoln, Nov. 6-8, 1922. The examination covered 9 subjects and included 90 questions. An average of 70 per cent. was required to pass. One candidate took the examination and passed. Thirteen candidates were licensed by reciprocity. Two candidates were licensed to practice as chiropractors. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Chicago.....	(1906)		84.6

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery.....	(1909)		Illinois
Loyola University.....	(1916), (1921)		Illinois
Northwestern University.....	(1921, 2)	Illinois, (1922)	Iowa
Rush Medical College.....	(1921)	Michigan, (1922)	Illinois
Keokuk Med. Coll., Coll. of Phys. and Surg.....	(1908)		Kansas
College of Physicians and Surgeons, Baltimore.....	(1915)		W. Virginia
University of Maryland.....	(1919)		W. Virginia
Ensworth Medical College.....	(1906)		Kansas
Meharry Medical College.....	(1921)		Tennessee

### Florida October Examination

Dr. W. M. Rowlett, secretary, Florida State Board of Medical Examiners, reports the written examination held at Tallahassee, Oct. 10-11, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 41 candidates examined, 31 passed and 10 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Alabama.....	(1910)		77.6
Atlanta Medical College.....	(1914)		78.3
Emory University.....	(1915)	79, (1916) 79.2, (1917)	89.4
(1922) 77.6, 84.1, 87.2			
University of Georgia.....	(1891)	77.3, (1911) 77.4, (1918)	84.1
Chicago College of Medicine and Surgery.....	(1917)		80.3
Rush Medical College.....	(1889)	80, (1910) 90, (1921)	84.8
College of Physicians and Surgeons, Chicago.....	(1906)		94.9
Tulane University.....	(1919)	85.8, (1921)	81.9



Johns Hopkins University.....	(1917)	85.7, 89.3
University of Maryland.....	(1917)	80.6, (1922) 83.5
Harvard University.....	(1915)	80.6
University of Michigan Medical School.....	(1919)	88.5
College of Phys. and Surgs. in the City of New York.....	(1896)	75.2
Columbia University.....	(1904)	84.6
University of Buffalo.....	(1921)	86.3
Cleveland Medical College.....	(1895)	78.7
Ohio State University College of Medicine.....	(1918)	84.1
University of Oklahoma.....	(1916)	88
University of Pennsylvania.....	(1922)	84.7

## FAILED

University of Alabama.....	(1910)	63.6
Atlanta Coll. of Physicians and Surgeons.....	(1907) 56.1, (1905)	70.9
Atlanta School of Medicine.....	(1911)	71.3
University of Georgia.....	(1911)	70.6
Rush Medical College.....	(1884)	72.9
College of Physicians and Surgeons, Baltimore.....	(1884)	68.8
Kansas City Medical College.....	(1905)	72.7
Chattanooga Medical College.....	(1903)	44.4
University of St. Thomas, Philippine Islands.....	(1910)	65.6

## North Carolina December Meeting

Dr. Kemp P. B. Bonner, secretary, North Carolina State Board of Medical Examiners, reports that eight candidates were licensed by reciprocity and one candidate was licensed by endorsement of credentials at the meeting held at Durham, Dec. 12, 1922. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Atlanta Medical College.....		(1914)	S. Carolina
Indiana University .....		(1919)	Indiana
Louisville and Hospital Medical College.....		(1908)	S. Carolina
Medical College of Virginia.....		(1914), (1916), (1917)	Virginia
Medico-Chirurgical College of Philadelphia.....		(1913)	Penna.
Meharry Medical College.....		(1913)	Tennessee

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Pennsylvania.....	(1916)	N. B. M. Ex.	

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**Book Notices**

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THE KINGDOM OF EVILS. Psychiatric Social Work Presented in One Hundred Case Histories Together with a Classification of Social Divisions of Evil. By E. E. Southard, M.D., late Bullard Professor of Neuropathology, Harvard Medical School, and Mary C. Jarrett, Associate Director, Smith College Training School for Social Work. With an Introduction by Richard C. Cabot, M.D., Professor of Social Ethics, Harvard University, and a Note upon Legal Entanglement As a Division of Evil, by Roscoe Pound, Dean of the Harvard Law School. Cloth. Price, \$5.50. Pp. 707. New York: The Macmillan Company, 1922.

This book, which was almost ready for publication at the time of Dr. Southard's death, has been completed by his friends; it will stand as a lasting monument to his life and work. His collaborator, Miss Jarrett, who was Chief of Social Service at the Boston Psychopathic Hospital, directed the social treatment which is here recorded. This is the first book to be devoted to psychiatric social work, and illustrates and analyzes, in a most graphic and illuminating way, the problems with which this young but vigorous field of therapeutic endeavor is confronted. The facts presented go far to prove that, of a verity, social work is fundamentally psychiatric. The conditions of human life require that the individual adjust himself to organized society, to his associates, and to himself. The major fields of social work are therefore declared to be: public or governmental; social or voluntary, and individual or personal. Each requires special consideration from the social worker. The problems concerned are admirably illustrated by cases. The case histories which form the basis of the book, selected from a rich and intensively studied material, were not chosen to illustrate successes or failures in social treatment, but to bring out the types of evil with which society is confronted. In some cases one type of evil predominates; in others there are various combinations and corresponding degrees of complexity. The major evils are five: *morbi*, or diseases and defects of body and mind, the need of which is cure; *errores*, or educational deficiencies and misinformations, whose requirement is that we teach; *vitia*, or vices and bad habits, to remedy which we must train; *litigia*, or legal entanglements in and out of court, to be met by the counsel, and *penuria*, or poverty and other forms of resourcelessness, which demand that we

provide. The discussion which follows is practical, and brings out in bold relief the resourcefulness, versatility, keen insight and intensely human interests which characterized the genius of Dr. Southard. The language is simple, and, in spite of the case history method which has been adopted, there is not a dull chapter in the book. Appendixes have been added which provide a model for careful social work; also a rather complete bibliography. The book can be recommended to physicians who are interested in the treatment of "the man" as well as the disease, and to the nonmedical reader who is interested in any phase of social welfare.

DU GLAUCOMA ET DE L'HYPOTONIE. Leur Traitement Chirurgical. Par le professeur Félix Lagrange, Associé National de L'Académie de Médecine. Paper. Price, 28 francs. Pp. 432, with 110 illustrations. Paris: Octave Doin, 1922.

This aims to cover the entire subject of glaucoma, but a goodly portion of the book is devoted to considerations affecting the author's procedure of sclerectomy. This consists of the removal by scissors, or punch forceps, of a strip of sclera along the upper edge of the anterior flap of the wound one makes in the corneal section for cataract extraction. The author has modified the section by turning the knife sharply backward at the upper part of the anterior chamber to go posterior to the innermost, anterior angle of the sclera before coming on out through the limbus. The ciliary muscle is thus cut away from its attachment to the scleral spur, and this structure in turn excised, along with layers external to it, by the sclerectomy. The new path of the aqueous is then out over the ciliary muscle into the suprachoroidal space as well as through the fistulous tract leading into the conjunctival bleb, whence absorption takes place through the adjoining conjunctival vessels. A table of 104 cases, from one to nine years after operation, is given along with convincing data to show that eighty-nine were successful. In the fifteen unsuccessful cases, lack of success was due in eight cases to cataract formation (though four patients were later given good vision by extraction), twice to optic atrophy, and in the remaining five to retinal hemorrhage, anterior chamber hemorrhage, rapid decrease of vision, acute glaucoma and too small a sclerectomy. Contrasted with Elliot's corneoscleral trephining, Lagrange asserts that there is no danger of injuring the ciliary body, less danger of closure of the fistulous opening by proliferation of corneal tissue (for only sclera is excised), and that late infection does not occur. He advises iridectomy for acute glaucoma, sclerectomy with peripheral iridectomy in chronic glaucoma with constant high tension, and simple sclerectomy for the intermittent low tension of simple glaucoma. Rather too much of the reader's time is taken up with the author's claim of priority in the introduction of a fistulization operation for glaucoma. The facts seem to be that Lagrange described his sclerectomy for glaucoma in 1905, and that Elliot did his first trephine operation in 1909. If these are the facts, Lagrange is entitled to more credit than he complains he has received in many English and American publications. The treatise is interesting, too, outside of the operative features. The author defines glaucoma as "a dystrophy of the eye characterized anatomically by vascular and nervous degenerations and clinically by a hypertension following hypersecretion, and is the result of the union of hypersecretion and hypo-excretion," and insists that the glaucomatous eye is "a sick eye in a sick body." Secondary glaucoma he classifies as a false glaucoma. In the development of glaucoma, he considers that there is a neuropathy, producing a hypersecretion, as first postulated by Donders, leading to increased tension, when, as shown by Knies, the anterior chamber angle becomes blocked. He believes that vascular changes in the nerve account for cases of progressive atrophy of the optic nerve and blindness after normal tension has been restored, and describes sections to prove his view. He thus joins the growing list of authorities who support Schnabel's theory of a cavernous atrophy independent of the tension. He holds that the "great trio" in glaucoma are Donders, Knies and Schnabel. In the diagnosis of glaucoma he emphasizes the importance of Bjerrum's paracentral scotoma and the diminution of the light sense. When scotoma



approaches the fixation point he advises operation. Iridectomy sometimes hastens final blindness, for some unknown reason, but sclerectomy does not. Not the least interesting part of the book is that devoted to hypotony. A tension of less than 16 the author considers pathologic and says that it is of great frequency in high myopia, even when uncomplicated by detachment of the retina. He has devised a procedure which he terms calmatage to increase tension by a slow partial blockage of the angle of the anterior chamber. The conjunctiva above or below the cornea is resected in a large flap, hinged at the corneal margin, and multiple ignipuncture is carried out part way through the outer sclera layers. In animals this sets up a low grade fibrous proliferation in the sclera both in the outer looser layers and in the deeper layers, bringing about a more compact state of the structures through which run the vessels draining the aqueous out of Schlemm's canal. The procedure is carried out in two sittings and is followed by a course of subconjunctival injection of salt or mercury intended to intensify the reaction. Tension increases up to ten days and then relapses to the first reading; but after six months a final higher tension is established and maintained well above the former pathologically low state. Detailed records of thirty such cases are given. They include three of high myopia and twenty-two cases of myopia complicated by detachment of the retina, and five other cases of detachment with low tension. All were improved with an average rise from 10 to 22, according to the Schiötz tonometer. All considered, the book is well worth reading.

**INFANTILE CIRRHOSIS OF LIVER.** By Santosh Kumar Mukherji, M.B., M.R.A.S., Lecturer, National Medical College of India and King's Hospital. With a Foreword by Major General B. H. Deare, C.I.E., M.R.C.P., D.P.H., Surgeon General of Bengal. Cloth. Price, rupees 2-8-0. Pp. 95. Calcutta: Indian Medical Record Book Dept., 1922.

This interesting little book takes up a subject that is almost entirely unknown to American readers. The type of cirrhosis described is apparently peculiar to the southern part of India. Its importance there is revealed by statistics showing that the number of deaths in Calcutta since 1908 has varied between 727 and 561 a year, almost all of these occurring in children under 5 years of age. The book is based on a study of forty-eight cases and five necropsies. The author regards the condition as an intercellular cirrhosis of the liver. He thinks that the condition is due to dietetic errors occurring in children either totally or partially artificially fed. The symptoms are well presented, as is the subject of differential diagnosis. With the usual means of treatment, the patients nearly all die; but at least a fair percentage can be saved if a rational diet is given, hygienic conditions are improved and cholagogues are used. On the whole, the book should prove interesting to one who wishes first-hand knowledge of a disease about which we know little or nothing.

**AN OUTLINE OF THE MEDICAL SERVICE OF THE THEATRE OF OPERATIONS.** By M. A. W. Shockley. Cloth. Price, \$2.50. Pp. 230. Philadelphia: P. Blakiston's Son & Co., 1922.

This book presents the gist of the lectures given at the United States Army general service schools during the 1919, 1920 and 1921 sessions. It is a textbook for line and medical officers who have shown the ability to organize and administer military organizations. The author therefore assumes that his reader has had considerable experience, and has omitted many purely medical details that would have made the book more interesting. There are formulas for estimating the number of battle casualties, the time that will be required to evacuate the wounded, and the amount of transportation and the number of hospital beds that will be needed. There are tables of reference of noted battles in various wars to show the percentage of wounds in different anatomic regions in offensive and defensive fighting. The duties of different medical offices in the theater of combat are tabulated, and seem hard and fast; but in actual campaign there is unlimited opportunity to do much more. There are specimens of the types of orders affecting the medical department, and the usual sketches showing the disposition of medical units in battle. The latter are separate sheets that fit into a pocket for notes in the binding of the book. The medical

service tactical and administrative doctrine contained has been coordinated with combatant doctrine by actual test, and conforms to the doctrine of the Surgeon General's Office. Only 6 per cent. of the total number of medical officers in the World War were regular officers. This book shows why they were detailed mostly to administrative positions.

**LEOPOLD AUENBRUGGER'S INVENTUM NOVUM.** Faksimile nach der ersten Ausgabe. Begleitet von der Französischen Uebersetzung Corvisart's, der Englischen von Forbes, der Deutschen von Ungar. Herausgegeben und mit einer biographischen Skizze versehen von r. Max Neuburger, O. ö. Professor an der Universität Wien. Boards. Price, \$5. Three illustrations. Vienna: Josef Safár, 1922.

This book opens with a steel engraving of Auenbrugger, who was born in 1722. Following is a facsimile reproduction of the original Latin text of 1761. Next is a steel engraving of Corvisart and a facsimile reproduction of the 1808 translation into French which he made of Auenbrugger's work. The third part is a reproduction of the translation made by John Forbes into English and published in London in 1824. The fourth section is a translation into German made by S. Ungar and published in Vienna in 1843. The book is completed with a portrait of Auenbrugger and a historical sketch in German by Max Neuburger.

It is hardly necessary to remind medical readers of the importance of Auenbrugger's discovery of the art of percussion in the diagnosis of disease. In his preface occurs the famous line which should be the guide of every medical writer:

In making public my discoveries respecting this matter, I have been actuated neither by an itch for writing, nor a fondness for speculation, but by the desire of submitting to my brethren the fruits of seven years' observation and reflexion.

and further:

In drawing up my little work I have omitted many things that were doubtful, and not sufficiently digested; to the due perfection of which it will be my endeavour henceforth to apply myself. To conclude, I have not been ambitious of ornament in my mode or style of writing, being contented if I shall be understood.

Dr. Neuburger suggests that perhaps Auenbrugger's work was based on the fact that while young he had observed the tapping on casks to determine the amount of fluid in them, since the boy was the son of an innkeeper. It is well known, too, that some of the ancients had spoken of percussion for ascites and for determining the presence of fracture. Auenbrugger, however, was the first to percuss the thorax systematically for the determination of various normal and pathologic signs, and to outline a system for routine percussion in physical diagnosis. He was a man of clear brain and calm passions. Today the whole medical world accepts without question his right to a position as one of the great founders of the art of scientific diagnosis.

**DISEASES OF INFANCY AND CHILDHOOD, THEIR DIETETIC, HYGIENIC AND MEDICAL TREATMENT.** A Text-Book Designed for Practitioners and Students in Medicine. In two volumes. By Louis Fischer, M.D., Attending Physician to the Willard Parker and Riverside Hospitals of New York. Volume I: Infant Feeding and Organic Diseases. Ninth edition. Cloth. Price, \$12 per set of two volumes. Philadelphia: F. A. Davis Company, 1922.

The new edition contains a revision of a great deal of material contained in previous volumes, which enhances its value. The book is to be recommended as a practical work. Part 6 has an excellent chapter on anaphylaxis and allergy; also a chapter on bacterial vaccines, which is open to criticism because of the optimism expressed by the author, which is, however, based largely on his individual experience.

**CONSEJOS PRACTICOS DE HIGIENE INFANTIL.** Por el Dr. José J. Callejas. Paper. Pp. 223, with illustrations. Comayagüela, Honduras: Imprenta "El Sol," 1922.

Surprised at the large number of children dying in Central America, the author decided to look into the causes and point out the possible remedy. This he has striven to do in the present book, one of practical advice on child hygiene. Without aiming at originality or beauty of style, he has accomplished a useful piece of work in a publication intended especially for Central American mothers, and reviewing all the factors that affect child welfare from conception to the period of youth.



## Miscellany

### A CROWDED PROFESSION

The gloomy vaticinations of those who see an unpleasant overcrowding of the profession in two, or at most, three, years' time seem to have attracted the attention of the public in an unusual degree. Many newspapers have reproduced the statistical tables and calculations from the professional journals which go to prove there will be very soon one registered practitioner to every thousand of the general population if, indeed, we have not reached that point already. It is unfortunate that the decrease in the number of new students did not commence in time to affect the number of those who are already getting qualified and registered, as it may take the best part of a generation to reduce the numbers of the surplus by the usual eliminative processes, and, in the meanwhile, there is likely to be an exceedingly hard time for those faced with the problem of making a livelihood under the keenest competition. It is probable, too, that some of the licensing corporations may share eventually in the leanness of the times, for, amid a glut of candidates, public bodies are certain to restrict their favors to those who hold the qualifications which carry the greatest appeal to the lay comprehension.

The situation can but have a very adverse influence on the prospects of medical women; there are far too many of them at present, and since no friendly warnings availed to check the recent inexplicable crowding of the sex into the profession, they are likely to suffer far more than the medical man in the struggle for existence. For a section of the public, and especially some corporations, still decline obstinately to accept the existence of the medical woman as anything but an impertinence, and it is probable that when in competition with the male overplus she may be ousted even from her recently conquered school clinic and welfare domain.—*Observer* (London), January 21.

### A GOVERNOR'S OPINION OF THE AMERICAN MEDICAL LIBERTY LEAGUE

The *Denver Medical Bulletin* reprints from the *Denver Post* an open reply by Governor Sweet of Colorado to an invitation from the American Medical Liberty League to attend its meeting. The governor is quoted as saying: "I thank you very much for your invitation, and I wish to say that so far as you state the principles of the league in your letter, and from reading the press, I do not find myself in agreement with them. I agree that personal liberty is a thing to be cherished, but personal liberty cannot be relied on to permit any practice detrimental to the health and well-being of society. I do not believe that 'individual liberty' can be urged as a reason why you should be allowed to do as you please with respect to health matters, regardless of the law and the rights of the community. In my opinion, the rights of society are just as sacred as those of the individual.

"If I am called on to pass judgment on any legislation which may be passed by the legislature now in session, I will be moved in my consideration of this legislation far more by the facts than I will be by any specious arguments affecting the principles of liberty."

### CHEMICAL CHANGES IN BLOOD IN PNEUMONIA

In a series of fifty cases of pneumonia of various types, at about the time of the crisis the nonprotein nitrogen was found by John A. Killian definitely increased from 34 to 156 mg. per hundred cubic centimeters (*Proc. New York Path. Soc.* 22:72 [Jan.-May] 1922). Following the increase in the non-protein nitrogen the uric acid concentration of the blood rose from 3.8 to 11 mg., and subsequently there was a rise in the urea nitrogen to 20 mg. or more. When the urea nitrogen had reached this level a definite accumulation of creatinin was noted. In a few instances the creatinin exceeded 5 mg. per

hundred cubic centimeters, and death in these cases could undoubtedly be attributed to the severe impairment of renal function. The order of retention in the blood of the nitrogenous waste products was analogous to that observed in nephritis of the interstitial type, first, the uric acid, secondly, the urea, and finally, the creatinin. A significant decrease in the blood chlorids from 0.288 to 0.425 per cent. was found in the majority of the patients before the crisis. It was not possible to establish any definite relation between the decrease in the blood chlorids and any of the clinical manifestations of the disease. At the time of the crisis, the chlorids quickly rose to a level exceeding 0.50 per cent., and gradually dropped back to within normal limits. In a few cases subnormal blood chlorids were found with a retention of the nitrogenous waste products. Pneumonia was found to produce a slight decrease in the carbon dioxid combining power, from 45 to 50 volumes per cent.

## Medicolegal

### Liability of Roentgenologists and Surgeons—Cross-Examination of Experts

(*Stemons v. Turner* (Pa.), 117 Atl. R. 922)

The Supreme Court of Pennsylvania, in reversing a judgment obtained by the plaintiff for roentgen-ray burns, says that there was nothing in his statement which averred that the machine used was in any way different from those ordinarily in use, or that the defendant, through lack of training or otherwise, was incompetent to handle it. The issue was therefore narrowed to the single question whether the defendant negligently or ignorantly used the roentgen ray on the occasion when he subjected the plaintiff to it, measuring the skill required of him in its use as a duty to do so with the skill reasonably required in the proper use of such practice and treatment. This is substantially the rule laid down by the Pennsylvania cases, which hold that a physician or surgeon is only required to exercise such reasonable skill and diligence as is ordinarily exercised in his profession, and it is also the general rule.

The trial judge in his charge to the jury applied the rule of *res ipsa loquitur* (the matter speaks for itself) to the case, and permitted the injury to the plaintiff and nothing else to speak the negligence; a rule which this court has said does not apply between physician and patient. The appellate courts in the several jurisdictions throughout the country where the question has arisen are not in accord as to whether the *res ipsa loquitur* doctrine should be applied to roentgen-ray burning cases, the weightier reasoning being that it should not. The note to *Runyan v. Goodrum* (147 Ark. 481, 228 S. W. 397), 13 A. L. R. 1403, covers all the decided cases, points out the conflict of authority among them on the *res ipsa loquitur* doctrine and deduces the generally recognized conclusion that a person undertaking to use roentgen rays is held only to the same measure of responsibility as in administering other forms of medical treatment. This is the rule which wisdom dictates.

The trial judge also unduly stressed the fact that the roentgen ray is a dangerous instrumentality. So is a surgeon's knife. If human ills are to be cured, such instrumentalities must be used. To put on the medical profession, which must use them, such a burden as financial responsibility for damages, if injury or death results, without proof of specific negligence, would drive from the profession many of the very men who should remain in it, because they would be unwilling to assume the financial risks.

On cross-examination of an expert witness who has expressed an opinion in answer to a hypothetical question full latitude should be allowed to ascertain just what the factors were which the witness took into account in arriving at his conclusion, and what, if any, he disregarded; otherwise, the integrity and value of his opinion cannot be investigated. Under such circumstances, a broad range of inquiry is permitted, and the expert witness may be asked as to the basis of his opinion, including statements on which he has



relied, in order to show the reasonableness or unreasonableness of the opinion expressed, and to test its value. His attention may be called to any fact, omitted from the hypothetical question asked on direct examination, or the facts stated in the hypothetical question which are deemed unimportant may be sifted out. The data on which the expert rests his specific opinion (as distinguished from the facts which make him skilful to form one at all) may be fully inquired into on cross-examination. Without them, the value of the opinion cannot be estimated.

### Two Questions for Jury in Action on Account

(*Geiger v. Gillespie (Ala.)*, 93 So. R. 412)

The Supreme Court of Alabama says in this case, which was transferred to it from the court of appeals, that the plaintiff, a physician, sued the defendant to recover for professional services rendered to the latter's daughter. One of the counts of the complaint was on an open account, another on an account stated, and the remaining count for professional services rendered by the plaintiff for the defendant, at the instance and request of the defendant. The cause was tried on these counts and the plea of general issue, together with a plea of the Alabama statute of limitation of three years. The result was a judgment for the plaintiff, which is here affirmed. The only question argued on this appeal related to the insistence that an affirmative charge was due the defendant on the whole case, on the theory that more than three years had expired from the time the services were rendered, and that there had been no agreement on the part of the defendant to pay the plaintiff. But there was evidence for the plaintiff which tended to show that the account sued on was rendered by him to the defendant, and that the latter retained this account without objection of any character—the services having been rendered in January, 1916, and the statement having been rendered the defendant in May, 1918. The evidence was in conflict, however, as to any objection on the part of the defendant, and the issue of fact thus presented was properly left for the determination of the jury. It therefore appeared that the affirmative charge was not due the defendant as for an account stated. Moreover, one of the counts of the complaint rested for recovery on a special contract between the parties as to the services rendered, which was supported by the testimony of another physician, who was a witness for the plaintiff. The issues presented by this count were also properly submitted to the jury. This court finds no reversible error.

### No Award When Employer Authorizes Services

(*Integrity Mutual Casualty Co. et al. v. State Industrial Commission et al. (Okla.)*, 209 Pac. R. 653)

The Supreme Court of Oklahoma, in reversing an award of \$600 made by the state industrial commission to a physician who had attended an injured employee of a company, and made after awards had been made to the employee which included \$850 for medical services, says that the employee's injuries were such that it was necessary to operate on the brain to restore him to consciousness. The attending physician did not feel capable of performing the operation, and suggested to the president and general manager of the company that a specialist from Chicago be employed to perform the operation. The president agreed to this, and a specialist was employed. The insurance carrier under the workmen's compensation act, on being informed of the employment of the surgeon, objected to it, and stated that it would not pay for his services, whereupon the attending physician replied that he would pay for them himself. The insurance carrier tendered the services of another surgeon, which were refused. The award made of \$600 was to reimburse the attending physician for money paid by him to the specialist from Chicago.

Under the provisions of the workmen's compensation act of Oklahoma, if the employer furnishes medical services, he becomes liable to the physician on contract. If he neglects or refuses to furnish these services after being requested to do so, the injured employee may secure services at the expense of the employer, and the employer becomes liable

therefor under the act, and the fees and charges for these services are subject to regulation by the commission. But it is only the provisions of the law that the commission has jurisdiction to enforce. It is without power to enforce a contract between the employer and the physician employed by him.

Had the employer in this case refused or neglected to furnish medical services after being requested to do so by the injured employee, or under the circumstances surrounding this case by some one for him, then the employee, or some one for him, might have procured services, and the expenses thereof should have been included in the award to the employee, if approved by the commission, and the claim of the physician therefor would have become a lien on the compensation awarded, and should be paid therefrom in the manner fixed by the commission. But the record disclosed that the employer did not neglect or refuse to furnish medical services, but to the contrary did everything possible to furnish the best surgical skill obtainable, and requested the attending physician to procure the services of a specialist to perform the needed operation. Obviously, this created a contractual relation between the physician and the employer, and if the employer refused to pay for the services furnished, the physician had his remedy by appropriate action in the proper court.

Wherefore the supreme court concludes that the industrial commission was without jurisdiction to make the order or award complained of, and the same is reversed and the cause remanded with directions to dismiss the claim.

### Power Inherent in Cities to Erect City Hospitals

(*Cumnock v. City of Little Rock et al. (Ark.)*, 243 S. W. R. 57)

The Supreme Court of Arkansas, in affirming a decree that sustained a demurrer to a complaint that asked that the defendants be enjoined from proceeding with the erection of a city hospital, holds that the city had the power to erect a city hospital, under the general welfare clause of the statute of that state which provides that municipal corporations shall have the power to make and publish such ordinances, not inconsistent with the laws of the state, as to them shall seem necessary in order to provide for the safety, preserve the health, and improve the comfort and convenience of such corporations and their inhabitants. The court says that it is also of the opinion that the power to erect a city hospital is a necessary incident of municipal life. In a growing city, a city hospital may be necessary for the preservation of the public health and the care of sick paupers. This court can see no difference in principle between the right of a city to erect and maintain a hospital and to erect and use city halls, jails and the like. Most cities of any considerable magnitude have city hospitals which are subject to the regulation of their own local authorities. It is true there is express statutory authority to erect them in many of the states, but this court is also of the opinion that such authority is essential to carry out the object and purposes of organizing municipal corporations. A municipality is a governmental agency, and in cities the erection of hospitals to preserve the public health and to care for indigent people within its borders is highly essential, and may be absolutely necessary.

## Society Proceedings

### COMING MEETINGS

- Alabama, Medical Association of the State of, Mobile, April 17-20. Dr. H. G. Perry, State Board of Health, Montgomery, Secretary.
- American Association of Anatomists, Chicago, March 28-30. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.
- American Association of Pathologists and Bacteriologists, Boston, March 29-30. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.
- Louisiana State Medical Society, New Orleans, April 10-12. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.
- North Carolina, Medical Society of the State of, Asheville, April 17-19. Dr. L. B. McBrayer, Sanatorium, Secretary.
- South Carolina Medical Association, Charleston, April 17-19. Dr. Edgar A. Hines, Seneca, Secretary.
- Tennessee State Medical Association, Nashville, April 10-12. Dr. Larkin Smith, 154 Eighth Avenue, N., Nashville.



## Current Medical Literature

## AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

## American Journal of Hygiene, Baltimore

January, 1923, 3, No. 1

- Control of Hookworm Disease. XII. Studies on Occurrence, Distribution and Morphology of *Necator Suillus*, Including Descriptions of Other Species of *Necator*. J. E. Ackert and F. K. Payne, Baltimore.—p. 1.
- \*Control of Hookworm Disease. XIII. Conditions Under Which Hookworm Eggs and Larvae Develop. J. E. Ackert, Baltimore.—p. 26.
- \*Treatment of Hookworm Disease with Carbon Tetrachlorid. W. G. Smillie and S. B. Pessoa, Sao Paulo, Brazil.—p. 35.
- Control of Hookworm Disease. XIV. Field Experiments on Vertical Migration of Hookworm Larvae. F. K. Payne, Baltimore.—p. 46.
- Control of Hookworm Disease. XV. Effective Method of Counting Hookworm Eggs in Feces. N. R. Stoll, Baltimore.—p. 59.
- \*Age at Death of Parents of Tuberculous and Cancerous Persons. R. Pearl, Baltimore.—p. 71.

**Control of Hookworm Disease.**—The results obtained from covering soil pollution with clay loam indicate that the custom of covering human waste with 2 inches or less of clay loam is unsuccessful as a control measure against hookworm disease. The results of tests made by Ackert in which hookworm eggs in soil pollution were buried under 4 inches and under 5½ inches of clay loam showed that the eggs produced infective larvae, that the larvae migrated to the upper part of the culture, and that the eggs remained viable for fifty-eight days. The custom of covering soil pollution containing hookworm eggs with a thin layer of wood or charcoal ashes is ineffective as a control measure, as large numbers of infective larvae developed in stools wholly surrounded by the ashes. Moreover, the larvae lived deep in the cultures for over three weeks.

**Treatment of Hookworm Disease with Carbon Tetrachlorid.**—Carbon tetrachlorid, administered in 3 c.c. doses to adults, was found by Smillie and Pessoa to be an extremely efficient drug in the removal of hookworms (*Necator americanus*). A single treatment will remove more than 95 per cent. of all hookworms harbored. Larger doses than 3 c.c. are unnecessary and may be dangerous. Carbon tetrachlorid has a toxic action on the host, similar to that of chloroform. The first stages are dizziness, slight nausea, headache, and somnolence. These are usually transient. A later and more serious manifestation is fatty degeneration of the liver, which first manifests itself two or three days after treatment. This condition rarely occurs and is seldom fatal. There is a wide variation in individual reaction to carbon tetrachlorid. Large doses, from 10 to 20 c.c., have been given to adults without producing apparent ill effects. Alcoholics are especially susceptible to the toxic action of the drug; so small a dose as 1.5 c.c. has produced severe toxic symptoms in an acute alcoholic.

**Age at Death of Parents of Tuberculosis and Cancer Patients.**—A study made by Pearl of the question of the ages at death of the parents of the tuberculous and the cancerous, on the basis of critically collected new material, shows that, for completed lives (parents dead), the mean age at death of the parents of a group of tuberculous persons is significantly, but not greatly (from 2 to 4 years), lower than the mean age at death of the parents of a group of nontuberculous persons having the same age distribution as the tuberculous group. The same thing is true of the fathers of a group of cancerous persons. The experience for mothers of the cancerous is too meager to give definite results. In so far as duration of life may be taken statistically as an indicator of soundness of biologic constitution, it follows that in some degree, though not considerably, both the tuberculous and the cancerous are of weaker stock constitutionally than those not having these diseases. Incidentally, the results of this investigation, as they are interpreted by Pearl, furnish new evidence, of a different sort than any heretofore offered, on the question of the inheritance or duration of life.

## Archives of Neurology and Psychiatry, Chicago

January, 1923, 9, No. 1

- \*Physiologic Effects and Clinical Results of Section of Anterolateral Columns of Spinal Cord (Chordotomy). C. H. Frazier and W. G. Spiller, Philadelphia.—p. 1.
- \*Pathology in Case of Epidemic Encephalitis Complicated by Psychosis. G. B. Hassin, Chicago, and D. B. Rotman, Dunning, Ill.—p. 22.
- \*Neurosyphilis Among Chinese: Findings in Sixty-Five Cases. W. G. Lennox, Peking, China.—p. 26.
- \*Study of Four Cases of Glossopharyngeal Neuralgia. J. B. Doyle, Rochester, Minn.—p. 34.
- Lesions in Brain of Patient with Postencephalitic Paralysis Agitans. J. C. McKinley, Minneapolis.—p. 47.
- \*Pathologic Findings in Heart Muscle in Progressive Muscular Dystrophy. J. H. Globus, New York.—p. 59.
- \*Sex Development and Behavior in Male Patients with Dementia Praecox. C. E. Gibbs, Ward's Island, N. Y.—p. 73.
- \*Spirochete Stain in Multiple Sclerosis. G. S. Stevenson, Ward's Island, N. Y.—p. 88.

**Results of Chordotomy.**—Frazier and Spiller report eight cases in which chordotomy has been performed. In one case the operation was performed three separate times on the same side of the cord. The operation abolished the pain for which it was performed in six, and gave decided relief from pain in the remaining two cases. Four were cases of malignant tumor. The authors are convinced that this operation, when successfully performed, destroys pain, heat and cold sensations in the lower limbs and lower part of the trunk when performed at the proper level, although the impairment of these sensations is less intense over the abdomen in some cases, probably because some fibers have not decussated at the level of the incision. In some cases they have observed that certain fibers innervating the lower limbs for pain and temperature sensations escape in the division of the anterolateral columns. The bladder and rectum almost invariably escape damage in this operation. One might possibly expect sympathetic fibers for the bladder and rectum to be in the anterolateral columns and to be impaired by this operation, but it has seemed to the authors that when such disturbance occurs from a spinal cord lesion, the crossed pyramidal tracts are damaged. They are inclined to believe that, in the male, impairment of sexual power possibly may result in the manner suggested. In one case in which unilateral chordotomy was performed sexual power was lost. The marked impairment of pain and temperature sensations after chordotomy at the fifth thoracic segment usually is pronounced to about 2 inches (5.08 cm.) above a line passing through the umbilicus, and gradually shades off above this region. While pressure sensation is preserved, it is without any association with pain sensation.

**Pathology of Epidemic Encephalitis Complicated by Psychosis.**—In the case described by Hassin and Rotman there was a combination of diffuse inflammatory and degenerative phenomena, especially in the basal ganglions and midbrain. The infiltrations were not so pronounced as in acute cases of epidemic encephalitis; and the proliferative changes were not so marked as in so-called productive encephalitis (caused, for instance, by lead or arsenic). Resembling in the combination of inflammatory and degenerative changes the findings in general paralysis of the insane, this case differs from the latter in the comparatively mild involvement of the cortex. The inflammatory changes in the basal ganglions and midbrain could, perhaps, explain the nervous manifestations (ocular paralysis, parkinsonian mask), while the diffuse degenerative phenomena in the cortex were most likely responsible for the patient's mental condition. It is obvious that degenerative lesions are a serious complication of epidemic encephalitis, much more serious than the inflammatory changes. The latter may subside or disappear entirely, leaving no permanent disability, in contrast to a degenerative process, which however mild, may produce more or less troublesome complications of which the most dangerous are mental disturbances.

**Neurosyphilis in Chinese.**—Sixty-five cases of neurosyphilis are reported by Lennox in which spinal fluid examination confirmed the clinical diagnosis of syphilis. Testimony of individual observers and reports of general hospitals agree that in China syphilis is relatively more common and neurosyphilis relatively less common than in America. One explanation for this apparent racial discrimination, Lennox



says, is the probability that many cases of neurosyphilis among the Chinese have been overlooked. In a teaching hospital in Peking, search for these cases revealed a proportion comparable with that found in teaching hospitals in America. An unusual proportion of the Chinese patients have cord lesions of vascular origin.

**Glossopharyngeal Neuralgia Is a Clinical Entity.**—Doyle's observation of four cases leads him to conclude that glossopharyngeal neuralgia is a definite clinical entity, differing from trifacial neuralgia only in the area of distribution of pain. He is convinced that the different fibers of the sphenopalatine ganglion concerned with the innervation of the nasopharynx are not derived from the trigeminal nerve.

**Changes in Heart Muscle in Progressive Muscular Dystrophy.**—The heart in Globus' case was somewhat smaller than normal, the left ventricle was well contracted and empty, the right ventricle was dilated and filled with blood. The subepicardial fat was somewhat increased, and some fatty streakings were found under the endocardium. The heart muscle was pale, yellowish red, flabby and friable. On section, the wall of the left ventricle showed many translucent patches, irregularly distributed. These patches bore no relation in the coronary or smaller vessels. The coronary vessels showed no pathologic change. Preparations from the wall of the left ventricle showed many connective tissue scars, varying in size. They had not involved the perimysium externum, but were apparently produced mainly by proliferation of connective tissue in the perimysium internum, leading to the isolation of individual muscle fibers and fragmentation of muscle fibers. In younger, advancing scars small round fixed connective "tissue cells" were seen in large numbers. Fat infiltration was found in the connective tissue scars and about the blood vessels, as it was in the skeletal muscles. As the degenerative process and the process of fibrosis were relatively mild in the heart, so the fat infiltration was rather meager. A larger amount of fat was under the epicardium, but this cannot be considered entirely pathologic. Another feature, not unlike the pathologic change in the skeletal muscles, was the accumulation of many small round cells in the connective tissue trabeculae, in the fibrous scars and, in a few instances, in the proximity of blood vessels. Changes in the muscle fibers themselves were also observed. They partook mainly of the character of edema and swelling of some fibers, atrophy of others, with hyalinization and fragmentation. Aschoff bodies were not found in the cardiac lesion described.

**Sex Studies in Male Dementia Praecox Patients.**—The findings obtained by Gibbs in a study of 325 male dementia praecox patients indicate a disturbance of sexual development and a failure of sexual maturity which is most marked in patients admitted to the hospital during the years of puberty and adolescence. Patients admitted at an early age give the impression of unevenness of sexual growth, the development of the secondary sexual characters lagging behind that of the testes. These patients seem to lack the finishing touches of complete physical maturity. Only 20.5 per cent. of the patients had reached an adult level of sex behavior and maintained it for even a short time, either married or single.

**Spirochete Stain in Multiple Sclerosis.**—In the study of thirty-seven sections from four cases of multiple sclerosis stained by Jahnel's new method, no spirochetes were found by Stevenson.

### Boston Medical and Surgical Journal

Jan. 25, 1923, 188, No. 4

\*Convalescence: II. Problem in Preventive Medicine and Public Health. J. Bryant, Boston.—p. 99.

\*Pellagra in Massachusetts. G. C. Shattuck, Boston.—p. 110.

**Management of Convalescence: A Public Health Problem.**—Bryant emphasizes the wisdom and necessity for better private and community care of the convalescent patient; for today, as in the past, the convalescent patient suffers from clinical neglect. This clinical neglect is, at least in some degree, due to failure on the part of the medical profession to take into consideration a time factor fundamental in all medicine. There can be no doubt that the medical profession is under suspicion of neglecting its duty and opportunity in

regard to convalescence. Convalescent care, when properly applied, hastens and completes recovery of the patient, frees acute hospital beds for their proper use, saves money to the community and saves the medical profession from the now too frequently justifiable reproach of clinical neglect of the convalescent patient. Convalescent care may be applied within a general hospital, through an outpatient department, in the home of the patient, and in an organized convalescent home. Maximum efficiency in such a home results only when medical therapy, occupational therapy, physiotherapy, and social service factors work harmoniously together under the directions of a physician skilled in convalescent methods; one who does not assume responsibility for patients acutely ill, and who must in all matters of medical policy be independent of those in control of the acute medical and surgical services of the general hospitals. Bryant predicts the development of a future state wide organization which will have as its objective, the efficient application of available modern methods to the problem of caring for convalescent patients. An organization such as that anticipated could to advantage operate through the medium of large country convalescent centers which, though based on the larger cities, would be available to patients from the smaller towns within a motor transport radius of 20 miles from each such convalescent center.

**Pellagra in Massachusetts.**—The number of cases (136) of pellagra found by Shattuck in state and hospital records shows that pellagra is by no means rare in Massachusetts. Pellagra has been reported from nearly all the counties of the state. That most of the pellagra in Massachusetts originates within the state is shown by the fact that the great majority of cases developed in residents of the state and in the native born. Pellagra has been most common where population is densest. The mill towns show no disproportionate number of cases. In Massachusetts, women have been affected in much larger proportions than have men. The occupations of both male and female pellagrins have been studied. Among females, housewives markedly predominated, and among males the largest group of cases developed among unskilled laborers. These are the predominant types of work of the two sexes. Persons engaged in a great variety of occupations have developed the disease, and the observations do not indicate an association of liability to pellagra with any special occupation. The skin lesions of pellagra in Massachusetts most often appear in July but, apparently, they may develop for the first time in any month of the year.

### Canadian Medical Association Journal, Montreal

January, 1923, 13, No. 1

Medical Education and the Ontario Medical Association. J. H. Mullin.—p. 2.

Treatment of Nephritis. E. H. Mason.—p. 6.

Tumors of Kidney. H. A. Bruce.—p. 13.

\*Tuberculosis of Intestine. Ulcerative Form, Phase of Pulmonary Tuberculosis. D. A. Stewart.—p. 20.

Cancer of Stomach. F. N. G. Starr.—p. 24.

Cranial and Intracranial Injuries. C. K. P. Henry.—p. 26.

Pneumonia. G. G. Melvin.—p. 30.

Hemolytic Streptococcal Infections in Children. I. H. Erb.—p. 32.

Baneful Cathartic After Abdominal Operations. C. A. Howard.—p. 36.

Analysis of Sixty Cases of Gastric Anacidity Associated Mainly with Chronic Diarrhea and Pernicious Anemia. C. Hunter.—p. 38.

Acrodynia (?); Report of Three Cases. A. F. McKenzic.—p. 43.

Echinococcus Cysts of Liver in Girl Ten Years Old. H. M. Young.—p. 48.

Nitrous Oxid. W. Bourne.—p. 50.

**Tuberculosis of Intestine; Ulcerative Form.**—Stewart believes that intestinal ulceration, tuberculous in origin, is found in a fairly wide percentage of cases of pulmonary tuberculosis. It is likely implanted early, perhaps earlier than the lung lesion. It is almost universally present in the late stages of pulmonary disease, and hastens, or perhaps causes, death. It is treatable and even curable in its early stages. Early diagnosis, especially of disease in the small intestine, is not yet satisfactory, but much can be done by careful study of symptoms and giving the opaque meal and an enema. Surgical treatment is suitable in some cases, but is of limited applicability. The most promising treatment at present would seem to be the use of the ultraviolet ray, given by the quartz lamp, using, perhaps, the röntgen ray as well.



## Florida Medical Association Journal, St. Augustine and Jacksonville

November, 1922, 9, No. 5

- Function of Tonsil and Plea for More Conservative Treatment of Chronic Tonsillitis. M. Price, Key West, Fla.—p. 81.  
Management of Children with Heart Disease. W. S. Coleman, Miami, Fla.—p. 83.  
Granuloma Inguinale. G. J. Oetgen, Jacksonville.—p. 84.  
Fractures. R. A. Ely, Tampa, Fla.—p. 89.  
Case of Unusual Susceptibility to Diphtheria. P. Crumpler, Clinton, N. C.—p. 91.

## Journal of Biological Chemistry, Baltimore

January, 1923, 55, No. 1

- Lead Studies. II. Electrolytic Determination of Lead in Biologic Material. A. S. Minot, Boston.—p. 1.  
Hydrolysis of Yeast Nucleic Acid with Dilute Alkali at Room Temperature. (Conditions of Steudel and Peiser.) P. A. Levene, New York.—p. 9.  
Chemical Defense Mechanism of Fowl. J. H. Crowdle and C. P. Sherwin, New York.—p. 15.  
Study of Adequacy of Certain Synthetic Diets for Nutrition of Pigeons. K. Sugiura and S. R. Benedict, New York.—p. 33.  
Potassium in Animal Nutrition. I. Influence of Potassium on Urinary Sodium and Chlorin Excretion. H. G. Miller, Madison, Wis.—p. 45.  
Potassium in Animal Nutrition. II. Potassium in Its Relation to Growth of Young Rats. H. G. Miller, Madison, Wis.—p. 61.  
Occurrence of Copper and Zinc in Certain Marine Animals. H. W. Severy, Palo Alto, Calif.—p. 79.

## Journal of General Physiology, Baltimore

January, 1923, 5, No. 3

- Studies on Bioluminescence. XV. Electroreduction of Oxyluciferin. E. N. Harvey, Princeton, N. J.—p. 275.  
Growth and Respiration of Sulphur Oxidizing Bacteria. S. A. Waksman and R. L. Starkey, New Brunswick, N. J.—p. 285.  
Phagocytosis of Solid Particles. IV. Carbon and Quartz in Solutions of Varying Acidity. W. O. Fenn, Boston.—p. 311.  
Muscle Tension and Reflexes in Earthworm. A. R. Moore, New Brunswick, N. J.—p. 327.  
Study of Equilibrium Between So-Called "Antitrypsin" of the Blood and Trypsin. R. G. Hussey and J. H. Northrop, New York.—p. 335.  
\*Method for Quantitative Determination of Trypsin and Pepsin. J. H. Northrop and R. G. Hussey, New York.—p. 353.  
Influence of Salts When Injected into Animal Body. R. G. Hussey, New York.—p. 359.  
Conductivity as Measure of Vitality and Death. S. C. Brooks, Washington, D. C.—p. 365.  
Ionization of Protein Chlorids. D. I. Hitchcock, New York.—p. 383.  
Influence of Electrolytes on Cataphoretic Charge of Colloidal Particles and Stability of Their Suspensions. II. Experiments with Particles of Gelatin, Casein and Denatured Egg Albumin. J. Loeb, New York.—p. 395.

**Quantitative Determination of Trypsin and Pepsin.**—A quantitative method is described by Northrop and Hussey which permits a determination of the relative amount of trypsin or pepsin present in a gelatin-enzyme digestion mixture, provided the gelatin and trypsin solutions are purified. This method is dependent on the change in viscosity of such solutions. It is found that the time required to cause a given percentage change in the viscosity is nearly inversely proportional to the amount of enzyme present. It is pointed out that the particular value of the method lies in the fact that enzyme reactions which take place in the presence of "buffer" salts may be studied.

## Journal of Laboratory and Clinical Medicine, St. Louis

January, 1923, 8, No. 4

- \*Nontoxicity and Antipyretic Efficiency of Tolysin (Ethyl Ester of Paramethylphenylcinchoninic Acid). H. G. Barbour and E. Lozinsky, Montreal.—p. 217.  
\*Excretion of Sugar in Urine in Health and Disease. L. Kast, H. M. Croll and V. C. Myers, New York City.—p. 227.  
\*Etiology of Gallstones. S. F. Oliver, Cincinnati.—p. 242.  
\*Cresylecht Violet; A Rare Dye. B. G. R. Williams, Paris, Ill.—p. 250.  
Determination of Urea in Blood by Folin and Wu Method. A Modified Apparatus. G. G. Boggs and W. S. McElroy, Pittsburgh.—p. 254.  
Technical Principles in Radial Transmission Sphygmography. H. M. Korns and E. J. Warnick, Cleveland.—p. 256.  
\*Case of Chronic Hydrocyanic Acid Poisoning. J. Rosenbloom, Pittsburgh.—p. 258.  
Fatal Case of Lactic Acid Bacillus Meningitis with Necropsy Findings and Review of Bacillus Mucosus Infection. H. M. Ray, Pittsburgh.—p. 260.  
\*Relative Value of Some of Commonly Used Methods for Detection of Occult Blood in Stool. H. A. Reimann, Buffalo.—p. 265.  
\*Quantitative Estimation of Iodin in Urine. H. L. Marsh, Chicago.—p. 271.  
Simple Method for Calculating Basal Metabolic Rate. H. L. Haden, Kansas City, Kan.—p. 272.

Apparatus for Cleaning Blood Counting Pipets. R. L. Haden, Kansas City, Kan.—p. 276.

\*Formaldehyd Test in Syphilis. D. A. Hohnston, Cincinnati.—p. 277.  
Suggestion for Practical Spirometer Valve. G. A. Brough, Chicago.—p. 278.

Concerning Specificity of Cholesterinized Antigens in Serologic Diagnosis of Syphilis: Third Communication. R. A. Kilduffe, Pittsburgh.—p. 279.

**Nontoxicity of Tolysin.**—Barbour and Lozinsky found that the ethyl ester of paramethylphenylcinchoninic acid (tolysin), given by mouth, even up to doses of 50 gm. per kilogram, or 5 per cent. of the animal's own weight, produces no effect on the general condition of dogs. Tolysin seems to be the least toxic of all substances of demonstrated antirheumatic efficiency. Tolysin exhibits a peculiarity in pharmacologic behavior in that the maximum limit of absorption from the intestine coincides essentially with full therapeutic doses. As cumulation is evidently absent, indefinitely large amounts are nontoxic, at least for dogs.

**Excretion of Sugar in Urine.**—A comparative study of different methods for the determination of sugar in normal urine has been made by Kast, Croll and Myers. By the use of one of these methods, that of Benedict and Osterberg, it was shown that there is an increase in the amount of reducing sugar excreted hourly after meals. It was found that a diet rich in carbohydrates increases the amount of sugar excreted over that on a low carbohydrate diet. The daily excretion of reducing sugar in the urine was determined in twelve normal persons and 140 hospital patients. In none of the diseases studied, except diabetes mellitus, was there any marked variation from the normal sugar excretion on ordinary diets. Moreover, in diabetes, when by dietary regulation the patient is rendered "sugar-free," the daily amount of sugar excreted is virtually normal.

**Etiology of Gallstones.**—Oliver summarizes his paper as follows: It would seem that in cases of gallstones and obstructive jaundice, a disturbance in bile salt secretion and excretion occurs. This manifests itself by an increase in bile salts in the urine and blood and a decrease in the bile salt content of the bile. As a result of the deficiency in the bile salt content of the bile, cholesterin tends to settle out of solution. If the condition is not early remedied, gallstones form the end result of this physicochemical disturbance. Further, the increase in bile salts in the blood leads to toxic changes in other organs, notably the kidneys and heart, and also profound constitutional disturbances of a toxemic nature. In all cases of cholemia, hepatic insufficiency is present.

**Cresylecht Violet.**—In Williams' hands this stain proved of promise in two kinds of pathologic work: (1) in the so-called biopsy, where unfixed tissues are stained for purpose of rapid diagnosis; (2) in diagnostic tissue work or fairly rapid work with frozen liquor formaldehydi fixed tissues where a metachromatic stain saves time and where many sections can be handled quickly, often avoiding double staining, mounting, etc., or in case special double staining is wished in any particular section it may be destained rapidly in alcohol and stained as wished for a mount. By this method a dozen sections can be studied in the same time that the more elaborate methods will give one or two. Moreover such a method is of particular value when the diagnosis is fairly easy, when the interested parties are impatient for a diagnosis and when section should be examined from a number of portions of the neoplasm.

**Symptoms of Chronic Hydrocyanic Acid Poisoning.**—Loss of energy, vomiting every meal shortly after its ingestion, and secondary anemia, Rosenbloom says, are the earliest symptoms of chronic cyanid poisoning.

**Detection of Occult Blood in Stool.**—The most reliable and convenient test for occult blood in the stool, in Reimann's opinion, is the Gregerson benzidin technic. The use of the guaiac test in conjunction with it is recommended in order to gain some idea of the quantity of blood, if the amount present be between 1 and 5 c.c. The spectroscope is not recommended for the detection of traces of blood.

**Estimation of Iodin in Urine.**—The method described by Marsh consists of: first, the determination of the total halogens in the residue from a fused sample of urine by the Volhard-Arnold volumetric method; second, the determina-



tion of the chlorids (Volhard-Arnold) in another fused sample from which the iodine has been removed by the classical method of Gooch. The difference between the total halogens and the chlorids represents the iodine present in the sample of urine.

**Formaldehyd Test in Syphilis.**—This test was used by Johnston in 100 cases of insanity. In 27 per cent. the Wassermann reaction was plus; in 23 per cent. the formaldehyd test was plus; in 12 per cent. the two tests corresponded; in 11 per cent. the formaldehyd test was plus with negative Wassermann reactions; in 15 per cent. the Wassermann test was positive with a negative formaldehyd test.

### Minnesota Medicine, St. Paul

January, 1923, 6, No. 1

- Diagnosis of Gastric and Duodenal Ulcer Without Aid of Laboratory and Roentgen Ray. O. J. Hagen, Moorhead.—p. 1.  
Treatment of Duodenal Ulcer. H. S. Willson, Minneapolis.—p. 6.  
\*Use of Radium in Treatment of Benign Hypertrophy of Prostate. W. A. Dennis, St. Paul.—p. 9.  
\*Diseases Which May Be Associated with Pernicious Anemia. H. Z. Giffin and John P. Bowler, Rochester, Minn.—p. 13.  
\*Visual Albuminuria Guide. H. W. Cook, Minneapolis.—p. 16.  
Injuries to Lower Birth Canal. J. R. Manley, Duluth.—p. 18.  
Malingering with Vengeance. W. W. Lewis, St. Paul.—p. 22.  
\*II. Preoperative Preparation of Patients with Obstructive Jaundice. End Results in Thirty-Four Cases. W. Walters, Rochester, Minn.—p. 25.  
Choosing Anesthesia for General Surgery. J. M. Hayes, Minneapolis.—p. 28.  
Diverticulitis of Colon. J. T. Rogers, St. Paul.—p. 35.

**Radium in Hypertrophy of Prostate.**—Dennis reports six cases of benign hypertrophy of the prostate in which the use of radium according to Barringer's method yielded very satisfactory results. The case reports show that at least 300 or 400 milligram hours may be given a single lobe at one sitting. The six patients had a total of eleven treatments. The placing of the needles has been practically painless and there has been almost no discomfort afterward, except in three instances. In one case the presence of a needle in the prostatic urethra was responsible, and in two cases a chill with high fever followed in about five hours, but had disappeared entirely in one case the next morning, and in the other case after a few days. Dennis believes that his data offer a reasonable hope that benign prostatic hypertrophy may yet be relieved of much of its gravity, and that the perfection of the radium treatment, possibly followed in large middle lobe cases by Young's simple punch operation, may eventually rob this condition of most of its terrors.

**Diseases Which May Be Associated with Pernicious Anemia.**—In 108 of 628 cases of pernicious anemia analyzed by Giffin and Bowler, other diseases were also present, such as syphilis, hemorrhage, gallbladder disease, chronic sepsis, renal insufficiency and hypertension, carcinoma (breast, colon, uterus, esophagus and stomach), thyroid disease, tuberculosis, diabetes and intestinal parasitism. A general survey of this series of cases leads Giffin and Bowler to conclude that it is doubtful whether the complete pernicious anemia syndrome is ever seen as a result of other disease. The notable and striking exception to this statement is infestation by *Balan-tidium coli*, which in the four cases in which it was present has always been accompanied by the features of pernicious anemia—glossitis, achlorhydria and subacute combined sclerosis. The absence of active tuberculosis in association with pernicious anemia is a notable feature of the series.

**Visual Albuminuria Guide.**—By means of a chart consisting of photographic reproductions of actual tests made with known solutions of albumin from a case of nephritis, Cook has devised a visual method of estimating the degree of albuminuria.

**Preoperative Preparation in Obstructive Jaundice.**—Thirty-four patients with obstructive jaundice were operated on after having first received the preoperative treatment suggested by Walters. None of the patients died of hemorrhage; in only two bleeding occurred from the wounds following operation. All of the patients had jaundice of 2 plus or more (on a basis of from 1 to 4), and 80 per cent. were judged risks 3 or 4 by the consulting surgeon. An estimation of the coagulation time was made according to the method of Lee

and White before the administration of calcium chlorid intravenously each day and on the morning of the day of operation. If the coagulation time of the venous blood had not been lowered to less than nine minutes, operation was postponed until such reduction was obtained. Although the coagulation time of the venous blood was nine minutes or less, in some of the patients with jaundice it was thought best to administer calcium chlorid intravenously as a precaution against postoperative hemorrhage. The treatment consists of three intravenous injections of 5 c.c. of a 10 per cent. solution of calcium chlorid.

### New Orleans Medical and Surgical Journal

January, 1923, 75, No. 7

- Acute Osteomyelitis in Children; Report of Cases. J. C. Willis, Sr., and J. C. Willis, Jr., Shreveport, La.—p. 337.  
Glandular Fever. S. C. Jamison, New Orleans.—p. 346.  
Medical Social Service for Childhood of Louisiana. M. Loebér, New Orleans.—p. 350.  
\*Hyperemesis Gravidarum. T. B. Sellers, New Orleans.—p. 354.  
Leukemia. E. L. Irwin, New Orleans.—p. 366.

**Vomiting of Pregnancy.**—Sellers reports five cases. As soon as the patient is unable to retain a sufficient quantity of food by mouth to nourish her, and keep down an acidosis, he institutes proctoclysis, using 8 per cent. glucose and 2.5 per cent. sodium bicarbonate solution, also Bacon's formula: 20 gm. glucose; 125 gm. beef peptonoids; 3 gm. calcium chlorid; 4 gm. sodium chlorid; 3 gm. sodium bicarbonate and water to make 1,000 c.c. In severe cases the duodenal tube has proved of great value; also intravenous injections of glucose should not be overlooked. Ovarian extract and corpus luteum have not helped in any of Sellers' cases.

### Pennsylvania Medical Journal, Harrisburg

January, 1923, 26, No. 4

- Relation of Mental Hospital to Community. J. A. Jackson and H. V. Pike, Danville.—p. 209.  
Anthrax. F. B. Utley, Pittsburgh.—p. 213.  
Tuberculosis of Bones and Joints. D. P. Willard, Philadelphia.—p. 220.  
Syphilis of Bones and Joints. B. F. Buzby, Philadelphia.—p. 223.  
\*Subjective Symptoms and Differential Leukocyte Count as Aids in Prognosis in Pernicious Anemia. F. A. Evans, Pittsburgh.—p. 228.  
\*Treatment of Pernicious Anemia. A. H. Colwell, Pittsburgh.—p. 232.  
Eye Symptoms in Case of Oxycephaly; Report of Necropsy. C. E. G. Shannon, Philadelphia.—p. 236.  
Cardiospasm. H. P. Mosher, Boston.—p. 240.  
Phenolphthalein Drug Eruption. J. V. Klauder, Philadelphia.—p. 249.  
\*Use and Abuse of Corpus Luteum Extract in Toxic Vomiting of Early Pregnancy. J. S. Taylor and S. P. Taylor, Altoona.—p. 252.  
\*Aneurism of Iliac Artery. F. T. Billings, Pittsburgh.—p. 256.  
Important Points in Surgical Treatment of Toxic Goiter. J. Alexander, Pittsburgh.—p. 256.

**Symptoms and Leukocyte Count as Aids in Prognosis in Pernicious Anemia.**—Evans claims to be able to predict, in a large percentage of cases of pernicious anemia, an oncoming remission several days before it became apparent in the erythropoietic system. Improvement in the level of anti-hemolytic power of the serum in pernicious anemia precedes an oncoming remission by several days. Such elevation of the anti-hemolytic power of the serum becomes manifest very early by improvement in the subjective symptoms of the patient and frequently by an increase in the absolute number of polymorphonuclear leukocytes counted. These features, therefore, help one to predict an oncoming remission, and for this reason are an aid to judgment in deciding for or against a proposed blood transfusion.

**Treatment of Pernicious Anemia.**—Colwell is of the opinion that transfusion of human blood in the treatment of pernicious anemia is useful in stimulating remissions, and that small doses frequently repeated are of as great value as larger ones and less dangerous.

**Corpus Luteum Extract in Toxic Vomiting of Early Pregnancy.**—The Taylors report two abortions which followed the administration of corpus luteum extract intravenously. They favor the intramuscular route. The dosage must be determined for each patient; the dosages recommended are regarded as being too high. Small dosages frequently repeated, and by intramuscular injection, is said to be the logical method to employ. Corpus luteum extract should be used in those cases of vomiting of early pregnancy which are of toxic type.



**Ruptured Aneurysm of Iliac Artery.**—Billings' case was one of rupture of an aneurysm of the left common iliac artery, with a moderate dilatation of the right. The walls of the artery showed undoubted syphilitic infiltration.

### Philippine Journal of Science, Manila

December, 1922, 21, No. 6

Additions to Knowledge of Bornean Flora. E. D. Merrill, Manila.—p. 515.

\*Schistosomiasis in Philippine Islands. M. P. Mendoza-Guazon.—p. 535.  
Coleoptera Fauna of Philippines. Von W. Schultze, Manila.—p. 569.

**Schistosomiasis in Philippines.**—Ten cases of infection with *Schistosoma japonicum* are reported by Mendoza-Guazon. None of these cases was diagnosed antemortem, partly due to the general belief that schistosomiasis is absent from the islands and partly because of the clinical symptoms, which in a subtropical country can be interpreted as those of malaria, typhoid, dysentery, portal cirrhosis, etc. Another cause is the difficulty of finding the ova in the stools and, when found, of recognizing them. Mendoza-Guazon regards a survey of the existing degree of infection in Manila and in Samar, as well as of the presence of its intermediary host, as being advisable in order to facilitate the enforcement of preventive measures.

### Public Health Journal, Toronto

January, 1923, 14, No. 1

Vice and Drugs in Montreal. A. K. Haywood.—p. 1.  
Prevention of Tuberculosis in School Age. J. H. Helbrook.—p. 19.  
Sewage Treatment for Isolated Houses and Small Institutions Where Municipal Sewage is Not Available. B. E. Parry.—p. 27.

### Southwestern Medicine, Phoenix, Ariz.

January, 1923, 7, No. 1

State Medicine. M. K. Wylder, Albuquerque, N. M.—p. 1.  
Treatment of Vincent's Angina with Sodium Perborate. W. W. Waite, El Paso, Tex.—p. 4.  
Compound Fractures of Extremities. R. L. Ramey, El Paso.—p. 6.  
Metamorphosis of Pathologic Conditions of Abdomen. E. C. Prentiss, El Paso.—p. 8.  
Glycosuric Nephritis, A Clinical Entity? C. S. Vivian, Phoenix.—p. 12.

### Surgery, Gynecology and Obstetrics, Chicago

January, 1923, 36, No. 1

Rhinoplasty and Cheek, Chin and Lip Plastics with Tubed, Temporal Pedicled, Forehead Flaps. C. A. McWilliams and H. S. Dunning, New York.—p. 1.  
\*Parathyroid Hyperplasia and Bone Destruction in Generalized Carcinomatosis. P. Klemperer, Chicago.—p. 11.  
\*Unilateral Diuresis. A. Fullerton, Belfast, Ireland.—p. 16.  
Regeneration of Resected Urinary Bladders in Rabbits. H. Schiller, Chicago.—p. 24.  
Diverticula of Bladder in Children. A. Hyman, New York.—p. 27.  
Bladder Neck Obstructions: Their Surgical Relief in Reference to Young Pouch. W. P. Parker, Los Angeles.—p. 36.  
Clinical Investigation of Vulvovaginitis. I. F. Stein, Chicago.—p. 43.  
\*Metabolism Readings in Eighty-Four Pregnant Cases. E. L. Cornell, Chicago.—p. 53.  
Recurrence of Benign Prostate. W. A. Bryan, Nashville, Tenn.—p. 59.  
Necessity for Caution in Employment of High Voltage Roentgen Rays as Therapeutic Agent Against Malignant Disease: Acute Suprarenal Insufficiency and Death as Sequels. F. Smithies, Chicago.—p. 61.  
\*Radium Treatment of Keloids. E. M. Daland, Boston.—p. 63.  
\*Blood Supply of Thyroid; Its Surgical Significance. E. V. Mastin, Rochester, Minn.—p. 69.  
\*Histologic Study of Effect of Ligation of Thyroid Vessels in Exophthalmic Goiter. A. S. Giordano and Harold D. Caylor, Rochester, Minn.—p. 75.  
Hemorrhage Following Abdominal Operations: With Special Reference to Appendectomy and Excluding Bleeding from Stump. C. H. Phifer, Chicago.—p. 80.  
\*Distribution of Acid Cells Along Dorsal Curvature of Stomach and Possible Relation to Occurrence of Gastric Ulcer. H. E. Radasch, Philadelphia.—p. 87.  
Tetanus: Report of One Hundred Sixteen Cases. R. H. Miller, Boston.—p. 90.  
\*Bone Grafting. W. R. Adams, Savannah, Ga.—p. 97.  
\*Damper Gastro-Enterostomy. J. C. O'Day, Honolulu.—p. 99.  
Prostatic Problem. D. W. MacKenzie and M. I. Seng, Montreal.—p. 102.  
No Hand Touch Technic. A. R. Grant, Utica, N. Y.—p. 106.  
Pituitary Extract in Third Stage of Labor. S. Seides, New York.—p. 108.

**Parathyroid Hyperplasia and Bone Destruction in Generalized Carcinomatosis.**—In Klemperer's case removal of both mammary glands for cancer was followed six months later by pains in the back. On physical examination, she com-

plained of pain over most body structures, especially in the spinal region. The roentgen-ray examination showed multiple cancer metastases in the whole skeleton. At the necropsy, numerous tumor nodes were found in both lungs. The most significant condition, however, was the state of the skeleton. The spine in its whole extent could be cut easily with the cartilage knife; in the right femur large and small nodules, narrowed the cortical substance, while they destroyed the spongy substance of the bone in the epiphysis. There were also metastases in the cranial and sternal bones. The extensive destruction of bone tissue led to an examination of the parathyroid glands. On dissection three were found in normal places; they seemed to be unaltered in size. In the place of the left inferior parathyroid was an oblong, kidney-shaped body 30 by 5 by 3 mm. in size, entirely separated from the thyroid gland. It was yellow in color, and dense in consistency. The histologic picture of the bone metastases revealed not only an extensive bone destruction but also a noticeable new formation of osteoid tissue.

**Unilateral Diuresis.**—Fullerton aims to establish the importance of diminished specific gravity of the urine on the affected side as a sign of unilateral disease of the kidney or disturbance of its function. Forty-eight cases were examined. Thirty-two were verified by operation; in nine cases calculi were passed, and in one case several small stones were discharged through a sinus in the loin. Four cases were bilateral and three of these patients were examined shortly after the calculus had escaped from the ureter. This leaves forty-one cases of unilateral renal calculus examined while the stones were in position. In thirty-one cases the specific gravity was diminished on the affected side. In about 50 per cent. the specific gravity was as low as 1.005 or less on the affected side, as against from 1.015 to 1.025 on the sound side. In two cases the specific gravity was a little higher on the affected side, and in the remaining eight cases it was equal on the two sides. Forty-one cases of tuberculous kidney were examined. Three of these were bilateral and had an equal specific gravity on the two sides. In one case, which was unilateral, there was a low specific gravity, 1.005, on both sides. In all the remaining cases the specific gravity was reduced on the affected side. Thirty-nine cases of unilateral pyelitis were examined. Of these, thirty-three showed a diminished specific gravity on the affected side. Nine cases of tumor originating in the kidney were examined. In seven of these the specific gravity was lower on the affected side. In addition, there were four cases in which the kidney had been involved by extension from a neighboring tumor in the abdomen. In three of these cases there was diminished specific gravity on the affected side. In the remaining case the specific gravity on the affected (left) side was higher than on the sound (right) side, but the right kidney was movable. Two cases of congenital cystic kidney were examined. In one case the specific gravity was low (1.005) on both sides. Fifteen cases of hydronephrosis and four cases of pyonephrosis were examined, and all showed a diminished specific gravity on the affected side. Fifteen cases of movable kidney were examined, and in eight of these the specific gravity was lower on the affected side. Thirty-seven cases classified under the heading of renal hematuria were examined. These were due to such diverse conditions as congenital hemophilia, Henoch's purpura, bilateral nephritis, and the condition known as "essential renal hematuria" or "symptomless hematuria." In twenty-eight the specific gravity was equal on the two sides. In the condition described as "essential renal hematuria" or "symptomless hematuria" the specific gravity is, as a rule, equal on the two sides, and the absence of evidence of disease of the kidney, as seen at operation, would rather lead one to expect this. Forty-four patients were examined for pain in the renal region of such a nature and of sufficient severity to be dignified by the term "renal colic." A definite diagnosis of the cause of the pain was not made. In twenty-seven cases the specific gravity was lower on the side of the pain. Nineteen cases of gunshot wounds of the kidney were examined. In nine of these the specific gravity was lower on the affected side.

**Basal Metabolism in Pregnancy.**—The findings obtained by Cornell in eighty-four cases indicate that there is an increase



in the metabolic rate above normal in pregnant women. It has a wide variation, however. There is nothing approaching a constant. The test is subject to many errors beyond the control of the technician. The mental attitude of pregnant women is not stable, therefore the readings are not always reliable. The results in toxic cases were so variable that no reliable information was obtained. The death of the fetus cannot be predicted from the metabolic rate.

**Radium Treatment of Keloids.**—In every case treated by Daland with radium benefit accrued. Twenty-six patients have had a complete destruction of their lesions. The first evidence of relief was the development of a certain amount of anesthesia in the lesion. Later, there was a disappearance of the itching and pulling sensation. Finally, there was a softening of the scar. There was less variation from the normal color of the skin in the cases treated with absorption doses. In a few of the cases treated with ulcerating doses, telangiectasis followed, but this was by no means always true. There was no evidence to show that the tendency of a given individual to develop these lesions was influenced by the treatment of any one lesion by radium.

**Blood Supply of Thyroid: Its Surgical Significance.**—Mastin shows that the thyroid has a very rich arterial and venous blood supply. There is an extensive anastomosis not only between vessels of the same lobe, but also with those of the opposite lobe. In the event of ligation of all four thyroid vessels, the circulation can be reestablished through extraglandular anastomosis. The secretory activity of the thyroid gland is under nerve control. After ligation of the superior thyroid artery, a polar ligation should be made in order to cut off the veins, lymphatics and remaining nerve filaments. Control of hemorrhage is best accomplished by interrupted mattress sutures placed through the remaining gland tissue, by ligation of all bleeding points, and by the use of gauze packing in the wound if necessary. Bleeding veins can often be demonstrated by having the patient strain or cough before the wound is closed.

**Effect of Ligation of Thyroid Vessels in Exophthalmic Goiter.**—A study was made by Giordano and Caylor of the histology of the thyroid gland for the purpose of determining, if possible, whether any consistent involution changes could be demonstrated following ligation and, if such changes were found, whether or not they could be correlated with the clinical course of the case between the date of ligation and the thyroidectomy. Of the fifty cases of ligated hypertrophic parenchymatous thyroid studied in detail, definite involution changes were found in thirty-three (70 per cent.), while sufficient distinguishing contrast between the ligated and unligated poles could not be demonstrated in the remaining fifteen. In general, this study shows that distinct clinical improvement and lowering of the basal metabolic rate occurred more often in those cases in which definite involution changes in the ligated pole could be demonstrated histologically. On the other hand, a few definite exceptions demonstrated that a correlation between the clinical findings and the presence or absence of involution changes is not to be expected in all cases.

**Relation of Acid Cells in Stomach to Ulcer.**—Although there seems to be some relation between the occurrence of gastric ulcers in the different regions of the stomach and the distribution of the acid cells, Radasch says that the evidence is too little to be conclusive.

**Bone Grafting.**—Adams takes the graft which is to be implanted intramedullarily from the fractured bone, either above or below the line of fracture, depending on which would be the more practical, considering the location of the fracture, muscles, blood vessels and nerves. The graft should be about 4 or 5 inches long and should not extend closer than within 2 inches of the fracture. The graft is cut with the twin saw. The ends, one of which is blunt, the other pointed, are cut with a single saw. The graft includes the periosteum and endosteum. The pointed end is inserted into the opening from which the graft has been cut, is pushed into and down the medullary canal past the line of fracture, into the medullary canal of the other end of the fractured bone, so that 2 or 3 inches lies in the proximal and a similar

length in the distal part of the fractured bone, thus bridging the fracture. As the graft is the exact width of the medullary canal, it fits snugly and holds the fractured bones firmly and in good position.

**Damper Gastro-Enterostomy.**—In O'Day's operation three lines of suture are made—the second line being seromuscular. After the stomach and jejunal walls are divided on either side of this line, respectively, there is left a sort of damper or "flapper" valve. O'Day claims for his method that it will entirely do away with all the menacing postoperative features of the earlier operation: retarded hemorrhage, ulceration of that portion of the stomach wall pressed by the blades of the clamps, regurgitation of bowel contents, and ulceration of the jejunal wall where it is forcibly struck by the chyme.

### Virginia Medical Monthly, Richmond

January, 1923, 49, No. 10

- Focal Infection in Chronic and Recurring Discase. C. H. Mayo, Rochester, Minn.—p. 557.
- \*Tuberculosis Problem and Negro. H. R. M. Landis, Philadelphia.—p. 561.
- \*Tuberculosis in Rural Virginia. H. R. Edwards, Richmond.—p. 566.
- Is Progress Being Made in Surgical Treatment of Acute Abdominal Conditions? A. M. Willis, Richmond.—p. 573.
- Forces Which Prevent Modern Medicine from Being a Success. A. A. Houser, Richmond.—p. 578.
- Regional Anesthesia. S. Leigh and J. H. Culpepper, Norfolk.—p. 581.
- Case of Abscess of Lower Right Lobe of Lung Treated by Artificial Pneumothorax. C. L. Harrell, Norfolk.—p. 585.
- Where Can We Find Cases of Incipient Tuberculosis? C. R. Grandy, Norfolk.—p. 586.
- Therapeutic Use of Bacillus Acidophilus Milk in Richmond. G. F. Reddish and E. C. L. Miller, Richmond.—p. 590.
- Treatment of Eclampsia. J. L. Early, Saltville.—p. 595.
- Relation of Medical Examiner to Life Insurance Company. J. H. Dunkley, Roanoke.—p. 599.
- Prevalence of Unsuspected Chronic Maxillary Sinus Infection. E. T. Gatewood, Richmond.—p. 601.

**Tuberculosis in Negro.**—Tuberculosis in the negro, Landis says, is an interesting chapter in the etiology of this disease. He here relates the experience gained by the Phipps Institute in its fight against tuberculosis among negroes. A special clinic is in charge of a capable colored physician, who has colored nurses to help him. At present a force of six nurses and three physicians is working among the colored population. In addition, the Jefferson Hospital for Diseases of the Chest has one colored physician and one nurse. In addition to its specific problem of dealing with tuberculosis, the Phipps Institute conducts a prenatal and postnatal clinic and a syphilis clinic. Each member of the graduating class of the Mercy Hospital (a negro institution) serves for a period of two months. While the time is short, it gives these nurses some idea of the tuberculosis and public health problems. The first nurse taking this course was sent to Wilmington, Del., to take charge of a negro tuberculosis dispensary which had been a failure. As a result of her energy the attendance at this dispensary was tripled in two months and the dispensary days increased from one to three. Taking all these experiences into consideration, this deduction would seem warranted: That those institutions that make use of negro doctors and nurses for the care of patients of the same race are, from the standpoint of number of patients and regularity of their attendance, most successful in the treatment of negro patients.

**Standardized Method of Diagnosis in Tuberculosis.**—Edwards suggests the need of some standardized method of diagnosis. It is now sometimes difficult to understand exactly what is meant by certain tuberculosis diagnosis. If a set standard could be adopted, all cases could be classified in accordance.

### West Virginia Medical Journal, Huntington

January, 1923, 17, No. 7

- General Practitioner's Compensation. O. S. Hare, Bluefield.—p. 241.
- Profiteers. C. H. Maxwell, Morgantown.—p. 249.
- Diagnosis and Treatment of Carcinoma of Cervix. W. Neill, Jr., Baltimore.—p. 258.
- Doctor and Public Health Service in Their Relations to the Public. N. R. Price, Marlinton.—p. 263.
- Prognostic Value of Blood Chemistry in Surgery. J. C. Bauer and R. W. Stoneburner, Montgomery.—p. 265.
- Modern Conception of Amputation. R. K. Buford, Charleston.—p. 270.
- Management of Hypertension. W. B. Porter, Roanoke.—p. 273.



FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

**Archives of Radiology and Electrotherapy, London**

December, 1922, 27, No. 269

Employment of Electrical Methods in Diagnosis and Prognosis of Paralysis Due to Lesions of Peripheral Nerves. G. Bourguignon.—p. 193.

Manual Treatment of Backache and Referred Pain. Wetterwald.—p. 212.

**British Medical Journal, London**

Jan. 13, 1923, 1, No. 3237

\*Clinical Manifestations of Tabes Dorsalis. G. Holmes.—p. 47.

\*Applications of Physiology to Medicine. I. Sensory Phenomena Associated with Defective Blood Supply to Working Muscles. J. A. MacWilliam and W. J. Webster.—p. 51.

Clinical, Pathologic and Radiologic Aspects of Infection of Teeth and Gums. W. Willcox.—p. 53.

Value of Butyn as Local Anesthetic. W. M. Beaumont.—p. 57.

Standards of Vision for Scholars and Teachers in Council Schools. N. B. Harman.—p. 58.

\*Effect of Anesthetics on Lungs. R. J. S. McDowall.—p. 61.

Intestinal Obstruction Following Acute Appendicitis and Peritonitis. P. F. McFarlan.—p. 61.

**Diagnosis of Tabes Dorsalis.**—The diminution, loss, or alteration of sensibility to pinprick in the distal portions of the lower limbs, the thoracic zone, the radial borders of the arms, and the central portion of the face, Holmes points out, constitutes the most common, the most definite, and the most characteristic physical sign of tabes dorsalis. It is frequently present when the knee-jerks and the pupillary reactions are normal and before ataxia or other symptoms develop, and it is consequently a most important phenomenon in the diagnosis of the disease. The loss of sensation in these areas is a dissociated one—that is, its different modalities are affected in different degrees, or some forms only may be disturbed. Touch, for instance, is frequently intact on the chest and face at least, and the affection of thermal sensibility is inconstant and irregular. Its diagnostic value is enhanced by the fact that in no other disease is there dissociated analgesia of a similar distribution.

**Sensory Phenomena Associated with Defective Blood Supply to Working Muscles.**—MacWilliam and Webster investigated the behavior of human muscles temporarily deprived of their blood supply while innervation remained intact; the sensory phenomena recognizable in the states of rest and activity were examined and brought into relation with other functional conditions, such as changes in contractile power, etc. It was found that simple deprivation of blood in the ischemic limb for periods up to twenty minutes caused no great sensory effects, only coldness in the bloodless part, with an inclination to shift the position of the limb, and a certain amount of discomfort from the continued constriction by the obliterating armlet; the absence of pain is to be noted. Muscular action in the ischemic limb soon becomes painful, and when carried to the point of "fatigue" is acutely painful. The pain arises from exercise of a comparatively small amount of muscular tissue—in the presence of an acute lack of blood supply, involving urgent want of oxygen (anoxemia) and its consequences, with excessive accumulation of metabolic products, acids, and other bodies. The authors are convinced that the pain is protective in character, tending to limitation of effort and shielding the muscle from being spurred on to further and injurious activity. These observations have a close bearing on the problems associated with the pain of angina pectoris, and the experiments also have an obvious application to the phenomena of the condition called "intermittent claudication," as seen in the legs of men and horses, in which muscular exertion is interrupted by attacks of pain, loss of power, coldness of the limbs, etc.

**Effect of Anesthetics on the Lungs.**—Recovery from the pulmonary effects occurs after ether, McDowall says, but after deep and prolonged anesthesia with chloroform recovery is the exception. The actual death of tissue in the lungs as a result of the anesthetic does not appear to be a remote possibility: that the absorption of toxic products from such dead tissue should produce delayed chloroform poisoning seems most reasonable. Another function abolished is that

of the bronchioles, which limit the amount of air passing into the alveoli. McDowall has demonstrated that the action of epinephrin on the bronchioles may similarly be prevented by deep anesthesia. The evidence indicates that deep or prolonged anesthesia with ether, and especially with chloroform, should be avoided whenever possible. It is suggested that narcotics should be more extensively used to supplement volatile anesthetics.

**Irish Journal of Medical Science, Dublin**

December, 1922, 5, No. 10

What Makes for Success in Surgical Treatment. W. I. de C. Wheeler.—p. 437.

Enteric-Salmonella Bacilli. W. D. O'Kelly.—p. 452.

Oil-Ether Colonic Anesthesia by Control Method. A. E. Boyd.—p. 472.

**Japan Medical World, Tokyo**

December, 1922, 2, No. 12

\*Experimental Results of Artificial Production of Mammary Carcinoma in Last Five Years. K. Yamagwa and K. Murayama.—p. 337.

\*Amounts of Enzymes in Duodenal Fluid in Exophthalmic Goiter. K. Gytoku.—p. 339.

\*Influence of Corean Ginseng on Metabolism. S. Inada and J. Takamizu.—p. 343.

Relation of Immunity and Bactericidal-fast Bacillus Mallei. H. Toyota and D. Kaku.—p. 345.

**Artificial Production of Breast Cancer.**—During the last five years Yamagwa and Murayama inoculated pure tar, tar extract, tar extract lanolin, tar lanolin, liquid paraffin or tar olive oil, but mainly tar or tar lanolin, into the mammary regions of 188 female rabbits, in doses from 0.3 to 1 c.c., once or twice a month. In twenty-three rabbits, or 12.23 per cent., carcinoma developed.

**Enzymes in Duodenal Fluid in Cases of Exophthalmic Goiter.**—A quantitative determination was made by Gytoku of the enzymes contained in the duodenal fluid in twenty cases of exophthalmic goiter. In 60 per cent. of the cases these enzymes were diminished in amount. These patients also had marked digestive disturbances. There was no relation between the amount of enzymes in the duodenal fluid and the degree of disturbances of carbohydrate metabolism.

**Influence of Ginseng on Metabolism.**—Inada and Takamizu assert that when ginseng is taken in large amount, there is a slight increase of splitting of body protein, but not enough to reduce the body weight. As the result of temporary stimulation, the urine output is increased, but it soon decreases markedly, and returns to normal after a while. Although ginseng decreases the urine output, it has no influence on the constituents of the urine.

**Lancet, London**

Jan. 6, 1923, 1, No. 1

Modern Methods of Diagnosis and Treatment of Syphilis of Nervous System. F. W. Mott.—p. 1.

Treatment of Syphilis; Especially Its Later Manifestations. L. W. Harrison.—p. 4.

\*Tuberculous Affections of Tongue. R. M. Handfield-Jones.—p. 8.

\*Forms of Tuberculous Arthritis and Their Treatment. E. Ward.—p. 11.

Thoracic Surgery: War Lessons in Civil Practice. R. P. Rowlands.—p. 16.

\*Identity of Toxins Produced by Serologically Different Strains of Diphtheria Bacillus. P. Hartley.—p. 17.

\*Wagner's New Treatment of General Paralysis. A. Pilcz.—p. 19.

\*Bacteriology of Ozena. K. Sakagami.—p. 19.

\*Case of Primary Carcinoma of Lung. H. J. C. Gibson and G. M. Findlay.—p. 21.

\*Diabetes Mellitus in an Infant Aged Five Months. H. T. Ashby.—p. 22.

\*Endothelioma of Male Breast Following an Injury. H. K. Griffith.—p. 22.

Barium in Harrogate Waters. A. Woodmansey.—p. 22.

Two Cases of Congenital Hemihypertrophy. D. Paterson.—p. 23.

**Tuberculosis of Tongue.**—Five cases of lingual tuberculosis are reported by Jones. An inquiry made of ten general hospitals and ten sanatoriums revealed only twelve cases. The author's patients ranged in age from 28 to 59 years. Three were males. Pulmonary tuberculosis was present in all of them. In one case a diagnosis of cancer was made. Microscopic examination of the tissue removed confirmed the diagnosis of tuberculosis in each case.

**Tuberculous Arthritis.**—A new classification for tuberculous joints is suggested by Ward: (1) monarticular tuber-



culous arthritis: (a) major and (b) minor arthritis; (2) polyarticular tuberculous arthritis: (a) suppurative, (b) rheumatoid, (c) osteoarthritic, and (d) arthritis deformans; (3) tuberculous rheumatism; (4) aberrant forms of tuberculous arthritis. A minor tuberculous arthritis is described. Relative, rather than absolute, immobilization for tuberculous joints is advised. Short cuts in the treatment of tuberculous arthritis are discussed.

**Efficacy of Monovalent Diphtheria Antitoxin.**—Fifteen strains of the diphtheria bacillus were investigated by Hartley. The results obtained are in agreement with those obtained by Paxson, Redowitz, Park, Williams and Mann. Further, these results obtained experimentally in the laboratory are in accord with the vast amount of clinical evidence concerning the efficacy of monovalent diphtheria antitoxin which has been accumulated during the last twenty-five years all over the world. Hartley says it is reasonable to suppose that if different strains of diphtheria bacilli produced toxins which exhibited wide differences in their affinity for antitoxin, evidence—or at least indications—of this would have been forthcoming from workers studying diphtheria from the clinical side. As Park, Williams and Mann have pointed out, ever since diphtheria antitoxin has been used in practice hundreds of thousands of persons known to be contacts have been given practically complete protection for two weeks by the injection of monovalent antitoxin; and, further, routine virulence tests throughout the world have shown that a monovalent antitoxin protects animals against a dose of living culture fatal to animals not given antitoxin.

**Wagner's Treatment of General Paralysis.**—The von Wagner treatment consists in the subcutaneous injection of the blood of an untreated malaria patient into a general paralytic. Pilcz reports his experiences with this method of treatment in 141 cases. Fifty-one patients have completely recovered; eighteen show marked and persisting remission without being able, however, to return to their former occupations. Fifty-seven cases became stationary or showed an incomplete remission. Fifteen patients died. Pilcz points out that there is no parallelism in the degree and duration of the remissions, on the one hand, and in the serologic reactions (lumbar fluid, etc.) on the other. The best results are obtained in cases with maniacal symptoms and in cases of simple demency; the hypochondriacal, presenile and catatonic forms of disease show a less favorable prognosis. Generally, remission does not immediately follow treatment; it develops gradually, finally becoming permanent. This method is employed, not only in cases of general paralysis, but also in tabes and other forms of neurosyphilis. In disseminated sclerosis, also, good results have been obtained.

**Bacteriology of Ozena.**—The results of Sakagani's experiments, briefly, were: The so-called ozena bacillus, obtained from the nasal passages of ozena patients, agrees in all important points with the coccobacillus of Perez. The coccobacillus is to be found only in ozena patients, and not in persons suffering from other nasal diseases nor in healthy persons. By experimental infection of the nasal passages of rabbits, Sakagani was able to produce symptoms closely agreeing with those of human ozena. In the various immune tests with this coccobacillus the serum of ozena patients generally showed a weak reaction; with some patients, however (i. e., those tending toward recovery), the specific reactions were remarkably strong. It could be demonstrated that the serum from a rabbit immunized against this coccobacillus produces various immune bodies with great intensity. In animal experiments with this bacillus the presence of immune bodies in the serum was clearly demonstrable; on the other hand, the reactions of the serum of most patients were rather weak. This can be explained from the nature of the disease, which causes merely local changes, so that in the general circulation the antibodies appear only in small quantities. From these experiments Sakagani is convinced that his coccobacillus may be considered to be the causative agent of ozena.

**Primary Carcinoma of Lung.**—The primary lung tumor in the case reported by Gibson and Findlay was composed of cylindric columnar cells, arranged for the most part in papillary-like tufts. Much of the tumor had undergone a myxomatous type of degeneration. No evidence of a tuber-

culous process could be detected in either lung. A columnar type of cell was found in a pancreatic metastasis. In the suprarenals, however, the cells showed more irregularity in their shape; some were columnar; others were definitely polyhedral, while the general arrangement was more diffuse. In the secondary growths present in the skin and muscles a definite squamous cell metaplasia had taken place; all transitional types of cell were noted, from columnar epithelium to squamous epithelium, the latter, arranged in cell masses, resembling those found in a typical squamous epithelioma. There was no actual formation of keratin by these squamous cells.

**Diabetes Mellitus in Infant Aged Five Months.**—Ashby's patient was admitted to the hospital with the diagnosis of pyelitis. She had a dry, scaly skin, which seemed to irritate. The urine (catheter specimen) was acid and cloudy, and contained a small quantity of albumin. Microscopically pus cells and *B. coli* in large numbers were seen. During the first three weeks in the hospital the baby gradually lost weight, had frequent loose stools, had a continuous rise of temperature, and was always restless. The urine became much clearer and less acid, though the temperature became higher. At the end of the third week, the second toe of the left foot became black and gangrenous. The urine was positive for sugar. There was never enough urine to estimate with accuracy the amount of sugar or the specific gravity. Two days later, the second toe of the opposite foot started in the same way. A fortnight later both toes came off and the surrounding skin became healthier. The loss of weight was slow but gradual. The baby died six weeks after admission.

**Endothelioma of Male Breast Following Injury.**—In April, Griffith's patient, a man, aged 50, received a blow from a horse's bit just above the right nipple. At the end of May the condition had cleared up, except for a definite cystic tumor, which was freely movable in the surrounding tissues and not attached to the skin. In July, conditions were such that operation was advised. The breast was removed. The tumor (macroscopically) was encapsuled, and did not infiltrate the breast tissue or the skin, which was much stretched over it at one point. The sections showed a degenerating endothelioma. It seems probable to Griffith that the injury led to the formation of a hematoma, and the irritation caused by the presence of this blood clot gave rise to so much endothelial proliferation that an actual tumor, an endothelioma, arose in that situation.

### Sei-I-Kwai Medical Journal, Tokyo, Japan

December, 1922, 41, No. 6

\*Influence of Some Antiseptics and Narcotics on Movement of Spermatozoa. Y. Ishikawa.—p. 1.

\*Experiments in Deep Breathing on Animals for Its Prophylactic Effects on Pulmonary Tuberculosis. S. Otabe.—p. 21.

\*Tubercle Bacilli in Blood Stream of Tuberculous Animals. S. Otabe.—p. 32.

**Influence of Antiseptics and Narcotics on Movement of Spermatozoa.**—This paper is concerned with the influences of some antiseptics and narcotics, in dilute solution, on the movement of spermatozoa outside the body. The chief purpose of Ishikawa's investigation was aimed at the theoretical basis of the modern methods of preventing conception.

**Prophylactic Effect of Deep Breathing on Pulmonary Tuberculosis.**—Otabe's experiments confirm the theory that deep breathing has a retarding influence on the tuberculous process. The process in the lungs of animals to which deep breathing was applied was less developed than in the controlled animals.

**Tubercle Bacilli in Blood Stream.**—Otabe's investigation was negative. He used water freshly distilled every day. Although clinically the experiment animals gave every evidence of tuberculosis, he never found tubercle bacilli in the blood microscopically, nor was he able to obtain a culture from the blood.

### Bulletin de l'Académie de Médecine, Paris

Dec. 26, 1922, 88, No. 43, The Pasteur Centennial

\*President's Address. A. Béhal.—p. 621.

\*Pasteur and General Biology. Delezenne.—p. 636.



- \*Pasteur's Work and Medicine. F. Widal.—p. 646.  
\*Pasteur's Work and Surgery. P. Delbet.—p. 658.  
\*Pasteur's Work and Obstetrics. V. Wallich.—p. 673.  
\*Pasteur's Work and Veterinary Medicine. Barrier.—p. 679.  
\*Pasteur's Work and the Progress of Hygiene. A. Calmette.—p. 684.

**Pasteur's Centenary.**—The addresses published in this number were delivered at the Pasteur centennial celebration at the Académie de Médecine, and were reviewed in the Paris Letter, January 27, p. 265.

### Bulletin Médical, Paris

Dec. 9, 1922, 36, No. 50

- \*The Liver in Children. P. Lereboullet.—p. 1009.  
Surgical Treatment of Adenosarcoma of Breast. T. Asteriades.—p. 1015.

**The Liver in Children.**—Lereboullet surveys the symptomatology and pathology of the liver in children. The liver is relatively larger than in adults, and palpation is of great importance. In testing for alimentary glycosuria, comparatively large amounts of glucose should be used, for instance, 80 gm. for a child of 20 kg. The test is frequently positive in rachitis, scarlet fever, diphtheria and gastro-enteritis.

Dec. 16, 1922, 36, No. 51

- \*Biologic Treatment of Gonorrhea. A. Grimberg and M. Uzan.—p. 1035.

**Biologic Treatment of Gonorrhea.**—Grimberg and Uzan review the nonspecific biologic treatment of gonorrhea. They point out that antimeningococcus serum is not effective against variant types of meningococcus. Antigonococcus serum and vaccines may have only a slightly greater value than nonspecific preparations, but the specific action is an advantage. The doses of the specific vaccine have to be very large.

### Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 8, 1922, 46, No. 35

- \*Bronze-Skin Not Due to Addison's Disease. A. Sézary and J. Levesque.—p. 1644.  
\*Lineal Striae After Right Pneumothorax. E. Rist and P. Jacob.—p. 1646.  
\*Purulent Gonorrheal Arthritis. B. Weill-Hallé and Turpin.—p. 1649.  
\*Cardiac Infantilism. C. Oddo and E. Girbal.—p. 1652.  
\*Chronic Lymphoid Leukemia. J. Tapie.—p. 1656.  
\*Hereditary and Familial Exostoses. E. Lenoble and Y. Jégat.—p. 1661.  
\*Induced Pneumothorax with Normal Pregnancy. A. Gendron.—p. 1669.  
\*Localized Tetanus of Right Leg. A. Bergé and R. Azoulay.—p. 1674.

**Bronze-Skin Not Due to Addison's Disease.**—Sézary and Levesque present the clinical history and histologic findings of a tuberculous woman who had all the symptoms of Addison's disease except increased fatigability and low blood pressure. Necropsy confirmed the clinical supposition of normal suprarenal capsules.

**Parallel Striae After Right Pneumothorax.**—Rist and Jacob present the case of a young girl with many parallel striae on the side opposite to an artificial pneumothorax. The side with the striae was 6 cm. broader than the side with the pneumothorax. Abnormal fragility of the skin is the probable cause.

**Purulent Gonorrheal Arthritis Cured by Serotherapy.**—Weill-Hallé and Turpin present a case of purulent gonorrheal arthritis with recovery after intra-articular serotherapy. Intravenous injections of calcium chlorid influenced favorably the serum disease.

**Cardiac Infantilism.**—Oddo and Girbal report a case which they call cardiac infantilism, because they attribute the lack of genital development in the 16 years old girl to a mitral stenosis acquired in early childhood.

**Chronic Lymphoid Leukemia.**—The patient died of lobar pneumonia. The alveolar exudate consisted of polymorphonuclears, while the capillaries were filled with lymphocytes.

**Hereditary and Familial Osteogenous Exostoses.**—Lenoble and Jégat suggest that tuberculous infection may influence the whole body in a way similar to syphilis, and cause endocrine disturbances entailing malformations in the offspring.

**Induced Bilateral Pneumothorax with Normal Intercurrent Pregnancy.**—Gendron performed a left pneumothorax on his patient in 1919. In 1921 the woman became pregnant, and tuberculosis developed in the right lung. He allowed the resorption of the left pneumothorax, and instituted another

on the right side which he has continued with good success for ten months to date.

**Hyperchronic Tetanus Localized in Leg.**—Bergé and Azoulay's patient had been wounded in his right knee by fragments of a shell in 1915. Contracture developed in this leg, with a perforating ulcer, two years later. The contractions varied in strength and extent and, to relieve the causalgia, sympathectomy was done but without benefit. The tetanus in the limb became more pronounced and in 1922 extended to the whole body, except the face, and proved speedily fatal, rebellious to antitetanus treatment.

Dec. 15, 1922, 46, No. 36

- \*Diagnosis of Addison's Disease. E. Sergent.—p. 1679.  
\*Treatment of Bronchiectasis. L. Ribadeau-Dumas and Mocquot.—p. 1688.  
\*Arthrotypoid. H. Bourges.—p. 1691.  
Mixed Epidemic Encephalitis. H. Bourges and M. Breuil.—p. 1696.  
\*Diastolic Murmur in Hypertension. A. Bergé and G. Basch.—p. 1700.  
Unilateral Pulmonary Tuberculosis with Cavity Improved by Artificial Pneumothorax. G. Caussade and Derville.—p. 1706.  
\*Duodenal Intubation in Jaundice. E. Chabrol et al.—p. 1710.  
Hydrocephalus with Obesity. Bonnet et al.—p. 1723.  
Gonococcus Abscess of Wrist and Hand. Klippel and Rachet.—p. 1731.

**Diagnosis of Addison's Disease.**—Contrary to Sézary, Sergent contends that it is possible to make a safe clinical diagnosis of Addison's disease even in the absence of some signs, and gives a new example. He believes that extremes in critical analysis are just as dangerous as abuses of generalization.

**Surgical Treatment of Bronchiectasis.**—The woman, aged 35, had suffered for twenty years from bronchiectasis which showed at last signs of a cavity, hemoptysis and purulent sputum. Pneumonotomy performed after delivery of a child, was followed by almost complete success.

**Arthrotypoid.**—Bourges publishes three cases of typhoid affecting joints in its acute stage.

**Diastolic Murmur in Nephritis Hypertension.**—Bergé and Basch attribute the diastolic murmur in their case of nephritic hypertension to two small congenital openings in the aortic valves. In the discussion of the case, Laubry expressed the opinion that the diastolic murmurs in similar cases of hypertension are due to dislocation of the valve opening by dilatation of the ventricle. They may be present even with healthy valves.

**Duodenal Intubation in Jaundice and Cirrhosis of the Liver.**—Chabrol, Bénard and Gambillard studied the secretion of bile in forty patients with affections of the liver. In some cases the examination was repeated several times. The most interesting result was the observation that in atrophic cirrhosis of the liver, there need not be diminution of the biliary pigments nor of the salts. Obstruction in catarrhal jaundice is rarely absolute. This is sufficiently constant to explain the direct origin of stercobilin in the stools. They doubt the theory of dissociated icterus. In every jaundice the amount of salts is comparatively lower than that of bilirubin. This is due sometimes to exaggerated hemolysis. In other cases, it seems that Schiff's law (circulation of biliary acids from the liver to the intestine and back), explains the loss of acids and their lack in the bile when the circle is interrupted.

### Journal de Médecine de Bordeaux

Nov. 10, 1922, 94, No. 21

- Epidermomycoses. G. Petges.—p. 695.  
\*Therapeutic Value of Physical Culture. P. Cadenaule.—p. 700.

**Physical Culture in Affections of Children.**—Cadenaule had excellent results with systematic gymnastics in children suffering from adenoids, tuberculous habitus, neuritis or some other pathologic conditions. He emphasizes the beneficial effects on the development of body and mind, and especially on the normal sexual development of girls.

### Journal de Médecine de Lyon

Dec. 20, 1922, 3, No. 71

- \*Ascaris Outside of Human Intestine. J. Guiart.—p. 747.  
\*Human Parasitology in Roumania. N. Léon.—p. 751.  
\*Bronchopulmonary Spirochetosis. C. Garin and L. Morenas.—p. 759.  
\*Tick Paralysis. C. Garin and Bujadoux.—p. 765.



*Spirochaeta Dentium* in Gingivitis. Massia and Grigorakis.—p. 769.  
\*Anaphylaxis in Intestinal Helminthiasis. L. Morenas.—p. 773.

**Survival and Cinematography of Ascaris Outside of the Human Intestine.**—Guiart was able to keep ascarids, from the human intestine, living for several days. The animal keeps well in normal salt solution, which has to be changed twice daily. It is fed by an addition of human blood to the solution. After feeding, a change of the medium is necessary.

**Human Parasitology in Roumania.**—Léon reviews the human parasites in Roumania, and publishes a case of myiasis of the male urogenital tract.

**Clinical Forms of Bronchopulmonary Spirochetosis.**—Garin and Morenas draw attention to this affection because it has occurred in several epidemics since the war in Europe. Castellani's spirochetes are present in the sputum; other spirochetes and fusiform bacilli seem to be without importance. The typical form of the disease may be acute, with moderate fever for two to six days. The sputum is mucous and mucopurulent. If the bronchitis continues, the expectoration becomes bloody. In other cases the affection starts mildly and the first symptom is this red jelly-like sputum. Atypical cases may resemble ordinary bronchitis, pneumonia and bronchopneumonia. The diagnosis between tuberculosis and spirochetosis can be made only by examination of the sputum. Both diseases may be present at the same time. Iodids are useful in the treatment of this affection.

**Tick Paralysis.**—Garin and Bujadoux publish the first case observed in France.

**Anaphylaxis in Intestinal Helminthiasis.**—Morenas considers eosinophilia and Charcot-Leyden crystals in the feces of patients as the strongest indication of anaphylactic reactions.

### Journal de Radiologie, Paris

November, 1922, 6, No. 11

\*Goetsch Test and Radiotherapy in Thyroid Disease. Tarnauceanu.—p. 501.

Two Intensifying Screens in Radiography. M. de Laroquette.—p. 511.

**The Goetsch Test and Radiography of the Thyroid.**—Tarnauceanu extols the value of the Goetsch test in hyperthyroidism. He used 1 c.c. instead of 0.5 c.c. of the 1:1,000 epinephrin solution. In conclusion he states that, on account of the remarkable results, this test should be adopted as a routine practice in radiology to sift out the cases suitable for radiotherapy.

### Journal d'Urologie, Paris

November, 1922, 14, No. 5

\*Nephrolithotomy and Pyelolithotomy. A. Pousson.—p. 353.

"Lithotribo-lapaxy." M. Pavone.—p. 371.

\*Endo-Urethral and Endovaginal Diathermy. E. Roucayrol.—p. 385.

Application of Radium with the Cystoscope. L. Buerger.—p. 409.

\*Treatment of Gonorrhea. J. Janet.—p. 419.

**Nephrolithotomy and Pyelolithotomy.**—Pousson finds that nephrolithotomy does not disturb the renal function more than pyelolithotomy. Therefore, in the choice between these two operations, it is not necessary to consider the future of the patient which is the same in both. The indications are the site, form and size of the stone. Roentgenography is necessary, but in some cases only direct examination of the kidney can decide.

**Endo-Urethral and Endovaginal Diathermy.**—Roucayrol considers diathermy the method of choice in acute and chronic gonorrhea. It may even cure sterility from endometritis. Very few persons are intolerant.

**Treatment of Gonorrhea.**—Janet points out the necessity to examine filaments microscopically. Their persistence may in rare cases be due to a simple urethritis caused by continued treatment of a cured gonorrhea. On the other hand, men who have a perfectly clear urine, but who have gonococci in the first small drop in the morning, require treatment.

### Paris Médical

Dec. 9, 1922, 12, No. 49

\*Senile Changes in the Eye. F. Terrien.—p. 517.

\*The Wassermann Reaction with Fresh Serum. Durupt.—p. 519.

\*Anaphylaxis. W. Kopaczewski.—p. 524.

**Senile Changes in the Eye.**—Terrien reviews the senile changes of eyes. Subconjunctival hemorrhages are frequent. They have no prognostic significance for hemorrhages of the brain. Miliary aneurysms in the retinal arteries are such a premonitory sign. They look like small pearls and may be mistaken for a bend in the vessel. The formation of a cataract is sometimes preceded by improvement of hypermetropia, from sclerotic changes in the lens. The turbidity under oblique illumination must not be mistaken for a beginning cataract; the lens is perfectly clear when examined with an ophthalmoscope.

**The Wassermann Reaction with Fresh Serum.**—Durupt had 15 per cent. more correct positive Wassermann reactions when using fresh serum and its complement and natural hemolysin against sheep corpuscles. The positive reaction with fresh serum is earlier, remains longer during treatment, and is often the only positive reaction in hereditary syphilis. The hemolytic index of the serum (its content of complement and natural hemolysin) must be tested.

**Anaphylaxis.**—Kopaczewski discusses the terminology and theories of proteinogenous shock.

### Presse Médicale, Paris

Dec. 16, 1922, 30, No. 100

\*Diuretic Action of Mercurials. L. Blum and H. Schwab.—p. 1081.

\*Roentgen-Ray Epithelioma Cured by Diathermy. H. Bordier.—p. 1083.

\*Modern Classification of Nephritis. Wolf.—p. 1084.

**Diuretic Action of Mercurials.**—Blum and Schwab investigated the diuretic properties of compounds of mercury by injecting from 4 to 5 cg. of cyanid of mercury intravenously. An injection of 1 cg. was used to test the sensibility to the drug. The diuretic effect was marvellous in one cardiac case in which the edema had resisted other medication. In another case the injection was fatal. Investigation of the ureosecretory coefficient showed in every case, treated with mercury, actual injury of the kidneys. As in azotemic nephritis, it affected the elimination of urea, but not of sodium chlorid. Even in healthy subjects on a salt-free diet, the injection was followed by increased elimination of chlorids. It is possible that the drug has also some action on the tissues, although its principal effect seems to be on the kidneys. Therefore, this treatment is absolutely contraindicated in nephritic edema, and should be used very cautiously in other diseases, and only after every other form of treatment has failed.

**Roentgen-Ray Epithelioma Cured by Diathermy.**—Bordier publishes another very successful case and describes his electrodes.

**Modern Classification of Nephritis.**—Wolf concludes his report on the new German classification (Volhard and Fahr).

### Progrès Médical, Paris

Dec. 9, 1922, 37, No. 49

\*The Training of Midwives. C. Jeannin.—p. 573.

\*Tuberculosis and Dental Caries. Siffre.—p. 580.

**The Training of Midwives.**—Jeannin's inaugural lecture deals with the training of midwives.

**Tuberculosis and Dental Caries.**—Siffre found that teeth contain usually a little more than 66 per cent. of mineral substances. Caries does not occur more frequently in teeth with a lower content. Caries has no relation to a demineralization of the teeth nor to tuberculosis. The influence of tuberculosis can be only the same as that of other nutritional disturbances. Pregnancy, infancy, and puberty are the only periods of importance for the formation of teeth.

Dec. 23, 1922, 37, No. 52

\*Malta Fever and Fixation Abscess. H. Roziès.—p. 671.

\*Vicarious Menstruation. Dalché.—p. 672.

\*Isolation of Vitamin A. Tetsuwo Kagawa.—p. 674.

Treatment of Infantile Syphilis with Arsphenamin. Paul-Boncourt and J. Clement.—p. 675.

**Malta Fever and Fixation Abscess.**—Roziès describes a case of Malta fever which started ten days after the patient had taken, for the first time in her life, raw goat's milk. The usual treatment failed, but recovery followed a fixation



abscess. He insists on using really old turpentine, in higher doses than are usual (2 to 3 c.c.). The earlier the injection is made, the better the results.

**Vicarious Menstruation.**—Dalché attributes bleeding from different organs at the time of menstruation to complex endocrine and neurotic disturbances.

**Isolation of Vitamin A.**—Kagawa reports the isolation of vitamin A by Katsuya Takahashi. Ten grams of this substance were extracted from 1 kg. of cod liver oil; 0.0001 gm. was sufficient to cure an animal dying from deficient diet. The fluid substance keeps well in alcoholic or fatty solution. It contains 81 per cent. carbon and 10 per cent. hydrogen, and resembles cholesterol.

### Pediatrics, Naples

Dec. 15, 1922, 30, No. 24

\*Mixed Typhoid and Malta Fever. L. Auricchio.—p. 1155.

\*Vitamins in Milk and Rachitis. R. Pollitzer.—p. 1164.

\*Leishmaniasis in Messina. G. Castorina.—p. 1173.

**Mixed Infection with Typhoid and Malta Fever.**—Auricchio publishes four cases of combined Malta fever and typhoid, and one case with paratyphoid. The typhoid infection dominates the picture.

**Experiments on the Relation of Vitamin Content of Milk to Rachitis.**—Pollitzer reviews the pathogenesis of rachitis, and emphasizes the secondary (or indirect) decalcifying factors. These factors inhibit the action of vitamin A. Since it is soluble in fat, disturbances of digestion may prevent its absorption. Absence of muscular activity is another such factor. The importance of light is well known. He fed rats on foods without vitamin A, and then gave in addition milk from women whose children were healthy and others who were nursing rachitic children. The addition of 5 c.c. of such milk every second day caused a moderate increase in weight without any difference between the two groups. He does not consider these results as final. The congenital reserve in vitamins seems to be an important factor in the development of rachitis.

**Leishmaniasis in Messina.**—Castorina gives a survey of forty-four cases of leishmaniasis in children living in Messina and surroundings. Antimony tartrate was injected intravenously. Clinical improvement began usually after the fifteenth injection.

### Policlinico, Rome

Dec. 11, 1922, 29, No. 50

\*Radical Cure of Varicocele with Orchidopexy. P. Amorosi.—p. 1621.

\*Nitritoid Crises After Arsphenamin. B. Lo Vullo.—p. 1626.

Case of Malignant Neoplasm of Left Lung. G. Miracapillo.—p. 1631.

**Radical Cure of Varicocele with Fixation of Testicle.**—Amorosi describes in detail the operation devised by Paravecchia. His experiments show that it is harmless as regards the nutrition and function of the testes. This cannot be said for other methods.

**So-Called Nitritoid Crises from Defective Preparations of Arsphenamin.**—Lo Vullo proves that these crises are simply due to bad preparations.

### Riforma Medica, Naples

Dec. 11, 1922, 38, No. 50

\*Pseudotuberculosis Due to Nocardia. I. Iacono.—p. 1181.

Bilateral Mammary Carcinoma. C. F. Bianchetti.—p. 1183.

\*Isotonic Infusions of Salt and Glucose. E. Zagari.—p. 1186.

Purulent Pericarditis. P. Orsini.—p. 1188.

Diagnosis of Gastric and Duodenal Ulcers. L. Torraca.—p. 1190.

**Pseudotuberculosis Due to Nocardia.**—Iacono describes a case of pseudotuberculosis of lungs due to the nocardia. Its mycelium in the sputum is acid-fast and may be mistaken for the tubercle bacillus. The site of predilection is the base of the lungs. Inconstant fever, mucopurulent sputum (sometimes containing blood), and chronic bronchopneumonia leading eventually to the formation of cavities, are the usual signs.

**Isotonic Infusion of Salt and Glucose.**—Zagari compared the effects of hypodermoclysis with a 4.7 per cent. solution of glucose and a 0.75 per cent. solution of sodium chlorid. He finds that glucose infusions have a better influence on the heart, kidneys, nerves and muscles, while salt solutions

depress the output of work, the muscle tonus and reflex excitability.

### Anales de la Facultad de Medicina de Montevideo

September-October 1922, 7, No. 7-8

\*The Nerves in Fracture of the Wrist. A. Navarro.—p. 395.

\*Postoperative Cardiac Insufficiency. E. Blanco Acevedo.—p. 399.

Surgical Treatment of Constipation. A. Lamas.—p. 402.

Shock in Gynecology and Obstetrics. A. Turenne.—p. 409.

Prophylaxis of General Paresis. F. S. Garmendia.—p. 433.

Unusual Locations of Hydatid Cyst. A. Roldán.—p. 442.

The Recurring Subcutaneous Mucous Chancre. J. Travieso.—p. 449.

\*Experimental Chronic Irritation. C. Stajano.—p. 467.

\*Refusal to Submit to Operation. D. Prat.—p. 470.

The Planes in Anatomy of the Mediastinum. J. Humberto May.—p. 480.

Chemical Study of Tartrobismuthate of Sodium and Potassium. A. Bocage et al.—p. 483.

Syphilitic General Pustular Eruption. A. Bellagamba.—p. 501.

**Compression of Median Nerve in Fracture of Wrist.**—In one of Navarro's two cases the nervous disturbances developed slowly but were pronounced by the third month. The fracture had been treated without immobilization, and secondary deformity, with compression of the median nerve, resulted.

**Acute Postoperative Cardiac Insufficiency.**—Blanco Acevedo warns against assuming the presence of hemorrhage when dyspnea, precordial pain and other symptoms after an operation indicate acute insufficiency of the heart. In two cases described, digitalis by the vein promptly restored normal conditions.

**Experimental Chronic Irritation.**—Stajano says that his experiments on animals have confirmed the importance of revulsion in the treatment of trophic lesions. They also sustain the theory of trophic centers.

**Refusal to Submit to Needed Operation.**—Prat discusses the equity of awarding a pension to a man, aged 61, incapacitated by hemorrhoids who refused operative relief.

### Archivos Españoles de Pediatría, Madrid

November, 1922, 6, No. 11

\*The Prescurvy Stage. Jose Estella y B. de Castro.—p. 641.

\*Erysipelas in Two Sisters. C. S. de los Terreros.—p. 655.

Pathology of the Esophagus. A. Hinojar.—p. 660.

**The Prescurvy Stage.**—In fully 50 per cent., scurvy does not develop beyond the preliminary phase. Even then there is evidence of dystrophy, weakness and angiomalacia. Edema should always suggest a possible "prescurvy" condition. The changes in the bones are too characteristic to be mistaken for any other affection except possibly Parrot's osteochondritis.

**Erysipelas in Two Sisters.**—The children went to confession together, and each developed the next day a patch of erysipelas on the cheek that had rested on the woodwork of the confessional.

### Prensa Médica Argentina, Buenos Aires

Nov. 20, 1922, 9, No. 17

\*Effects of Irritation of Splanchnic Nerves. B. A. Houssay.—p. 490.

Vaccination Against Diphtheria. Bachmann and de la Barrera.—p. 499.

\*Typhoid Bacilli Carriers. M. J. Barilari and R. O. Rodríguez.—p. 500.

**Factors in Rise in Blood Pressure After Irritation of Splanchnic Nerves.**—Houssay reports experiments on cats and dogs which demonstrated that irritation of the splanchnic nerves increases the secretion of epinephrin. The inevitable rise in blood pressure is due in part to the increase in epinephrin, but mainly to neuromuscular vasoconstriction by the direct action of the irritated splanchnic nerves.

**Treatment of Typhoid Bacilli Carrier.**—There was a history of typhoid at the age of 5 and again at 25, 29, 30, 33 and 34. The last attack began with acute gallbladder symptoms, and the retrospective diagnosis was chronic typhoid infection of the gallbladder with periodic exacerbations. No typhoid bacilli have been found in the stools since the gallbladder was removed. The family history contains several cases of cholelithiasis, which indicate an inherited substandard condition of the biliary apparatus.

Dec. 10, 1922, 9, No. 19

\*The Spinal Fluid in Neurosyphilis. C. Bonorino Udaondo and O. Catalano.—p. 553.



- \*Syphilis of the Mamma. M. R. Castex and L. G. Bouzat.—p. 558.  
 \*Biopsy. S. Mazza and M. Balado.—p. 564.  
 \*Hemoclastic Crisis in Insufficiency of Liver. A. B. Ribeyrolles.—p. 570.  
 Research on Chronaxia. V. Tedeschi.—p. 578.  
 Lumbar Puncture in Neurosyphilis. J. B. Arizabalo.—p. 583.

**The Spinal Fluid in Neurosyphilis.**—The findings are tabulated with seven parallel tests of the cerebrospinal fluid in 130 cases of neurosyphilis and other affections of the central nervous system. They confirm the reliability of the Nonne phase I and the Pandy test. The Emanuel reaction is constantly positive in neurosyphilis.

**Syphilis of the Mamma.**—Castex and Bouzat remark that a gumma in the mamma usually develops more rapidly than an adenoma. In one case, however, an adenoma grew in five days to the size of an egg. Ulceration occurs earlier with a gumma than in malignant disease, but the axillary glands are not involved so early. In a case described, there was no secretion from the fistula opening from the small tumor in the left breast, but there was bilateral hemorrhagic effusion in the pleura. Syphilis was known in the antecedents of the woman, aged 43, and under specific treatment the tumor subsided to a very small lump. In a second case the tumor had grown rapidly in seven days, but began to retrogress at the first mercurial treatment, and was soon reduced to a fifth of its former size. In both cases the tumors were adherent to the skin but not to the lower tissues. The axillary glands were enlarged in the second but not in the first case.

**Diagnostic Biopsy.**—Mazza and Balado review the technic for obtaining scraps of tissue for microscopy, and the interpretation of the findings.

**The Hemoclastic Crisis in Diagnosis of Insufficiency of the Liver.**—Ribeyrolles' experience has confirmed Widal's statements as to the reliability of the leukopenia which follows drinking 200 gm. of milk while fasting, as indication that the liver function is below par.

Dec. 20, 1922, 9, No. 20

- \*Physiopathology of Pneumoperitoneum. P. Alessandrini.—p. 589.  
 Efficacy of Arsenical Treatment by the Mouth in Intestinal Flagellosis. S. Mazza and E. V. Merlo.—p. 591.  
 \*Infantilism of Renal Origin. M. Acuña and J. P. Garrahan.—p. 594.  
 Recurring Inguinal Hernia. M. Balado.—p. 604.  
 Pupil Membrane Simulating Aplasia of Iris. E. Adrogué.—p. 610.  
 Practical Psychometer. A. Mo and J. L. Alberti.—p. 612.  
 Operative Correction of Ankylosis of Knee. A. Ceballos.—p. 616.

**Pneumoperitoneum.**—Alessandrini has been studying the physiopathology of artificial pneumoperitoneum in 200 cases. It is a harmless procedure which throws light on the physiology of the abdomen.

**Infantilism of Renal Origin.**—Pure uremic nephritis was accompanied by stunting of growth. On suspicion of inherited syphilis, mercurial treatment was given but it aggravated conditions. The boy died at the age of 16. In a second case the boy seemed about 6 years old although really 9. Some improvement was realized under heliotherapy and dieting, but the urea in the blood kept high.

**Revista de la Asoc. Médica Argentina, Buenos Aires**  
 October, 1922, 35, No. 216

- \*Periarthritis of Tuberculous Origin. G. Peco.—p. 587.  
 \*Typhoid and Syphilis. M. Angel Marini.—p. 596.  
 \*Intussusception in Infants. M. Ruiz Moreno.—p. 603.  
 \*Thrombosis from Physical Effort. O. Ivanisovich.—p. 627.  
 Foreign Bodies in Digestive Tract. Carlos I. Allende.—p. 633.  
 Ophthalmoscopy Under Light Free from Red Rays. R. Gil.—p. 637.  
 \*Research on Snake Venoms. B. A. Houssay and J. Negrete.—p. 649.  
 Idem. Houssay and S. Pavé.—p. 680. Idem. Houssay et al.—p. 699.  
 \*Toad Poison. V. Novaro.—p. 715.  
 \*Nature of Bacteriophagy. C. E. Pico.—p. 734.

**Tuberculin Treatment of Periarthritis.**—The young woman's fingers were all swollen at the second joint and tender. Then the knees and ankles developed similar periarthritis. Signs of inherited syphilis suggested specific treatment, but no benefit followed a systematic course of neo-arsphenamin. By exclusion, tuberculosis was diagnosed, and under tuberculin treatment for four months the hands returned to normal aspect and approximately normal function.

**Typhoid with Syphilis.**—Marini's case teaches that old latent syphilis may flare up during typhoid fever, and may prolong and render atypical the typhoid. The syphilis was

probably inherited in his case. On the forty-fifth day of the typhoid a papulous eruption developed. Under mercurial treatment recovery was prompt; the typhoid bacilli soon disappeared from the blood.

**Intussusception in Infants.**—Fourteen of Ruiz' sixteen cases were in breast fed infants. There was no blood in the stool in four. The five infants who did not receive operative treatment until after an interval of two or three days, all died.

**Thrombosis from Physical Effort.**—Ivanisovich adds two to the twenty-one cases on record in which edema of the entire arm, from thrombosis in the axillary vessels, developed after straining the arm in moving furniture, or other unusual and extreme effort.

**Hemolytic Action of Venoms.**—Houssay and Negrete's extensive research with twenty different kinds of South American snakes confirms the specificity of the antihemolytic action of the antivenoms.

**Toad Poison.**—Novaro relates an Argentina tradition that herpes zoster can be cured by binding a toad on the affected area. In two cases in which this was done, there was rapid ulceration and one patient, a robust young man, died in thirty-three hours. In the other case, ulceration persisted for nearly two months. Secretion from the parotid glands of toads (*Bufo marinus*) proved very toxic for pigeons, rabbits and other laboratory animals.

**Bacteriophagy.**—Pico presents further evidence to sustain his contention that bacteriophagy is merely an activation of the normal autolysis of bacteria.

## Archiv für Gynäkologie, Berlin

Nov. 21, 1922, 116, No. 2

- \*Lipoids in Ovaries. F. v. Mikulicz-Radecki.—p. 203.  
 Pathogenesis of Menorrhagia and Metrorrhagia. A. Seitz.—p. 252.  
 \*Blood Changes Under Roentgen-Ray Treatment. K. Heim.—p. 291.  
 \*Protein Therapy and Coagulation. R. Salomon and E. Vey.—p. 317.  
 Adenomyomas and Adenomyometritis. S. Westmann.—p. 333.  
 \*Operability of Metastatic Ovarian Tumors. E. E. Pribram.—p. 343.  
 \*Tetany in the Pregnant. W. Niderehe.—p. 360.  
 \*Sedimentation of the Blood. A. Mahner and K. Horneck.—p. 383.  
 \*Laryngeal Tuberculosis and Pregnancy. P. Schumacher.—p. 391.  
 \*Treatment of Eclampsia. Stroganoff.—p. 406.  
 \*Vaginal Operation for Genital Prolapse. B. Dittrich.—p. 412.  
 Pathology of Tubal Pregnancy. E. Kratzeisen.—p. 421.

**Lipoids in Human Ovaries.**—The findings are analyzed and interpreted from 120 cases. The subjects ranged in age from a three months' fetus to the menopause. They confirm the corpus luteum as a gland with an internal secretion.

**Changes in Blood from Roentgen Exposures.**—Heim recorded the differential blood count the day before and the day after deep roentgen-ray treatment, and again at weekly intervals. The effect of the irradiation on the different elements of the blood was pronounced, and proportional to the intensity of the application of the rays. His research emphasizes the necessity for waiting for the blood to recover its balance before repeating the exposure. He consequently advises a wait of six weeks after a radical operation before beginning prophylactic irradiation. Exposures with large doses modify the leukocytes so materially that eight weeks at least must elapse before the series is resumed.

**Influence of Parenteral Protein Therapy on Coagulation of the Blood.**—In the research reported, various proteins and chemicals checked coagulation but had the opposite effect when diluted to one tenth. By intravenous or intramuscular injection, a pronounced change in the coagulation of the blood was evident. This may have a practical application as a preliminary to operations, by enhancing the preparedness of the blood for coagulation.

**Operability of Ovarian Tumors.**—Pribram reiterates the importance of seeking for a primary tumor elsewhere in all cases of cancer in the ovary. In two of the three cases described, the primary malignant disease was in the gall-bladder. His favorable experience suggests that metastasis in the ovaries does not necessarily preclude the successful removal of the primary focus in the alimentary tract or gall-bladder. The metastasis in the ovaries was probably from implantation in two of his cases. If lymphatics are involved, this modifies the outlook.



**Tetany in the Pregnant.**—Niderche states that in the 70 cases of tetania gravidarum which he has found on record, the infants had fatal convulsions in the first weeks in 12 cases; abortion occurred in 3; the fetus was macerated in 4, and there was spontaneous or induced premature delivery in 4 and in 2, respectively. In a case personally observed, the tetany developed for the first time during the fifth pregnancy and returned at the sixth and seventh pregnancies, growing progressively more intense. The infant at the last delivery presented a combination of congenital tetany and a disturbance in bone growth which might be called congenital rachitis. The parathyroid glands and the thymus seemed to be constitutionally inferior.

**Sedimentation of the Blood Corpuscles.**—Mahnert and Horneck discuss the speed of sedimentation of the red corpuscles in puerperal septic processes under various treatments.

**Pregnancy and Tuberculosis.**—Schumacher relates that the laryngeal tuberculosis became decidedly aggravated about the fourth month of the pregnancy in his ten patients. All died soon after delivery or interruption of the pregnancy except one who survived for two years in fair condition after abdominal supravaginal amputation of the pregnant uterus at the sixth month. This operation not only relieves at the time but wards off further pregnancies. One or both ovaries are left, and the operation is done under intraspinal anesthesia. Of the seventeen pregnant women with pulmonary tuberculosis in the first or second stages treated by amputation of the uterus, 83.3 per cent. are still living in good condition from one to nine years later. He pleads for this operation in every case of laryngeal tuberculosis in the early months of a pregnancy. If approaching term, no operation offers any hope of success. With latent tuberculosis, he urges that the women should be reexamined every two weeks all through the pregnancy, so that the pregnancy can be terminated at the first signs of the flaring up of the process.

**Treatment of Eclampsia.**—Stroganoff here brings down to date his experience with the "prophylactic" method of treating eclampsia, which he has been applying for twenty-four years—2,208 cases in all. The mortality of the mothers under it was 9.8 per cent. and the mortality of the children was 12.9 per cent.—less than with other methods. He advises supplementary venesection in the severer cases, and states that in the last seven years he has given larger amounts of the sedative during the first two or three hours. There have been no deaths during these seven years except of patients moribund when first seen.

**Vaginal Operation for Genital Prolapse.**—Dittrich relates that three died of the 340 women on whom he has operated in this way. The deaths were all due to embolism.

### Monatsschrift für Kinderheilkunde, Leipzig

November, 1922, 24, No. 2

\*Regeneration of Blood in Infancy. H. Opitz.—p. 113.

**Regeneration of Blood in Infancy.**—Opitz tried comparatively large infusions of blood in different anemic conditions in infants. The amounts to be infused were computed to bring the number of corpuscles in the child to normal. They were repeated after from four to ten days, as often as necessary. The results were very good except in two children with lymphosarcoma and myeloid chloroma. He believes that the injected corpuscles are not destroyed, because the signs of regeneration (erythroblasts, basophilic stippling, etc.) disappear from the blood. It is probable that the injected blood takes up part of the work, and gives the bone marrow time to rest and recover. Mixed diet and a moderate reduction of milk may hasten the recovery of the patients.

### Münchener medizinische Wochenschrift, Munich

Dec. 15, 1922, 69, No. 50

- \*Blood Pressure During Sleep. G. Katsch and H. Pansdorf.—p. 1715.
- \*Constitution in Obstetrics and Gynecology. A. Mayer.—p. 1718.
- Movement of Leukocytes and pH. S. Gräff.—p. 1721.
- \*Circulation of Cerebrospinal Fluid. H. Strecker.—p. 1726.
- \*Sedimentation of Corpuscles. A. Horvat.—p. 1729.
- Technic of Cultivation of Anaerobes. Kämmerer and Speth.—p. 1730.
- \*Heart and Breathing During Hypnosis. P. Astruck.—p. 1730.
- PreHomeric Necropsies? E. Fuld.—p. 1731.

- Examination of Infant Nurses in Bavaria. J. Meier.—p. 1731.
- Vaccination Against Typhoid.—p. 1732.
- Accidents in Appendectomy. A. Krecke.—p. 1733.

**Blood Pressure During Sleep.**—Katsch and Pansdorf were able to study the blood pressure of patients during sleep. The main point was to lead the rubber tubes into another room, to increase the pressure of the band slowly and read the pressure quickly. The systolic pressure is normally lower, but the diastolic does not change, except for a slight increase during very deep sleep. Thus the amplitude of the pulse is decreased from both ends. Some patients with hypertension presented marked decrease in blood pressure, and "sleeping cures" might be advisable for them. Other hypertonics (two cases of uremia) had no decrease in the pressure.

**Constitution in Obstetrics and Gynecology.**—Mayer reviews constitutional signs in gynecology. The movable recto-flexion is a very frequent occasion for useless and superfluous operations. The endocrine disturbances are very important, and psychoneuroses are a much more frequent cause of supposed gynecologic disturbances than is realized.

**Circulation of Cerebrospinal Fluid.**—Strecker's experiments show that drugs introduced into the lumbar sac in man reach the brain after a certain time, and suggest that there is a circulation of the cerebrospinal fluid.

**Sedimentation of Corpuscles.**—Horvat's experiments show the importance of the use of equal tubes and equal amounts of blood for comparison.

**Psychic Influence on Heart and Breathing During Hypnosis.**—Astruck was able in the hypnosis to influence the action of heart and breathing very strongly. Several times he observed a bigeminal pulse during his experiments.

### Wiener klinische Wochenschrift, Vienna

Dec. 14, 1922, 35, No. 50

- \*Thyroid Problems. B. Breitner.—p. 969.
- Sedimentation of Corpuscles. H. Poindecker and K. Siess.—p. 971.
- Conc'n No. 51.
- \*Lymphatic Reaction. H. Baar.—p. 973.
- \*Epidural Injections in Sciatica. F. Högler.—p. 974.
- \*Preparation of Colloidal Gold Solution. E. Friedländer.—p. 975.
- Intensive Roentgen-Ray Treatment. G. Holzknecht.—p. 975.
- French Views on Icterus. F. Stohr.—p. 976. Conc'n.

**Thyroid Problems.**—Breitner gives four types of diffuse affection of the thyroid: hypotrophic-hyporrhic, in which production and evacuation of secretion are diminished; eutrophic-hyporrhic, with normal production and insufficient elimination; eutrophic-hyperhric with normal secretion and increased elimination, and hypertrophic-hyperhric, where both are increased.

**Lymphatic Reaction.**—Baar describes a case of tonsillitis in a 5 year old boy with leukocytosis of 18,000 and only 15 per cent. of neutrophils. On recovery, there were 42½ per cent. neutrophils. A subsequent injection of milk produced a neutrophil leukocytosis (75.5 per cent.). Baar assumes not only an abnormal predisposition, but also some chemotactic action of the germs as responsible for the strong lymphocytosis.

**Epidural Injection of Antipyrin in Sciatica.**—Högler reports very good results from epidural injections of 10-20 c.c. of an aqueous solution of from 1 to 4 gm. antipyrin. The injection should not be repeated before two days. When the pains are limited to the extremity, a perineural injection is sufficient.

**Preparation of Colloidal Gold Solution.**—Friedländer found that the reduction of gold chlorid is inhibited, if the potassium carbonate contains bicarbonate. Cautious heating restores the needed purity.

### Acta Chirurgica Scandinavica, Stockholm

Dec. 22, 1922, 55, No. 4

- \*Perforation of Gastric and Duodenal Ulcers. E. R. Schmidt.—p. 313.
- \*Experimental Cancer Research. J. Fibiger.—p. 343.
- \*Xanthosarcomas in Tendon Sheaths. A. Krogius.—p. 363.
- Hematoma in Rectus Muscle in Typhoid. F. Rost.—p. 385.
- \*The Steinach Operation. K. Sand.—p. 387.
- \*Arterial Embolectomy. E. Michaëlsson.—p. 427.

**Perforation of Gastric and Duodenal Ulcers.**—In 5 of the 44 cases described, there had been no history of preceding stomach or duodenal disturbance. All 44 patients were



treated by excision and suture of the perforation. The ulcer was excised longitudinally and the gap sutured transversally. A Witzel fistula allowed feeding from the start, and served as a safety valve. Smooth recovery followed thorough irrigation of the abdomen with normal salt solution at 40 C. Of the 22 reexamined later, only 2 have had a return of the ulcer, but patients should always be warned of the possibility of recurrence of both ulcer and perforation, the necessity of an ulcer diet, and the wisdom of remaining under medical control for some time.

**Experimental Cancer.**—Fibiger prepared this French article as an address for the postponed congress on comparative pathology. His data indicate that predisposition to cancer is restricted to certain races and species, and probably also to certain organs. Experimental cancers have opened a vast new field for research in the problem of immunization. He remarks in conclusion that animals immunized against ingrafted cancer are as liable to develop tar cancer as the nonimmunized.

**Xanthosarcomas of Tendon Sheaths.**—In Krogus' four cases the growth was on the leg or hand, and was safely removed. The patients were adults. In a girl, aged 11, there were several tuberous xanthomas and the incommencing ones were removed though some recurred.

**The Steinach Operation.**—Sand's article was reviewed when it appeared in a Danish journal. It is in English here, and summarizes eighteen cases of epididymectomy by Steinach's method.

**Arterial Embolectomy.**—One of Michaëlsson's three patients survived the embolectomy. He recommends lifting up the vessel with a rubber tube instead of with a metal instrument.

### Acta Pædiatrica, Upsala

Dec. 16, 1922, 2, No. 2

\*Comparison Between Medicinal-Dietetic Treatment and Light Treatment in Rachitis. I. Jundell.—p. 113.

\*Butter-Flour Pap. H. Ernberg.—p. 149.

\*Chorea. R. Nordgren.—p. 159.

\*Genuine Contracted Kidney in Children. A. Wallgren.—p. 169.

\*Treatment of Diabetes in Children. N. Johannsen.—p. 180.

**Comparison Between Medicinal-Dietetic Treatment and Light Treatment in Rachitis.**—Jundell reports twenty-one cases of rachitis treated partly by phosphorized cod liver oil and phosphate of calcium, partly by quartz lamp and partly by both methods. He measured the results chiefly by the softening of the bones of the skull. The first treatment, together with a reduced diet, is advisable in overfed children, or when systematic treatment by light is not available. The light treatment is indicated in undernourished and sick (tuberculous) children.

**Butter Flour Pap.**—Ernberg had good results in 375 cases and confirms the indications and contraindications of the browned butter-flour mixture in infant feeding.

**Chorea.**—Nordgren observed increased frequency of chorea in certain periods which occur at the same time or follow closely an increased frequency of rheumatism.

**Genuine Contracted Kidney in Children.**—Wallgren reports a rare case of genuine contracted kidney in an 8½ year old girl. No edema was ever present. The child died with symptoms of uremia (azotemic). Small parts of the kidneys were hypertrophic, otherwise the picture resembled the contracted kidneys of adults.

**Treatment of Diabetes Mellitus in Children.**—Johannsen reports favorably on Joslin's method in the treatment of seven diabetic children.

### Hygiea, Stockholm

Dec. 16, 1922, 84, No. 23

\*The Cerebellum. S. Ingvar.—p. 977.

**The Cerebellum.**—Ingvar presents this study of the cerebellum from the standpoints of anatomy, physiology and the clinic. He regards the cerebellum as a central ganglion for a specific sense, which informs us of the relations between our body and the laws of gravity and inertia. As these laws affect all alike, we can understand why the cerebellum, in all vertebrates, presents the same histologic picture.

### Svenska Läkaresällskapets Handlingar, Stockholm

Dec. 30, 1922, 48, No. 4

\*Surgical Treatment of Gastric and Duodenal Ulcer. E. Hedlund.—p. 209. Conc'n.

\*Syphilis as Factor in Thyroid and Pituitary Disease. F. Lennmalm.—p. 257.

Opacity of Cornea on Compression of Eye. J. W. Nordenson.—p. 279.

**Surgical Treatment of Gastric and Duodenal Ulcer.**—Hedlund gives full summaries of 455 cases in which he has operated, with the history to date. Complete recovery was prompt and more certain after extensive resection of the pylorus than after any other operation. He is personally acquainted with most of the patients. There has been no evidence that removal of such a large part of the stomach has had any deleterious consequences. Local anesthesia alone was used in some of the cases, but even this does not guarantee against postoperative pneumonia.

**Syphilis as Factor in Thyroid and Pituitary Disease.**—Lennmalm reports five cases of myxedema in syphilitic adults. The myxedema and recurrences subsided under thyroid treatment. He cites a number of similar cases from the records. In another group of patients, syphilitic thyroiditis developed in an old goiter. The symptoms were those of exophthalmic goiter; they materially improved in a personal case under mercurial and roentgen-ray treatment. Acromegaly in syphilitics may retrogress under specific treatment. His personal cases of dystrophia adiposogenitalis and a large number from the literature indicate that syphilis is a comparatively frequent factor in this condition. Improvement under specific treatment is common, as also in diabetes insipidus.

### Ugeskrift for Læger, Copenhagen

Jan. 4, 1923, 85, No. 1

\*Chronic Dyspepsia in Young Infants. C. E. Bloch.—p. 1.

\*Professional Roentgen Anemia. K. Faber.—p. 8.

\*New Law on Marriage and Divorce.—p. 14.

**Chronic Dyspepsia in Young Infants.**—Bloch's experience has convinced him that a condition of chronic dyspepsia and atrophy in young infants is due to simple insufficiency of the digestive glands. This substandard state of the glands may be congenital, or be the result of overtaxing the digestive organs.

**Fatal Acute Aplastic Pernicious Anemia in Roentgenologist.**—Faber relates the particulars of the fatal illness of Dr. Nordentoft, who for twelve years had been intensively engaged in roentgenotherapy. Faber compares three similar cases since 1913, and three English cases of similar injury from the use of radium. He adds that means for better protection of physicians and attendants are an urgent necessity.

**Medical Features of New Danish Law on Marriage.**—Some of the medical aspects of this law were mentioned in the News department recently, page 335.

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\*Insulin in Treatment of Diabetes. A. Krogh.—p. 21.

Autoserotherapy of Tuberculous Pleural Effusion. V. Petersen.—p. 25.

**Insulin in Treatment of Diabetes.**—Krogh relates the history of this new treatment of diabetes, of which he made a special study while in this country. Probably it will be long before insulin can be imported into Denmark. He discussed with the Toronto professors the possibility of Danish collaboration in further research, especially in the use of fish instead of beef pancreas. In collaboration with Drs. Hagedorn and Johansen the work is now well under way at Copenhagen, with both fish and beef pancreas. Krogh arrived in Denmark, December 12, and by December 21 the first batch of insulin was completed and its potency confirmed on rabbits. The methods of standardization have already been improved. In order to hasten matters, he decided to place the manufacture in the hands of a private firm, instead of a state institution. The state later can take it over, if found desirable. The price is to be kept down as low as possible, as in America. [Krogh received the 1920 Nobel prize in medicine for his research on gaseous interchanges, capillary circulation, etc.]



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## CYSTS OF THE EXTERNAL SEMILUNAR CARTILAGE OF THE KNEE

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CHICAGO

Ebner,<sup>1</sup> in 1904, was the first to describe cyst formation in the external semilunar cartilage. Since then there have been twelve other cases reported: one by Schmidt,<sup>2</sup> six by Riedel,<sup>3</sup> one by Eden,<sup>4</sup> and four by Ollerenshaw.<sup>5</sup> The two cases reported here are apparently the first to be reported from this country.

### REPORT OF CASES

**CASE 1.—History.**—C. B., a man, aged 22, who entered the Presbyterian Hospital, Aug. 24, 1920, had had stiffness and pains in the right knee during the preceding three years. They were slight at first, and worse during the winter months. There had been times during the summer months when the knee was practically normal. There had been several acute exacerbations lasting for two or three weeks, during which time both limitation of motion and pain had been considerable. The pain had been most marked over the lateral surface of the joint, although there had been some discomfort throughout the entire joint. There was no history of disturbance in other joints, and no previous diseases except measles during childhood.

**Physical Examination.**—The patient was well developed, and examination gave negative findings aside from the region of the right knee. On inspection the knee appeared normal except for a small oval swelling over the lateral surface of the joint just above and in front of the head of the fibula. Motion was limited to 90 degrees, and produced considerable pain. On palpation, the swelling was fixed, tense, smooth and somewhat tender. There was no external evidence of fluid in the joint or of thickening of the synovia. A probable diagnosis was made of detached external semilunar cartilage, although there was no history of locking.

**Operation and Result.**—Through a lateral incision in the line of the joint, the external surface of the semilunar cartilage was uncovered; an oval cystic swelling sprang from it. The joint was then opened and the entire cartilage and cyst excised. There was no excess of fluid in the joint, and the synovial lining appeared normal. The postoperative course was uneventful. Function in the knee returned to normal within two months, and has remained so up to the present writing, two years and four months later.

**Pathologic Examination.**—The superior and inferior surfaces of the semilunar cartilage appeared normal, but there was an oval swelling 3 cm. long springing from the middle portion of its convex lateral surface (Fig. 1). On section, this proved to be a multilocular cyst filled with a thick, stringy, clear fluid (Fig. 2). There was an extensive yellowish

white area of degeneration within the cartilage, extending inward to a depth of 1 cm. In the lateral portion of the degenerated area, at the edge of the cartilage and base of the external swelling, there were numerous small cysts filled with mucinous fluid. A section for microscopic examination was taken through the middle of the external swelling; it included a triangular wedge of the semilunar cartilage (Fig. 3). It disclosed degenerative changes in the center of the cartilage, becoming more extensive and marked as the lateral margin was approached. About the margins of this area the nuclei were breaking down, and the coarse fibers of the intercellular substance were losing their outlines. The deeper portions of the degenerated area consisted of an irregular meshwork of shreds, throughout which were numerous small cavities and mucinous substance which took a hematoxylin stain. The cystic swelling springing from the side of the cartilage had a coarse connective tissue covering. The walls of the multilocular cyst consisted of thin, dense layers of mature connective tissue. There were numerous thin septums partitioning it, especially about the periphery, where the loculi were very small. Two or three of the larger loculi were lined by a fairly thick layer of young, richly cellular connective tissue. This layer contained occasional leukocytes, and showed hemorrhagic infiltration and mucoid degeneration along the surface. There was practically no leukocytic infiltration or vascular engorgement to be seen in any other portion of the section. The blood vessels about the surface of the external cyst were mostly normal, a few of the smaller arteries showing thickening and hyaline degeneration of their walls.

The changes were entirely degenerative in nature, there being none of the other evidences of inflammation. No lining of an epithelial or endothelial nature could be detected in any of the cysts, whether located in the older peripheral or more recent intercartilaginous portions of the diseased area.

**CASE 2.—History.**—M. J., a woman, aged 18, who entered the Presbyterian Hospital, Oct. 11, 1922, during the last two months had had slight pain in the lateral portion of the right knee. It had been most marked when she arose to walk after sitting for some time. From the onset, she had noticed a slight swelling over the lateral aspect of the knee. She had had the usual diseases of childhood, and tonsillitis. Tonsillectomy had been performed several years before I saw her.

**Physical Examination.**—The patient was moderately well developed. Regional examination was negative aside from the right knee. Inspection of the knee revealed a very slight swelling just above and in front of the head of the fibula. There was full motion in the joint, but slight pain was experienced on complete flexion. On palpation, the lateral nodule was tense and slightly tender. It lay in the plane of the knee joint.

Profiting by experience with the previous case, cyst of the cartilage was suspected, and an aspirating needle was inserted. A thick, clear, mucinous material was removed which confirmed the diagnosis.

**Operation and Result.**—Through a lateral incision in the plane of the joint, the cartilage and attached cyst were excised. The joint was otherwise normal. The postoperative course was uneventful, and there was complete return of function six weeks after operation.

**Pathologic Examination.**—Gross: The superior and inferior surfaces of the semilunar cartilage were smooth and normal

1. Ebner, A.: München. med. Wehnschr. 51: 1737, 1904.

2. Schmidt, Erhard: München. med. Wehnschr. 53: 1415, 1906.

3. Riedel: Deutsch. Ztschr. f. Chir. 132: 167, 1914.

4. Eden: Naturwissenschaftliche medizinische Gesellschaft zu Jena, May 18, 1911.

5. Ollerenshaw, Robert: Brit. J. Surg. 8: 409 (April) 1921.



in contour, but the color of the cartilage was considerably altered. The inner two fifths bordering on the concave margin presented a bluish, transparent, normal appearance, but the remaining lateral portion was opaque and yellowish white. Springing from the middle portion of the side of the cartilage, there was an oblong cystic swelling which measured 2.5 cm. in length by 1 cm. in diameter. Its outer



Fig. 1 (Case 1).—Top view of cartilage and cyst.

surface was somewhat nodular. An incision was made through the middle portion of the cyst and cartilage. The cyst was multilocular, and filled with a stringy, clear, mucinous material. There was a wedge shaped, yellowish white area of degeneration extending into the cartilage for two fifths of its breadth. Small cysts were present in the



Fig. 2 (Case 1).—Incision through cyst and into cartilage, showing cavities and areas of degeneration.

outer portion of the degenerated area, the largest of which was the size of a grain of wheat. A second incision was made through the cartilage just anterior to the limits of the cyst, and here the yellowish white degenerative change was also present, but there were no macroscopic cysts.

Microscopic: A section cut through the middle portion of the cyst and cartilage disclosed that the outer wall of the

cyst springing from the side of the cartilage was composed of fairly thick, mature fibrous tissue. The cyst was multilocular, some of the cavities being quite large and possessing in places a richly nucleated connective tissue lining; but in most cases the lining of the cyst consisted of newly formed degenerating connective tissue, which in places was markedly hemorrhagic. Several of the smaller loculi about the periphery contained much blood. Some of the arteries, both large and small, were considerably thickened. There was no leukocytic or lymphocytic infiltration of the walls of the loculi. The necrosis of the newly formed connective tissue was marked by the presence of irregular, fragmented fibrilli and breaking down of nuclei, with a variable amount of extravasation of red blood corpuscles in the region. No endothelial or epithelial lining was seen in any portion of the loculi (Fig. 5).

The cartilage itself contained in its lateral portion a number of small cysts that were becoming confluent and were separated by thin plates of connective tissue in various stages



Fig. 3 (Case 1).—Microscopic section through cyst and cartilage.

of disintegration. The rest of the wedge shaped degenerated area consisted of a mucinous substance, coursed by irregular fibrillae and staining deep blue with hematoxylin. Cultures made from the fluid aspirated from the cyst remained sterile.

#### COMMENT

The pathologic findings in these cases are identical with those of colloidal cystic swellings which develop in various connective tissues, especially on the back of the wrist, and are commonly designated as ganglions. Most ganglions of the semilunar cartilage have occurred in young adults. The youngest patient was 16 years old, and the oldest was 55; the average age at the time of operation was 25 years. There were ten males and five females.

Trauma seems to have played a rôle in some cases, but it is of less importance than in ganglions of other locations, particularly those about the wrist. Schmidt's case followed four weeks after a blow on the knee, and



in all of Ollerenshaw's four cases there was a history of slight injury. In the remaining ten cases, there was no history of injury. As the lesion has never been observed in the internal semilunar cartilage, it has been thought that the greater weight bearing of the outer side of the joint, due to the slight inward angulation at the knee, predisposes the external semilunar cartilage to injury and secondary cystic degeneration. That traumatism is an important factor in the production of ganglions in general is shown by statistics collected by Ebner, which disclose that in the upper extremities 82.5 per cent. are in females and 17.5 per cent. in males, while in the lower extremities the proportion is reversed, 87.5 per cent. occurring in males and 12.5 per cent. in females. The lower extremities are much more likely to be the seat of traumatism in males than in females. It is not known whether traumatism, either single or repeated, is the sole cause of the subsequent cystic degeneration or whether there is an added element of low grade infection.

Cultures were made of the fluid aspirated in Case 2, but there was no bacterial growth. None of the other cases were examined bacteriologically.

The pathologic change is essentially a degenerative one and most of the phenomena of inflammation are absent, which speaks strongly against bacterial cause of the disease. From the microscopic findings, Ledderhose<sup>6</sup> assumed that ganglions arise from traumatism, which produces primarily an obliterating endarteritis, followed by degenerative changes in the surrounding connective tissue. Degenerative changes are present almost exclusively in the intracartilaginous diseased portion; but, in the walls of the multilocular cyst bulging from the side of the cartilage, proliferative changes are quite extensive. Fibroblasts form and break down

cysts show little obliterating change. It is most likely that the vascular alterations are simply a part of the degenerative process and not the initial change, as assumed by Ledderhose. Ollerenshaw reported an endothelial lining in some of the cavities and considered the lesion a true cyst, arising from misplaced endothelial

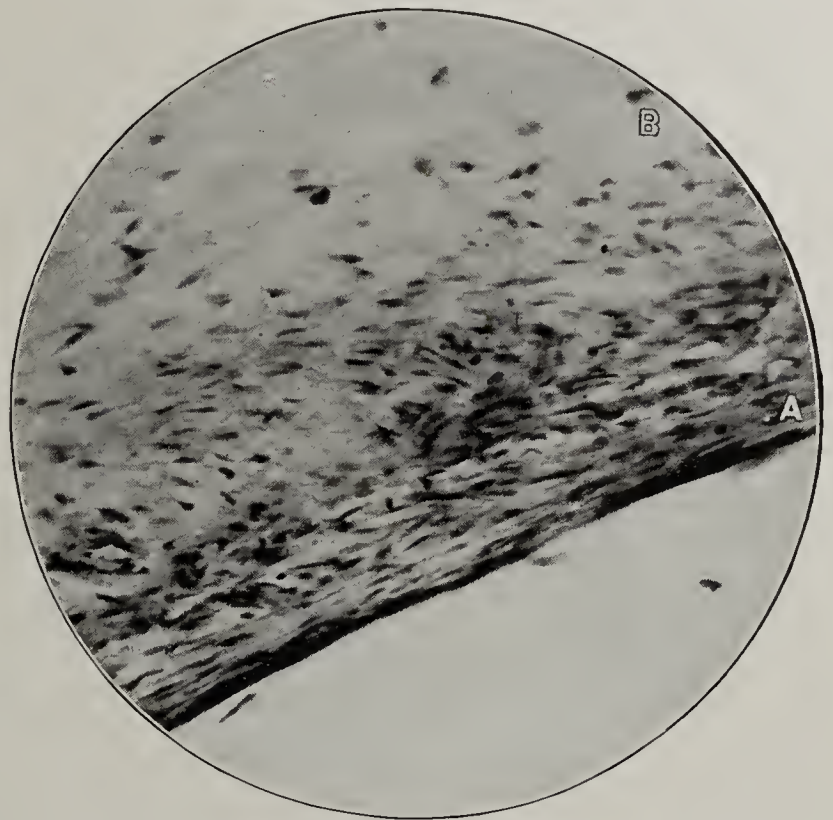


Fig. 5 (Case 2).—Section of partition between two cavities, showing (A) nuclei preserved along surface, and (B) degeneration in deeper portion.

elements that form the joint lining. His view is not substantiated by the findings in any of the other cases.

The cysts seem to attain their maximum size within a few weeks, after which they remain stationary and continue to produce pain and a variable amount of interference with motion in the joint until removed. There is no recorded instance of spontaneous disappearance either of the symptoms or of the swelling.

The treatment consists in operative removal of both cyst and external semilunar cartilage. In four instances, only the cyst was removed, and in two of these cases there was return of symptoms shortly afterward, necessitating a second operation. Excision of both cyst and cartilage has resulted in a complete cure in all cases in which it has been practiced.

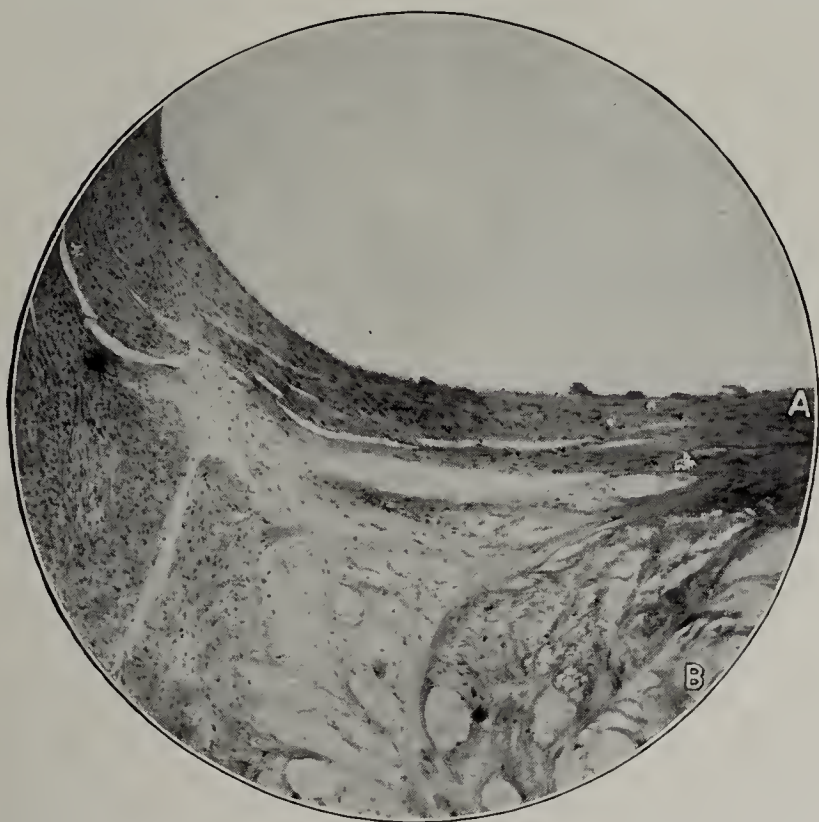


Fig. 4 (Case 1).—Junction of large cyst and cartilage, showing (A) connective tissue lining, and (B) degeneration in cartilage.

after passing through various stages of maturation. A point against the primary vascular origin of the cysts in my two cases is that blood vessels are not seen in the intracartilaginous degenerated portions, and most of the arteries in the walls of the external multilocular

**Study Man but Not by Arbitrary Standards.**—Since the time men became sufficiently numerous on the earth to make it necessary for them to take cognizance of one another, we have been setting up arbitrary standards by which to judge him; we have erected codes and laws and customs by which to measure and coerce him; we have poured out pity and "love" upon him and also hate and scorn; we have made him lovely toys, such as aeroplanes and phonographs and tried to make him happy, and when he was not happy we have tried to "save" him from something and for something—we have done all these things and more, and yet never have we seriously on any proper scale made an attempt to learn really what he is and to understand him for what he is, his possibilities for what they are, his own desires and interests be they what they may. We are approaching nearer to the time when arbitrary standards, built up without knowledge but as the result of empirical judgments, will be put aside for a time, and man will study man for what he is in the same way as he now studies other less important objects.—F. E. Williams, *Modern Hospital* 20:141 (Feb.) 1923.

6. Ledderhose: *Arch. f. klin. Chir.* 37:102, 1893.



## PROGRESSIVE OSTEOMYELITIS OF THE FRONTAL BONE

REPORT OF CASE \*

H. B. LEMERE, M.D.

OMAHA

*History.*—A man, aged 32, consulted me, Jan. 19, 1922, because of protrusion of the right eye. There was no history or general sign of syphilis. The patient had had epileptic attacks early in life. He had always suffered from bad nasal catarrh, and two months previously had elsewhere had an operation intranasally for frontal sinus empyema. Three weeks before I saw him, the right eyelids swelled and the globe protruded, but after a discharge of pus from the nose, this subsided.

*Examination.*—The patient was well nourished and was above the medium height. He was drowsy and slow mentally. The temperature was 99.8. The right eye protruded, and the upper lid was markedly swollen. The conjunctiva was slightly infected. The cornea and media were clear. There was slight blurring of the margins of the optic nerve. The retinal veins were tortuous and swollen. Pupillary reaction to light was slightly retarded. Movements of the globe were somewhat restricted. The left eye was normal. Examination of the nose revealed creamy pus from the middle meatus on each side. There was a polyp on the right middle turbinate. There were pain and tenderness in the right temple and the external angle of the orbit. Roentgen-ray examination revealed all sinuses markedly cloudy except the left frontals and ethmoids.

### *Treatment and Course.*—

January 20, the right frontal sinus was opened externally; it was full of pus, and the membrane was detached from the bone by the pyogenic process. There was no perforation in the bony wall. The floor and part of the anterior wall of the sinus

were removed. The anterior ethmoids were removed and a good opening was obtained from the frontal sinus into the nose. The orbit was then explored for the cause of the protrusion, and a collection of pus was encountered about an inch back from the brow under the upper wall of the orbit and just external to the outer limit of the frontal sinus. The abscess had perforated the upper wall of the orbit, and was epidural. The bony opening was enlarged and connected with the opening made in removing the floor of the frontal sinus. Drainage tubes were placed in the orbit, and a large tube was placed to keep the frontal sinus open for observation. A free intranasal opening was made into the right antrum.

February 2, the patient's condition was not satisfactory. There was pus pouring from both nostrils under pulsation. There was a swelling over the right cheek and in the roof of the mouth, on the right side. The patient was dull mentally. The fundus showed no swelling of the disk, but a

slight cloudiness of the vitreous. The protrusion of the globe had subsided. The pulse was 88; temperature, 98.6; respiration, 18. Under ether, both antrums were opened in the canine fossa, and through-and-through irrigation was begun. The right antrum was full of polyps.

February 22, the nose was fairly clear of pus. A swelling in the forehead was incised, and a large amount of pus escaped. The pulse was 84; temperature, 99.4; respiration, 24. In the next two months, thirteen abscesses over the frontal bone and in the lids and cheeks were incised, each time evacuating large quantities of pus. These incisions were all kept open by tubes until they ceased to discharge. The abscesses always connected with bone, which could be felt at the base of the abscess. In several of those opened early, the process of repair in the bone was found at necropsy to have proceeded to a point of almost complete recovery. The abscesses were of the nature of a cold abscess, and were unaccompanied by rise of temperature, pain or redness. An edema would make its appearance, and a few days later be followed by more circumscribed swellings with fluctuation. At no time was incision made into these swellings without

evacuation of creamy, syrupy pus. There was never a loose sequestrum demonstrable. The entire frontal sinus was kept open wide to observation and treatment during the course of the disease. The frontal sinus septum and part of the inner table failed to form granulations at any time. The antrums were free from pus four weeks before the patient died. In spite of negative Wassermann tests, intensive antisyphilitic treatment was carried out with neo-arsphenamin, mercurial inunctions, and iodids, without apparently affecting the disease in the slightest degree. Autovaccines were prepared and used in increasing strengths without producing any marked change in the patient's condition. Calcium lactate was given, but did not affect the progress of the disease. His nourishment was kept up well until the last. The surgical treatment of the abscesses consisted in opening them and keeping them freely open with tubes and irrigating frequently with surgical solution of chlorinated soda

(Dakin's solution), mercuric chlorid and the like. Local applications of silver nitrate, 10 per cent., and tincture of iodine were made.

April 16, an abscess had formed beyond the frontoparietal suture, which had formed the boundary up to this time beyond which the osteomyelitis had not progressed. An abscess also had formed over the right mastoid, though hearing was good and the middle ear normal. Both of these were incised, with release of a large amount of pus. It was felt, however, that this further invasion meant the breaking down of the patient's resistance. His appetite was still good; pulse, 90; temperature, 101; respiration, 24.

April 19, he became dizzy in the afternoon and refused food. He was more drowsy than usual. He had difficulty in speech. He complained of pain in the head. The pulse was 60; temperature, 97; respiration, 24.

April 20, both disks were pale, with no swelling and no tortuosity of the vessels. There was a conjugate deviation to the left. The patient complained of headache, but was very quiet. Kernig's sign was positive. The neck was sore and



Fig. 1.—Appearance, January 19, previous to operation: right frontal sinus and both antrums cloudy; the whole bone surrounding the frontal sinus appears darker, perhaps indicating involvement of the frontal diploe at this time; the right frontal sinus appears larger than it was found to be when the actual boundary, shown by dotted line, was opened.

\* From the Department of Otology, University of Nebraska College of Medicine.

\* Candidate's thesis, accepted by the American Laryngological, Rhinological and Otological Society, January, 1923.



stiff; there were slight muscular twitchings. The pulse was 60; temperature, 99.6; respiration, 30.

April 21, the patient's respirations ceased just before my arrival at the hospital. I found his pulse going, though he was apparently dead. Artificial respiration immediately improved his circulation, and his pulse became 84 and strong. Artificial respiration was kept up for one hour and ten minutes; but as the respiratory centers did not respond, it was felt that they were completely overwhelmed. The pulse was 140 and thready. Two minutes after artificial respiration was stopped, the patient died.

**Röntgen-Ray Examinations.**—The roentgenograms revealed the progress of the osteomyelitis. The plate taken when the patient first consulted me (Fig. 1) reveals some haziness at the lower inner portion of the anterior wall. There is also a very slight change from the normal appearance of the frontal diploe. It is possible that this is the first stage of the pronounced osteomyelitis shown in the later plate, and that this may be the commencement of the osteomyelitis. A roentgenogram, taken February 18, outlined distinctly the portion of the right frontal bone that came away at necropsy, and there is evidently an effort here to sequestrate this piece and throw it off. Figure 2, also taken at this date, discloses the osteomyelitis already well developed. Figure 3, taken March 27, shows the bone very much as we found it at necropsy. All the cranial and facial bones seem to be involved with the exception of the occipital.

These plates would seem to indicate the necessity of frequent roentgen-ray examinations during the progress of a frontal sinus case when the patient is not doing well.

**Laboratory Findings** (by Dr. A. S. Rubnitz).—The Wassermann examination of the blood, January 21, was positive, but was not considered conclusive, as the blood was taken soon after operation. January 26, it proved to be negative. There was no antisiphilitic treatment in the interval. The spinal fluid was examined, January 23. There was no increased pressure; the cell count was 60 per cubic millimeter, chiefly lymphocytes; globulin was moderately increased. The Wassermann reaction was negative. There were no antisiphilitic measures taken before or during the period of these tests.

Cultures were taken at different times. January 23, pus from around the tube (frontal sinus) yielded a gram-positive bacillus (diphtheroid organism). February 19, a direct smear from the frontal sinus yielded a few small bacilli. When a culture was taken on blood agar, the agar was almost completely liquefied, and had a very foul odor. The organism recovered was a small, gram-negative bacillus, most likely of the *proteus* variety. There were also a few gram-positive diplococci that looked like pneumococci. February 22, a smear from a skin wound around the anterior fontanel yielded some staphylococci and a few short chain streptococci.

The urine was about normal throughout. The leukocyte count was only slightly increased: from 9,000 to 14,000. *Bacillus proteus*, the colon variety, had probably much to do with the breaking down of the bone and soft tissues around them, although not the prime causative agent of the infection. The staphylococci found later in the superficial scalp wounds were most likely the first agents in the infection.

**Necropsy** (by Dr. J. Jay Keegan).—The examination was limited to the head. Superficially there was an old draining sinus opening in the right frontal region, entering the frontal air cells. There was also a drainage wound in the right

mastoid region. A scalp incision was made across the head from ear to ear. Pus was found in the line of incision beneath both temporal muscles. The scalp was reflected anteriorly and posteriorly, disclosing a greatly eroded frontal bone in the region of the frontal sinuses. Only a much perforated bony framework remained in the supra-orbital region, this portion being easily separated from the squamous part. There was a considerable quantity of foul-smelling pus in the right frontal sinus. Creamy pus formed a thin layer over almost the entire surface of the frontal bone, extending laterally over the squamous portion of the temporal bones and including a part of both parietal bones. The involved bone had an eroded, roughened surface from the active osteomyelitis. In both temples, pressure revealed the bone to be freely movable on the dura, owing to surrounding necrosis. The calvarium was removed by the usual incisions with saw, except that in the anterior region separation was made without sawing (Fig. 4). On removal of the skull cap, pus was seen in a thin layer between the dura and the involved temporal and parietal bones, extending on the right to the mastoid region and communicating with the drainage wound. The dura was intact in all regions. Both frontal sinuses were filled with pus. The dura was opened, and the subarachnoid space

appeared normal over the frontal lobes except for moderate congestion of the cortical vessels. The frontal lobes were withdrawn, exposing the region of the optic chiasm, where there was considerable fibrinopurulent fluid in the cisternal space. Following the usual methods of removal, the brain was removed by incision of the optic nerves, oculomotor nerves and the tentorium. Along the petrous portion of the temporal bones there was a small pocket of pus just above the left seventh and eighth nerves beneath the tentorium. This pocket appeared to communicate with the foramen of entrance of the left fifth nerve root. Dissection in this region disclosed a questionably infected cavernous sinus on this side. The entire basal cisternal

subarachnoid space contained fibrinopurulent exudate. The ethmoidal cells were fairly clear. The sphenoidal cells were filled with a thick pus. There was considerable necrosis of the roof of both orbits, but no infection in the orbital cavity. The posterior surface of the petrous portion of the right temporal bone showed surface necrosis not penetrating the dura.

The petrous portion of both temporal bones and the mastoid cells were opened, but did not appear to be deeply infected. Beyond the basal subarachnoid space there was no involvement of the brain proper.

The pathologic diagnoses were: osteomyelitis of the frontal bone, with contiguous involvement of the parietal and squamous portion of the temporal bones; frontal sinus infection; empyema of the sphenoidal cells; basilar meningitis, and subarachnoid abscess in the region of the left seventh and eighth nerves.

The primary cause of death was infection of the frontal sinuses. Contributory causes of death were osteomyelitis of the frontal bone, and basilar meningitis.

#### CASES ALREADY REPORTED

The first fully reported cases I have been able to find in the literature are those reported simultaneously before the section of Laryngology of the British Med-



Fig. 2.—February 18, four weeks after: riddled appearance of frontal ethmoid and superior maxillary sinus on left side, and mottled appearance over frontal region of right side.



ical Association in 1899, by Luc<sup>1</sup> of Paris and by Tilley.<sup>2</sup> Tilley also reported at that time two other cases that had come to his notice. McKenzie<sup>3</sup> gathered all the available literature and cases from that time to 1913, and compiled these statistics of forty-eight cases in a complete and comprehensive treatise. Since that time, several reports have appeared.

Porter's<sup>4</sup> patient was a woman, aged 46, in whom a frontal sinus operation was performed. Later, other sinuses were affected and operated on. Six months later, frontal osteomyelitis had developed and was operated on with extensive removal of bone. The patient recovered, and enjoyed good health for one year, when she died of pneumonia.

Mollinson's<sup>5</sup> patient was a boy, aged 15. During a frontal sinus operation, pus oozed from the bone, and there was extensive removal of the frontal bones. The patient recovered, but McKenzie<sup>6</sup> thought that sufficient time had not elapsed to pronounce the recovery final.

Patterson's<sup>7</sup> patient was a soldier who had osteomyelitis after an operation on the frontal sinus. Twelve operations were performed, resulting in recovery.

Tilley's<sup>8</sup> patient was a woman, aged 35, whose frontal sinus was operated on. Six weeks later an operation was performed for osteomyelitis; the whole left frontal bone, together with inflamed dura and brain tissue, was removed. Sequestrums appeared for several months, but finally the patient completely recovered.

McClay's<sup>9</sup> patient, a man, aged 30, had had intranasal operations on the antrums, ethmoids and frontonasal duct. Two months later, osteomyelitis set in. The whole anterior wall of the frontal sinus and a large portion of the outer table of the left frontal bone were removed. At later operations, the greater part of the left and part of the right frontal bones were removed. The last operation was performed six months after the first surgical treatment. The patient recovered. McClay states that this is the third case he has reported; one spontaneous and one postoperative case ended in recovery, and the other postoperative case did not.

Opdyke's<sup>10</sup> patient, a boy, aged 18, had the left frontal sinus curetted. Eleven days later, a trephining

operation was performed, with aspiration of seropurulent fluid from the fourth ventricle. Ten days later, parts of the parietal, occipital and temporal bones were resected. Several weeks later, a double frontal sinus operation was performed. The patient recovered after several months during which twenty-one operations were performed.

Bryan's<sup>11</sup> patient, a boy, aged 15, had an operation on the frontal sinus, with localized osteomyelitis. The operation was followed by spreading osteomyelitis. Death occurred eleven months later from a subdural abscess after complete relief of the osteomyelitis following repeated operations.

Skilern's<sup>12</sup> patient had osteomyelitis of the frontal, superior maxillary, malar ethmoid and sphenoid which resulted in death without extending into the diploe of the frontal bone.

Lynah<sup>13</sup> reported a case of osteomyelitis complicating scarlet fever in a girl, aged 13. This was a fulminating acute case, all sinuses on the left side and osteomyelitis of the frontotemporal region occurring simultaneously. There was apparent recovery six months after the opening of the sinuses and removal of sequestrums and softened bone from the frontal, temporal and malar bones; but sinuses and pus pockets developed at intervals, and the case could not be considered as closed.

Wood<sup>14</sup> reported two cases: In a boy, aged 15, drainage of the frontal bone was necessary, and later parts of the frontal bone were removed; the patient died two months after the onset of the disease. A man, aged 24, had osteomyelitis after a frontal operation; abscesses were opened; dis-

eased bone was removed. Trephining was performed for a brain complication. The patient died four months after the onset of the disease. Necropsy revealed brain abscess and hernia and diffuse pachymeningitis and leptomeningitis.<sup>15</sup>



Fig. 3.—Appearance, March 27: honeycombed condition of bone; the shape of the part immediately above A, and containing part of the right frontal sinus which separated at necropsy, can be distinctly seen; A, sequestrum found almost detached at necropsy; B, opening made into frontal sinus; C, frontoparietal suture.

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2. Tilley, Herbert: Brit. M. J. **2**: 994 (Oct. 14) 1899.
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## COMMENT

McKenzie makes the classification of (1) localized osteomyelitis, which has no tendency to spread, and heals after the diseased focus is removed, and (2) diffuse or spreading osteomyelitis, which has a great tendency to progress in spite of all procedures. Diffuse osteomyelitis he further divides into spontaneous and postoperative, the spontaneous variety making its appearance from an infected sinus which has not been operated on, and the postoperative appearing in frontal sinus cases in which operation, especially external operation, has been performed. In twenty-one spontaneous cases gathered from the literature there were seven recoveries, while in twenty postoperative cases there were no recoveries. McKenzie also lays down the rule that the diseased bone should be freely and extensively removed.

In reading McKenzie's article I naturally applied his remarks to my case. He states that while the diploe is not of prime necessity in the production of the disease, this structure undoubtedly aids in spreading the disease. The first roentgenogram in my case reveals a cloudiness of the bone in the lower anterior wall of the sinus about the root of the nose, not so clear in the reproduction as in the original negative (localized osteomyelitis), but there is also a suspicion of disturbance in the structure of the frontal bone. The second roentgenogram disclosed marked changes both in the dense bone above and in the diploe. McKenzie thinks that progressive osteomyelitis does not often complicate empyema of the antrum because the bone in the antrum has a better vascular supply. In my case there was an early involvement of the bone in the floor of the antrum, with a pus accumulation under the hard palate. This invasion seemed to clear up until much later in the disease, when the patient's resistance became much reduced and it again asserted itself in abscesses of the cheek and zygoma. McKenzie is driven to the conclusion that the lowered resistance of the bony tissue to the infection from some unknown cause is the main factor in progressive osteomyelitis. My patient showed so little local reaction, such as redness, pain and enlarged lymphatics, and so little general reaction (pulse, temperature, delirium, anorexia) that the symptoms were those of a cold abscess. *Bacillus proteus*, which we found, probably assumed renewed virulence or power of lysis in the osseous structures without arousing general resistance.

McKenzie mentions entrance of the disease directly to the osseous walls of the sinuses or through the veins connecting the mucous membrane and the osseous structures, and many observers believe that severe curetting of the sinus walls starts the disease. The mucous

membrane in the frontal sinus in my case was already loosened from the bony walls by the pyogenic process, and there was no instrumentation of the walls other than producing the openings necessary for drainage, which were accomplished by sharp instruments with the minimum of trauma. The necropsy finding of involvement of the posterior wall of the petrous portion, apparently jumping there, would indicate at least some extension by the veins. McKenzie's statement that the usual fatal ending of leptomenigitis comes by entrance of the pus to the base of the brain along the cranial nerves was borne out in the necropsy of my case, in which the left fifth nerve entrance seemed to be the portal of entry. The cases McKenzie quoted showed entrance by way of the optic nerve, cribriform plate, and by the seventh and eighth by way of the mastoid; but no observation was made of entrance by the fifth. That the etiologic factor was an inexplicable lack of resistance is shown in my case by the fact that the extensive purulent leptomenigitis produced no

intracranial pressure and no pain, severe headache or delirium. Somnolence and death from toxins showed the yielding to the infection without any fight, and this, though the patient remained well nourished and strong almost to the last.

In none of the literature is the importance of the roentgen-ray observations on the osteomyelitis emphasized. In another case I should check the treatment and operative work by roentgenograms taken at least once a week, and all bone showing any involvement would be promptly removed.

## CONCLUSION

Diffuse osteomyelitis of the frontal bone is still mysterious in its etiology, and the mortality with or without extensive bone removal is exceedingly high. Every case occurring should be fully reported with roentgen-ray pictures (not findings) and careful bacteriology, and where death results, careful necropsy findings. If this should be done generally we should soon have sufficient cases to lay down some further fundamentals than those so ably deduced by McKenzie.

**Beriberi Control in the Philippines.**—Beriberi was formerly one of the principal causes of death in the islands. For five years, ending, 1908, the average number of deaths a year in Manila was 487.6. During the next five years, it rose to 1,105.8. From 1914 to 1918, the period during which anti-beriberi measures, such as the use of unpolished rice and a more varied diet in government institutions, were adopted, the incidence from beriberi dropped to 860; and since 1919, the average mortality from the disease has been further reduced to 605. An appropriation of 12,000 pesos was made in 1917 for the manufacture and distribution of tikitiki extract, and pamphlets on infantile beriberi and its prevention.

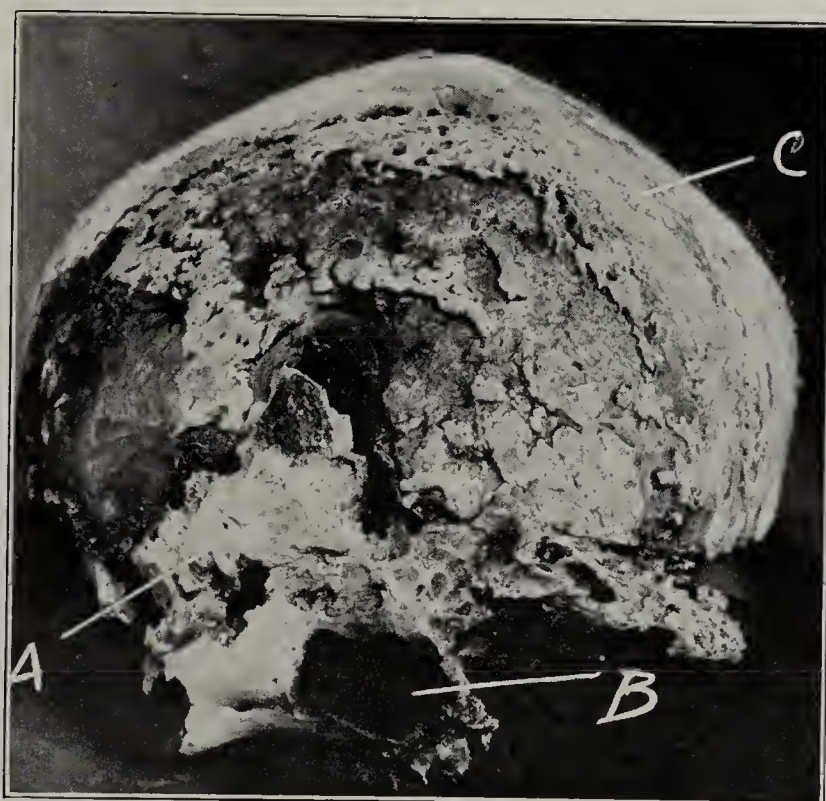


Fig. 4.—Calvarium: sequestrum in place. A, B and C, same as in Figure 3.



SIMPLE GOITER AS A RESULT OF  
IODIN DEFICIENCY

PRELIMINARY PAPER \*

J. F. McCLENDON, Ph.D.

WITH THE TECHNICAL ASSISTANCE OF

AGNES WILLIAMS, B.A.

MINNEAPOLIS

Chatin<sup>1</sup> advanced the hypothesis that simple goiter is correlated with a low iodine content of drinking water, but his opinion was not accepted. Heretofore the methods of iodine analysis have not been very well developed so as to determine small quantities in water. According to the director of the Geological Survey, iodine has been detected in waters containing 1,000 parts per million of chlorine and quantitatively in mineral waters containing 5,000 parts of chlorine per million. In Europe, certain determinations of the iodine content have been made; for instance, Macadam determined the iodine in 100 gallons of the Edinburgh water supply.

We have been using the method that I described before the Society of Biological Chemists in Toronto, Dec. 28, 1922, and our results so far have all fallen into line with the idea that there is an inverse ratio between the amount of iodine in surface waters or those of shallow wells or springs, and the distribution of goiter. The accompanying map shows the general findings. The goiter data were taken from photostat copies of the manuscript of "Defects

Found in Drafted Men," War Department, 1920, and also from Table xxxiii of that volume. This represents the examination of about two and one-half million drafted men, and yet this number was too small for accurate statistical work in relation to simple goiter. The probable error was very high, and in interpreting these data a certain amount of smoothing of the curves was done in order to make the zones continuous. The probable error is high, owing not only to the small number of cases of goiter reported, but also to the fact that different examiners may have different standards. If we compare the data by the draft board with that by Kerr<sup>2</sup> at Camp Lewis, we notice perhaps the greatest possible difference. Kerr finds 390 enlarged thyroids to each thousand recruits from the state of Washington, and the draft board finds only forty cases of simple goiter<sup>3</sup> to each thousand men in the county in which the

highest incidence of goiter was noted in Washington. As a matter of fact, the zones would probably not be continuous if the people remained in small localities and ate the food and drank the water from those localities.

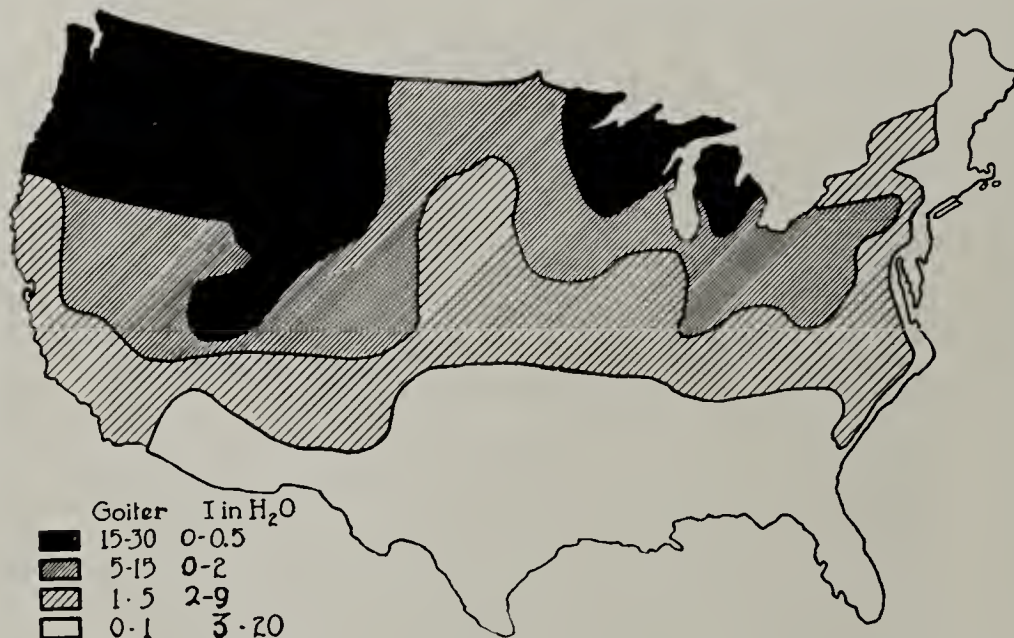
For instance, in olden times in Europe, particularly in the Alps, according to many observers, and in the Himalaya Mountains, according to McCarrison,<sup>4</sup> it was often possible to find two villages very close to each other in which the incidence of goiter is very different. In the United States, however, owing to migration of the population and transportation of food and drink there has been a smoothing out of the areas and obliteration of local differences. In fact, it is doubtful whether we are warranted in making four zones; perhaps three or even two are about all that are warranted. Two contiguous zones would necessarily shade into each other by migration. The goiter incidence in the different zones is quite distinct. In the first zone we find from 15 to 30 to each thousand men; in the second zone, from 5 to 15; third zone, from 1 to 5, and fourth zone, from 0 to 1.

The amount of iodine in drinking water from the few analyses so far completed shows in parts per billion in the first zone, from 0.01 to 0.1; second zone, from 0.015 to 1.2; third zone, from 0.06 to 9, and fourth zone, from 1.4 to 10. Of course, certain mineral waters are excluded from these analyses.

It is not intended to intimate that there is enough iodine in drinking water to prevent goiter. Even in case of the water of the lower Mississippi

and certain well waters that contain around 10 parts per billion of iodine, 10 liters (quarts) of water would have to be drunk before 0.1 mg. of iodine was ingested. According to modern Swiss practice, 0.1 mg. of iodine a day is about the dose recommended for schoolchildren for the prevention of goiter, and it is certainly impossible for the schoolchild to drink 10 liters of water a day. Furthermore, in the second zone the incidence of goiter is reduced very much from the first zone, and it is enormously less than in the very goitrous regions of Switzerland; and yet in some regions the iodine in the water is less than 0.1 mg. in 100 liters.

We would then have to suppose that the amount of iodine in the daily consumption of a few liters, say 0.003 mg. or less, showed some protective action. It seems more probable that the iodine in water is merely an indication of the iodine in soils which come in contact with this water, and that the iodine in soils is concentrated by the plants growing in the soils, and in that way the population over a given area receives iodine through the food. Therefore, water which is taken



Comparison of iodine in water supplies and distribution of goiter: iodine in parts per billion of representative rivers; goiter rate per thousand from Table xxxiii, Defects Found in Drafted Men, War Department, 1920, and manuscript; curves smoothed.

\* From the Laboratory of Physiological Chemistry, University of Minnesota.

1. Chatin: Compt. rend. Acad. de sc., 1850.

2. Kerr, W. J.: Preliminary Survey of Thyroid Gland Among 2,182 Recruits at Camp Lewis, Washington, Arch. Int. Med. 24: 347 (Sept.) 1919.

3. Too long to wear a military collar.

4. McCarrison, Robert: The Thyroid Gland in Health and Disease, New York, William Wood & Co., 1917.



from the very shallow wells or from the run-off of unpopulated areas would probably be the most typical. The amount of iodine in rivers is significant only in case the volume of the water is very large in proportion to the population along its banks, since it is very probable that all of the iodine given as drugs, besides all that taken in as food, finally finds its way into these rivers through sewage. The amount of iodine exported from Chile in 1904 was 500 metric tons. It is probable that a fair portion of this reached the United States. The amount of sewage contamination, however, could probably be measured by its chlorine content, and therefore any greatly contaminated waters could be excluded from the tables. This is evidenced by the fact that about 7,000,000 tons of salt are used in the United States each year.

As to the cause of this unequal distribution of iodine in natural waters and therefore possibly in the soil, there are at least three factors at work. In the first place, iodine is found in igneous rocks, and in the weathering of these rocks some iodine is liberated. Since the weathering of igneous rocks is very slow, the iodine content of water in contact with them would be very small. This is probably the case in western Oregon, which is largely covered by basalt in such a manner that the surface water or the roots of plants have no access to any iodine except that derived from the igneous rocks. Most of the iodine in the world is in the sea, which contains about 60 billion metric tons of it. Its concentration in the sea has probably been determined with some accuracy, since recent investigators agree pretty well on this point. Winkler<sup>5</sup> found 0.038 mg. of iodine in a liter of sea water. Cameron<sup>6</sup> found about the same amount. I<sup>7</sup> was able to confirm Winkler's work in a rough manner, finding about 0.04 or 0.05 mg. of iodine in a liter of sea water. This is about 100 times as concentrated as in water from Zone 1.

Much of the United States at intervals from the Cambrian period to the Pliocene period has been submerged under the sea, and in that way has been soaked in sea water for ages, thus receiving a store of iodine; but, as the land emerged from the sea, this iodine was gradually leached out by the rains, except when buried 100 or more feet deep, as in salt deposits in Michigan, New York and Ohio. The region low in goiter, in the Southern states, was the only large region that was submerged beneath the sea in a late geological period (Pliocene), and the amount of chlorine in many of the waters, in the waters of Texas, for instance, indicates that the sea salts have not entirely leached out of the surface in this region. A salt lake covered Kansas and the adjacent territory during the Permian period.

The third factor in the iodine distribution is atmospheric iodine from sea spray and the burning of coal. The United States Geological Survey has carefully mapped the amount of sea water contaminating rain water, and finds that all of the chlorine in the rain water of New York and New England is due to sea spray. The quantity decreases rapidly as we go from the coast toward the Great Lakes, and it may be noticed from the accompanying map that the amount of goiter increases from the coast toward the Great Lakes. The

iodine thus brought in amounts to 0.012 part per billion of rain water three miles from the coast, and decreases to about 0.0004 part per billion in the region of Lake Erie and Lake Ontario. This is added to the iodine derived from the soil, and may be significant. The effect of sea spray on the western coast is not shown by the draft board examinations in the prevalence of goiter. This is probably due to the obliteration of this beneficial effect by migration. The younger the person, the less time he has had to migrate; therefore we should expect more localized conditions to be reflected in infants and children. In fact, a map made by Dr. D. C. Hall, professor of hygiene, University of Washington, shows that the Puget Sound region is a region low in goiter among schoolchildren. As we recede from the sound or go down to the narrow portion, goiter increases. Narrow bodies of water have not much effect in throwing sea spray into the air, as is shown by the fact that whereas the widest portion of Long Island Sound throws considerable sea spray into the air, the narrow portion of it does not. It is very probable that the schoolchildren all along the western coast are comparatively free from goiter. Besides the sea spray, the spray of Great Salt Lake contains considerable iodine, as I was able to find 0.07 mg. of iodine per liter in it. This is evidenced on the accompanying map by an adjacent region of low goiter incidence, as contrasting with the high goiter incidence in eastern and southern Utah.

The only way to make certain of this relation between goiter and iodine is to make a large number of analyses of water from different parts of the country. Owing to the large size of the sample required, it is impossible for one investigator to procure them by his own efforts. It is therefore hoped that the interested parties will send in samples, in return for which analyses will be sent them.

The method for collecting the sample is as follows:

One-half teaspoonful of soda is placed in a tin dish pan. Several gallons of water are added, and are evaporated over a brisk fire. Measured quantities of water are added until the required amount for the zone has been added. The entire amount should be evaporated to less than a quart, and filtered into an evaporating dish and evaporated to dryness. The residue in the evaporating dish (but not that in the dishpan) is scraped out and sent to me. The smallest size sample required for Zone 1 is 25 gallons; Zone 2, 15 gallons; Zone 3, 10 gallons; Zone 4, 5 gallons. Larger samples give more reliable results.

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**Hospitals in Japan.**—In many of the general hospitals outside Tokyo, male and female patients occupy the same ward. The lack of privacy is intensified by the presence of visitors and the dearth of screens. As a rule, the number of visitors is unlimited and they may stay all day. In other words, they may practically live with the patient. The Charity in Tokyo allows visitors but a half a day twice a week. The Leprosarium never admits them. The wards seem crowded, not only because of visitors, but also because of the number of personal belongings which each patient provides. The following is one of the thirty-three rules for patients in a prefectural hospital: "The things the patient may bring on admission to the hospital are as follows: toilet paper, night gown, towels, washbasin, teacups, charcoal, charcoal scuttle, fire shovel, fire tongs, floor cloth, cushion, bed pan (if the patient is unable to leave his bed) and sleeping mat and bedding of attendant." Most hospitals furnish bedding, but do not supply garments, except to charity patients.—H. J. Howard and W. G. Lennox, *Modern Hospital* 20:123 (Feb.) 1923.

5. Winkler: *Ztschr. f. angewandte Chem.* 26:205, 1916.

6. Cameron: *Contribution to Canadian Biology*, University of Toronto Press, 1922, p. 75.

7. McCleendon, J. F.: *Science* 56:269, 1922.



IS THE ACTION OF BACILLUS ACIDOPHILUS A STRICTLY BACTERIOLOGIC PHENOMENON?\*

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NEW YORK

The relief from chronic constipation and diarrhea by the ingestion of milk fermented with *Bacillus acidophilus* is a phenomenon worthy of further study.<sup>1</sup> The beneficial effects obtained by such therapy might be due to a multiplicity of factors. It has been held that chief among these is the ingestion of an increased volume, and more particularly the addition of considerable water to the daily diet. As against this physical or mechanical interpretation, there is a chemical explanation, based on the presence of a considerable amount of lactic acid, together with the disintegration products of the organism *B. acidophilus*. Finally, there is the strictly bacteriologic interpretation, which holds the living *B. acidophilus* organisms responsible for all benefits. The experiments here described, which are still in progress, were devised in the hope of arriving at some definite conclusion regarding this phenomenon.

column gives the total number of days under observation. The next heading "sterile milk," is similarly subdivided to show the number of days during which normal defecations occurred while the patients were ingesting milk sterilized in the manner just described. It is readily apparent that most of the these patients were severely constipated; eight of the ten patients had one normal defecation a week, or less. When these patients were given daily 1 liter of sterile milk, it will be seen that there was little, if any, improvement in their condition. While the first patient did show some improvement, the second patient became much more constipated. The third patient continued to be severely constipated. The fourth patient showed a slight improvement, while the fifth became somewhat more constipated.

For the following week, three of these patients, as well as five others, were given daily 1 liter of skim milk, sterilized as described, but inoculated and incubated for twenty-four hours with *B. acidophilus* in the usual manner,<sup>3</sup> after which it was pasteurized by being heated in the Arnold sterilizer (steam at atmospheric pressure) for ten minutes. In order to avoid extreme coagulation of the casein, which would make the milk

TABLE 1.—OCCURRENCE OF DEFEICATIONS IN CONSTIPATED PATIENTS UNDER DIFFERENT TREATMENTS

Patient	No Treatment		Sterile Milk		Pasteurized B. Acidophilus Milk		Regular B. Acidophilus Milk			After B. Acidophilus Treatment			
	No. of Defecations	No. of Days	No. of Normal Defecations	No. of Days	No. of Normal Defecations	No. of Days	No. of Defecations 7 Days	No. of Normal Defecations	No. of Days	Lactose		Nothing	
										No. of Normal Defecations	No. of Days	No. of Normal Defecations	No. of Days
1	2	14	3	7	2	5	5	51	62	..	..	19	23
2	12	19	2	7	1	6	6	16	18	..	..	46	59
3	1	34	0	7	..	..	4	67	99	11	12	20	55
4	8	31	3	7	..	..	4	41	62	20	23	..	..
5	12	18	4	7	2	5	6	32	61	..	..	12	24
6	1	7	..	..	2	6	6	47	50	52	63	..	..
7	4	28	..	..	0	12	7	17	22	56	60	3†	6
8	1	12	..	..	0	7	3	23	42	Continued: almost daily defecation			
9	1	14	..	..	0	7	2	16	42	Continued: almost daily defecation			
10	0	14	..	..	0	7	2	11	42	Continued			

\* More than one per day counted as only one.

† Four months later.

EXPERIMENTAL DATA

Patients with a history of chronic constipation were given the carmin test, and daily defecations were recorded for some time prior to any treatment, in order to establish the patient's intestinal motility. The feces were examined microscopically, and the presence of gram-positive and gram-negative organisms was determined by a modified method previously described.<sup>2</sup> Some of the patients were then given, during the period of one week, daily doses of 1 liter of skim milk sterilized at 20 pounds pressure for fifteen minutes, which gives it a delicate cream caramel color. This uninoculated milk is identical with that ordinarily inoculated with *B. acidophilus*; therefore, if increased volume is of prime importance, beneficial effects should be induced. The data are summarized in Table 1.

The heading "no treatment" refers to the period of time during which the patients have been under observation prior to any treatment. In the first two columns under this heading is given the number of days during which the patient had normal defecations. The second

indigestible, the acidity caused by the fermentation was first neutralized with normal sodium hydroxid. The milk was plated out on whey agar after pasteurization, and was found to be sterile.

From the data that are presented in Table 1, it will be seen that there was no improvement in the intestinal condition of any of these patients when they were taking pasteurized milk, over their condition when taking sterile milk. Also, it may be seen that pasteurized *B. acidophilus* milk had a constipating effect, if any. It is realized that the neutralization of the milk prior to pasteurization prevents any possible activity of the lactic acid which was formed during fermentation. Therefore, in continuing these experiments, this deficiency has been overcome by adding lactic acid in an equivalent amount to the milk after pasteurization, with the same results. It is impossible completely to separate the chemical from the bacteriologic factors in such therapy, for the phenomenon must be biochemical, in the sense that the bacteria secrete by-products of a chemical nature. Nevertheless, it is of interest to determine, if possible, whether these by-products are of most importance or whether the most important factor is the actual multiplication of *B. acidophilus* in the intestine. With this end in view, patients have been given the Berkefeld filtrate of *B. acidophilus* milk, which contains the essential acids, salts and enzymes, but no living bacteria.

\* From the Department of Bacteriology, Psychiatric Institute, Ward's Island.

1. Rettger, L. F., and Cheplin, H. A.: The Transformation of the Intestinal Flora, with Special Reference to the Implantation of *Bacillus Acidophilus*. Yale University Press, 1921. Kopeloff, Nicholas, and Cheney, C. O.: Studies on the Therapeutic Effect of *Bacillus Acidophilus* Milk and Lactose, J. A. M. A. 79: 609-611 (Aug. 19) 1922.

2. Kopeloff, Nicholas, and Beerman, Philip: Modified Gram Stains, J. Infect. Dis. 31: 480-482 (Nov.) 1922.

3. Kopeloff and Cheney (Footnote 1, second reference).



These results will be reported at a later date, the present indications being that such filtrate is of little benefit.

Since neither the physical nor the chemical interpretation of *B. acidophilus* therapy can be considered adequate, the patients were given daily 1 liter of the regular *B. acidophilus* milk, in most instances reinforced with lactose. It contained approximately 200,000,000 viable organisms to each cubic centimeter. It will readily be seen from Table 1 that the beneficial effects of this treatment were soon in evidence, and that relief from chronic constipation was obtained. This indicates that the phenomenon is strictly bacteriologic in nature. Under the heading "regular *B. acidophilus* milk," there are the usual subdivisions, but the first column contains the number of normal daily defecations occurring in the first seven days. This was inserted as a basis of comparison with the results obtained with sterile and pasteurized milk. There has been an improvement, often striking, in every patient studied. This is further substantiated by the persistent improvement shown under continued treatment, as evidenced by the data in the remaining columns under this heading. Frequently the patient had more than one movement a day; but, in order to leave no room for question, they have not been counted here. Thus, in all the columns marked "number of normal defecations," it is to be understood that the number of days during which one or more movements occurred is recorded rather than the actual number of defecations.

An interesting comparison is made in Table 2 on a percentage basis, between the period before and after *B. acidophilus* therapy, the number of days of observation being used as a divisor, and the number of normal daily defecations as a dividend. If the figures under the heading "regular *B. acidophilus* milk" are compared with those in the preceding columns, it will be noted that a marked increase has occurred. For example, in the first two cases, the percentage of defecations is about double that obtained with sterile or pasteurized *B. acidophilus* milk. In the last four cases, this increase is still greater. Quantitative data such as these may, in certain instances, yield a distorted emphasis, since the character of the stools is frequently as important as the number of defecations. Therefore, it is all the more significant that the character of the stools from patients under intensive *B. acidophilus* therapy is almost invariably more nearly normal than when there is no treatment, or sterile milk or pasteurized *B. acidophilus* milk is given. The stools are of a softer consistency, and the color is much lighter. On the other hand, certain limitations are recognized, chief among these that the size of each stool is frequently as important as the number of defecations. While *B. acidophilus* therapy has a general tendency to increase the size of the individual stool, frequently the movements increase only in number, and in some patients the size remains unsatisfactory. These considerations, which will be published later, are difficult to tabulate, but should receive due recognition in the general evaluation of this method of treatment.

Of further interest in this connection is another experiment that is corroborative of the fact that the action of *B. acidophilus* is a strictly bacteriologic phenomenon.

Two members of the institute staff were extremely susceptible to *B. acidophilus* milk. Diarrhea followed the ingestion of comparatively small amounts. Therefore, it was determined to give them each 400 c.c. of *B. acidophilus* milk which

had been pasteurized, without their knowledge in order to eliminate so far as possible any psychologic factors. It is particularly significant that the reactions of these two persons were identical. Following the ingestion of the milk, there was a certain amount of gas formed. This was not accompanied by undue tension or pain. Instead of having three or four defecations, as had previously been the case when 400 c.c. of the regular *B. acidophilus* milk was taken, each subject had only one normal defecation, which was customary, before retiring. Three days after this test, each subject was again given 400 c.c. of regular *B. acidophilus* milk, unpasteurized. Both were under the impression, however, that it had been pasteurized. Neither had any defecation, and both complained less of gas formation than previously with the pasteurized milk. Again, they were given regular *B. acidophilus* milk in greater volume, 800 c.c., under the impression that it was pasteurized, although it was not. With this amount, both patients had a diarrheal attack, curiously enough each recording three defecations, one of these being semisolid, and one fluid. As a further check, these subjects were given 800 c.c. of pasteurized *B. acidophilus* milk, they being under the impression that it was the regular *B. acidophilus* milk which gave them diarrhea. Their reactions were again identical. Each had one abundant semifluid movement at about 6 p. m., but no more. Appar-

TABLE 2.—PERCENTAGE OF DEFEICATIONS UNDER DIFFERENT TREATMENTS

Patient	No Treatment	Sterile Milk	Pasteurized B. Acidophilus Milk	Regular B. Acidophilus Milk		After B. Acidophilus Treatment	
				First 7 Days	Total	Lactose	Nothing
1	15	43	40	71	85	..	87
2	60	30	17	86	89	..	78
3	3	0	..	57	67	96	36
4	26	43	..	57	67	71	..
5	66	57	40	86	50	..	50
6	15	..	33	87	94	77	..
7	15	..	0	100	80	93	..
8	8	..	0	43	57	..	..
9	7	..	0	30	39	..	..
10	0	..	0	30	24	..	..

ently, there was some stimulation of peristalsis, but the results were not comparable to the effects produced by the regular *B. acidophilus* milk.

In addition to the foregoing data, further evidence may be presented. Thus, careful daily records of the defecations of all patients receiving this treatment have been kept over as long a period of time as possible, even after the ingestion of milk has been discontinued. While it would be premature to state any conclusion as to the persistence of the beneficial effects, several cases may be cited of women who had previously only occasional normal evacuations, but who had frequent defecations when under *B. acidophilus* treatment. Several months after *B. acidophilus* therapy had been discontinued there was still normal defecation.

Under the final heading "after *B. acidophilus* treatment," in Table 1, the subdivisions "lactose" and "nothing," which are further subdivided in the usual manner, indicate the results obtained after *B. acidophilus* had been discontinued, and the patients either did or did not receive lactose.

The first patient in this series had defecations on nineteen out of twenty-three days, or 83 per cent., after *B. acidophilus* therapy, as compared with defecation on two out of fourteen days, or 15 per cent., before treatment. Patient 2 showed a similar improvement of about 20 per cent. Patient 3, who had only one normal movement in more than a month preceding treatment, had eleven movements in twelve days while taking lactose after *B. acidophilus* therapy had brought about a great improvement. She then stopped taking lactose, and, for almost two months after all treatment was discontinued, she had a normal defecation about every other day.



Patient 4 showed a 50 per cent. improvement, but Patient 5 showed a slight retrogression. This emphasizes the variability of the individual reaction to such treatment, and the danger in generalizing. The next two patients showed striking improvement in bowel movements, two months after the treatment had been discontinued.

These observations have not been continued over a sufficient period of time to warrant any conclusion concerning the permanence of relief from chronic constipation. However, the records of two patients not included in this series, because they left the hospital prior to this experiment, have an important bearing on this question:

One patient had eleven normal defecations in 103 days (more than three months) before treatment. Following one month's intensive *B. acidophilus* treatment, she had 185 normal defecations in 231 days, or 80 per cent., for almost eight months after discontinuing treatment, as compared with 11 per cent. originally. These total figures do not reveal the fact that during the last month the percentage was nearer 50, and that this diminution may become progressive.

Another patient had seventeen normal defecations in seventy-three days (two and one-half months). Under two months intensive *B. acidophilus* therapy, she had fifty-nine normal defecations in sixty-one days. After discontinuing *B. acidophilus*, she had 121 normal defecations in 172 days (nearly six months). In other words, the percentage is 70, as compared with 23 originally. There seems to be no decline with this patient, since her percentage for the last month has been 77.

#### COMMENT

Considering these two cases with those already discussed, there is here evidence to invite the belief that with some persons the relief from chronic constipation may persist long after treatment has been discontinued. Unquestionably, individuals vary greatly in their reaction to *B. acidophilus*, and there are instances of patients approximating their former constipated condition when *B. acidophilus* milk is discontinued. The complexity of factors which determine any individual's gastro-intestinal condition makes it difficult to generalize on the benefits of any single mode of treatment. The fact remains that up to this time no patient, no matter how constipated, has failed to be relieved of constipation following an intensive course of treatment with *B. acidophilus* milk and lactose.

In this connection, another noteworthy point may be mentioned: an appreciable percentage of viable *B. acidophilus* organisms was recovered from some patients, months after their ingestion had been discontinued, indicating that a true implantation had taken place. Thus, in the patient who has been longest under observation, the first of the two patients not included in the series, 25 per cent. of the total plate count of feces on whey agar were viable *B. acidophilus*, but this was not a constant finding. It may be something more than a coincidence that another earlier patient gave precisely the same percentage of viable *B. acidophilus* six months after discontinuing *B. acidophilus* milk. Two other patients previously noted, Patients 4 and 5, showed 80 per cent. of viable *B. acidophilus* seventeen and twenty-one days, respectively, after discontinuing treatment.

The data herein presented are in direct contradiction to certain general statements made by Bassler and Lutz,<sup>4</sup> which are unsupported by any evidence thus far published. No one recognizes the limitations of *B.*

*acidophilus* therapy more clearly than those who have actually conducted such research as is patent in the work of Rettger and Cheplin,<sup>5</sup> Norman and Eggston<sup>6</sup> and others.

Theoretical objections, therefore, can have little validity in the face of facts.

There are now various commercial preparations of *B. acidophilus* on the market. It is unfortunate that none of these which have come to our attention warrant recommendation, since experience based on their adequate and widespread use would be of great value.

The observations here reported are being continued.

#### SUMMARY

Subject to the limitations of the material under consideration, the following points have been established:

1. The action of *B. acidophilus* is not a physical phenomenon, since patients receiving sterile milk were not relieved of constipation.
2. The action of *B. acidophilus* does not appear to be a strictly chemical phenomenon, since patients receiving pasteurized *B. acidophilus* milk were not relieved of constipation.
3. The action of *B. acidophilus* appears to be essentially a bacteriologic phenomenon, since patients were relieved of constipation by the ingestion of milk fermented by *B. acidophilus*.
4. Relief from chronic constipation has persisted for six months after the ingestion of *B. acidophilus* has been discontinued.
5. Viable *B. acidophilus* organisms in appreciable numbers have been recovered from the feces of patients months after the ingestion of *B. acidophilus* milk.

## INTERNAL HEMORRHAGIC PACHYMENINGITIS IN INFANCY

### REPORT OF FIVE CASES \*

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Internal hemorrhagic pachymeningitis occurring in infancy cannot be considered a rare disease. Finkelstein,<sup>1</sup> in 1911, reported six cases, and had records of fifty others. Rosenberg,<sup>2</sup> in 1913, compiled reports of thirty-eight cases. Feer<sup>3</sup> saw five cases in three years. However, few cases have been reported in this country, and since 1915 relatively little has appeared in the literature concerning this disease.

The name would indicate that the process is a hemorrhagic inflammation of the inner surface of the dura. According to Rosenberg,<sup>4</sup> the disease was first described in France, about 1835, under the name serous cysts of the arachnoid. There has always been a controversy regarding the pathogenesis of the disease. Virchow, in 1854, advanced the so-called "primary inflammation" theory to explain its pathogenesis. Prior to that, pathologists had considered the inflammation, when present,

5. Rettger and Cheplin (Footnote 1, first reference).

6. Norman, N. P., and Eggston, A. A.: Intestinal Infections and Toxemias and Their Biological Treatment, New York M. J. 116: 623-626 (Dec. 6) 1922.

\* From the Department of Pediatrics of Lakeside Hospital and Western Reserve University School of Medicine.

1. Finkelstein, cited by Rosenberg.

2. Rosenberg, O.: Berl. klin. Wchnschr. 50: 2272, 1913.

3. Feer: Cor.-Bl. f. Schweiz. Aerzte. 45: 598, 1915.

4. Rosenberg, O.: Ergebn. d. inn. Med. u. Kinderh. 20: 549, 1921.

4. Bassler, Anthony, and Lutz, J. R.: Bacillus Acidophilus: Its Very Limited Value in Intestinal Disorders, J. A. M. A. 79: 607-608 (Aug. 19) 1922.



as secondary to the hemorrhage, and occurring in the process of organization.

Boeckmann<sup>5</sup> investigated a series of cases in which death followed operations on the brain or meninges, and in none was there a hemorrhagic pachymeningitis. He concludes that it takes more than trauma and aseptic hemorrhage to produce the disease. Wohlwill,<sup>6</sup> after studying the gross and microscopic anatomy, concluded that: 1. It is a primary proliferation of the subendothelial tissue, probably following a previous lesion of the endothelium. Fibrinous and serous exudations as well as hemorrhage are only accidental accompanying processes. 2. In neither the traumatic cases nor those which accompany a hemorrhagic diathesis does the histologic structure of the membrane speak for an origin through organization of a primary hemorrhagic effusion.

Marie, Roussy and Laroche<sup>7</sup> tried to produce the disease experimentally. They employed dogs and rabbits, and injected them subdurally with (a) whole blood, (b) blood plus a killed suspension of staphylococci, and (c) a mixture of fatty acids and sodium nucleinate. With the last method they obtained in several instances a picture resembling internal hemorrhagic pachymeningitis. They infer from these findings that it is not a primary hemorrhage that produces the disease. Numerous other authors also oppose the primary hemorrhage theory.

Another theory has been offered by a third group, represented mainly by Jores and Laurent. These authors describe the condition as a primary noninflammatory proliferation of the subendothelial capillary layer. The nature of such a process has no parallel in human pathology. Rosenberg<sup>4</sup> goes so far as to say that he was unable to find any fibrin in any of his cases; there were no inflammatory cells, and no young connective tissue cells in the early stages. Also, the fluid from the cysts has the character of a transudate and not of an exudate. He says that he cannot agree with the descriptions found in most of the textbooks of pathology.

The picture described in most of the textbooks is this: There is a proliferation of the endothelial layer on the inner surface of the dura. In the early stage, a few leukocytes and some fibrin may be present. Later, fibroblasts and new capillaries grow out from the subendothelial layer, which is very vascular. The capillaries, being thin walled, are easily ruptured. The hemorrhages may be minute, and if so are soon resorbed, leaving only a brownish pigment; but if they recur, the membrane in time attains considerable thickness. When the hemorrhage is more extensive, the membrane is pushed away from the dura; and, as the cellular elements are digested or carried away, there remains a cyst containing a yellow fluid. A new membrane then forms on the dura, and if the process is repeated there results a lamellated structure between the layers of which are collections of blood in various stages of resorption. The site of this process is most often the midportion of the convexity, and it is usually bilateral.

The acute infections, syphilis, tuberculosis and trauma are perhaps most frequently given as the primary etiologic factors. The so-called "hemorrhagic diathesis group," including scurvy, leukemia, pernicious

anemia, purpura and hemorrhagic disease of the newborn, are often blamed. Schwartz<sup>8</sup> reported a case in which the meningococcus was found. Hemolytic streptococci have occasionally been implicated. Chronic nutritional disturbances have been believed to play an important rôle. Nearly all of Rosenberg's cases occurred in institutional infants who had been artificially fed since birth. He says that the condition is rare in private or dispensary practice. In reading the reports of various authors, we find that in a majority no definite etiology could be assigned. Negative Wassermann reactions and tuberculin tests, and sterile blood and spinal fluid cultures are the usual findings.

Perhaps the most plausible theory at present is that of Rosenberg, who believes that internal hemorrhagic pachymeningitis is due to thrombosis of the cavernous sinus, as the result either of an infection or of a marantic condition. In a large percentage of his cases there was a bloody nasal discharge a short time before the disease manifested itself. Diphtheria bacilli were usually obtained by culture. However, in some of the cases the rhinitis was syphilitic in origin. The inflammatory process extends from the ethmoid vein to the ophthalmic and thence to the cavernous sinus. The anatomic picture of hemorrhagic pachymeningitis he attributes to a passive congestion due to the obstruction of the veins emptying into the sinus; namely, the middle meningeal, ophthalmic, central vein of the retina, ethmoid and supra-orbital. The hemorrhages into the retina and the usual localization of the process in the region drained by the middle meningeal vein are beautifully explained by this theory. He admits, however, that there are certain symptoms one would expect to follow in the course of this thrombosis, which are not usually present with the pachymeningitis, and, further, that the thrombosis has never been found by him at necropsy, even though he has diligently searched for it.

The symptoms may be gradual or sudden in onset. Generally speaking, they are those of increased intracranial pressure or meningeal irritation. Vomiting and convulsions are perhaps the most common reasons for bringing the patient to the physician. Bulging fontanel, enlargement of the head, cervical or general rigidity, increased reflexes, muscular twitchings, paralysis, hyperesthesia, somnolence, pressure pulse and changes in the character of respiration are symptoms which are mentioned. Fever, if present, is usually not high except just before death. The most characteristic finding is the retinal hemorrhage, which is present in a majority of the cases and is certainly rare in other conditions of later infancy. There may be choked disk or optic atrophy. The spinal fluid is normal, or contains evidence of old or recent hemorrhage. Puncture of the anterior fontanel outside the longitudinal sinus is a procedure on which pediatricians have laid much stress. To obtain by it a yellow or bloody fluid practically makes the diagnosis certain. This fluid, and the same is true when it is obtained from the lumbar subarachnoid space, does not clot on standing, although there may be a small fibrin clot or pellicle. Briefly, then, if an infant more than 4 weeks old, usually between the ages of 6 and 18 months, has symptoms of markedly increased intracranial pressure, often more acute than with a tumor, and has a normal spinal fluid, one of the first things to consider is internal hemorrhagic pachymeningitis. The presence of retinal hemorrhages makes the diagnosis practically certain, and a positive fontanel

5. Boeckmann: Virchows Arch. f. path. Anat. **214**: 380, 1913.

6. Wohlwill, F.: Virchows Arch. f. path. Anat. **214**: 388, 1913.

7. Marie, Roussy and Laroche: Comp. rend. Soc. d. biol. **74**: 1303, 1913.

8. Schwartz, A. B.: Pachymeningitis, Am. J. Dis. Child. **11**: 23 (Jan.) 1916.



puncture is pathognomonic. A yellow subarachnoid fluid or one containing red blood cells is very suggestive. If the disease has been going on for some time, there will probably be enlargement of the head.

The mortality of this disease per se is said to be very low. The infants, however, succumb readily to intercurrent infections, especially bronchopneumonia. Goepfert<sup>9</sup> thinks that the appearance of blood in the spinal fluid warrants a bad prognosis. Feer found a bloody fluid in all his cases, and still believes that in most of them recovery occurs. Many of the infants who live through the attack carry a permanent disability, such as chronic hydrocephalus, imbecility, blindness, deafness, paralysis, spasticity or speech defect. D'Espine<sup>10</sup> reported a case in which the patient left the hospital apparently in good condition, but returned a few years later with typical Little's disease. Rosenberg, who, in his early paper, gave a good prognosis, has changed his opinion. He was able to locate a small number of his patients eight or nine years after the disease, and found that 70 per cent. had some defect. He says that the severity of the disease bears no relation to the after-effects. Some with the most severe symptoms were later found to be normal, and those with mild symptoms showed serious defects.

The treatment is mainly symptomatic. In adults, surgery has been employed, and favorable results have been reported. In infants, drainage of the fluid by repeated punctures through the anterior fontanel has not resulted in much improvement, and Finkelstein says that it may be harmful. Gelatin injections have been used in an attempt to control the bleeding. In light of our present knowledge, it is logical to supplant this with intramuscular injections of whole blood or with transfusions. If syphilis is suspected, of course antisyphilitic therapy should be instituted.

#### REPORT OF CASES

The five cases here reported were observed in the pediatric service of Lakeside Hospital in the last three years:

CASE 1.—A. L., a white boy, aged 20 months, entered the hospital, Oct. 29, 1919, with a history of convulsions for one month which had been becoming progressively more severe.

On admission the child was in deep coma, and breathed only four or five times a minute. He did not respond to any external stimuli. The extremities were cold and cyanotic. At this time there were no localizing symptoms, and the fontanel, though open, was not bulging. There was a bloody discharge from the nose. Symptoms which might be construed as due to syphilis were a depressed nasal bridge and a deformity of the left forearm. The latter, however, appeared to be due to a healed fracture of both the ulna and the radius. There was an abrasion over the left eye, evidently from a mild injury.

During the first few days the child had numerous severe convulsions. Lumbar puncture at first yielded a clear fluid containing a few unchanged red cells. A subsequent puncture of the cisterna magna gave a clear fluid free from cells and globulin. An attempt was made to obtain blood from the longitudinal sinus, and a yellow fluid was encountered which did not clot on standing. Ophthalmoscopic examination revealed at first a hemorrhage near the left disk. The right retina was normal. A few days later there were hemorrhages in both retinas, and slight edema of the disks. The "capillary permeability test" revealed a somewhat increased number of petechiae. Nose and throat cultures were negative for diphtheria bacilli.

November 1, there was some general improvement. However, a paresis of the right side could be made out, and the boy was apparently blind.

During the next few weeks there was gradual progressive improvement. November 12, clear yellow fluid was again obtained by fontanel puncture. The hemorrhages were gone from the right retina, November 11, but persisted in the left eye until the early part of January. Vision returned apparently to normal. The Wassermann reactions on the fluid obtained by fontanel puncture were always negative; but the clear spinal fluid, on two occasions, gave a four-plus reaction when 0.5 c.c. was used, although the result was negative with 0.3 c.c. Later two negative tests were obtained in all dilutions. There were five negative Wassermann tests on the blood. Red mercuric iodid and potassium iodid had been given as a provocative soon after admission.

He was discharged, Feb. 25, 1920, in good physical condition, and weighed 8.7 kg., which was 2.1 kg. above his weight on admission. The parents refused to bring him to the dispensary, and he was not seen again.

The significant features of this case are as follows: The suggestion of syphilis afforded by the depressed nasal bridge was not supported by the serologic findings even though provocative therapy was employed. The blood in all of five, and the fontanel puncture fluid in two, instances were negative. The spinal fluid, however, on two occasions, while negative for amounts of 0.1, 0.2 and 0.3 c.c., was two plus for 0.4 c.c. and four plus for 0.5 c.c. Both preceding and following these tests, negative reactions were obtained for all amounts. The bloody nasal discharge suggests diphtheria as a possible etiologic factor, especially as Rosenberg considers this infection to be of the greatest importance in the causation of pachymeningitis. Cultures were negative, though this, of course, does not absolutely exclude diphtheria.

CASE 2.—M. H., a white girl, aged 10 months, was admitted to the hospital, Feb. 19, 1921, because she had been vomiting and having convulsions for the preceding month. The vomiting was described as projectile in type, and usually occurred immediately after feeding. The attacks of convulsions occurred only about once a week, but had been becoming more severe. The child had lost weight. Recently there had been some nasal discharge. The history showed that she had not thrived either at the breast or when taking condensed milk. She had held up her head at 4 months, and was now just beginning to sit up. The family history was negative except that one brother died of convulsions at the age of 10 days.

The infant was markedly undernourished, and weighed only 3.5 kg. She appeared extremely ill. The extremities were cold and cyanotic. The anterior fontanel was 4 cm. in diameter, but there was no bulging. There were no definite neurologic findings. A few râles were heard in the bases of the lungs posteriorly. Shortly after admission, she had a series of severe convulsions. Lumbar puncture yielded a bloody fluid. On centrifuging, the supernatant portion was clear and of a lemon yellow color. It did not clot on standing. The Wassermann reaction on this was negative, and cultures remained sterile. Nose and throat cultures were negative for diphtheria bacilli. Ophthalmoscopic examination revealed hemorrhages in both retinas. The patient continued to have convulsions, and died about twelve hours after admission. Before death she vomited "coffee ground" material.

The necropsy was held the next morning. When the skull was opened, the dura was injected. Beneath the dura on both sides, over the vertex, there was a flat blood clot, which was adherent in some areas to both the dura and the arachnoid. The dura was slightly thickened, and numerous petechial hemorrhages were present on its inner surface. There was some blood beneath the arachnoid. The thymus was rather large, and contained collections of fluid blood in both lobes. There was congestion of the bases of both lungs. Microscopically, the dura showed hemorrhages on its inner surface and evidence of a mild chronic inflammation. The anatomic diagnosis was internal hemorrhagic pachymeningitis.

9. Goepfert: *Jahrb. f. Kinderh.* 61: 51, 1905.

10. D'Espine: *Cor.-Bl. f. Schweiz. Aerzte.* 45: 1590, 1915.



CASE 3.—R. L., a boy, aged 1 year, was admitted, Sept. 28, 1921, because of paralysis of the left side following a fall. Three days previously the patient fell from a table. He cried a great deal, but showed no untoward symptoms, and the mother noticed no local injury. The next day he was standing by the door and fell, striking the right side of his head posteriorly. This fall was immediately followed by a convulsion, which lasted an hour. The left side of the body was thereafter paralyzed, and he did not regain consciousness. He vomited several times. The history brought out the fact that following birth he had been blue for several days, and was said to have had pneumonia. He was breast fed for three weeks, and was then given dilutions of raw milk. No orange juice had been given. He had gained regularly in weight, and had always been well except that for the past month the stools had been rather frequent.

The patient was a well developed and nourished child with excellent color and turgor. He weighed 7.5 kg. There was a flaccid paralysis of the left side. The head was drawn to the right, and there was conjugate deviation of the eyes toward that side. The anterior fontanel was normal in size, and there was no bulging. A small area of edema and swelling was found on the right occiput. Both eyegrounds showed numerous hemorrhages. Roentgenograms disclosed no fracture of the skull nor evidence of scurvy or rickets in the extremities. The spinal fluid contained a small amount of fresh blood, probably due to trauma in withdrawal, as the supernatant fluid was clear after centrifuging. This fluid gave a negative Wassermann reaction. No fontanel puncture was made because the parents objected. Nose and throat cultures were negative for the diphtheria bacillus.

The next day he had at first muscular twitching, and then generalized convulsions, which lasted several hours. The temperature at this time ranged between 39 and 40 C. The white blood cells totaled 14,000. The urine was negative. The capillary permeability test was negative. Intramuscular injections of the parents' blood were given although the coagulation time was seven and one-half minutes.

Improvement began the next day and continued until he was discharged against advice, October 7. The temperature had dropped to normal, and he was taking his feedings. The retinal hemorrhages were less distinct at this time. A communication from the parents one month later stated that, although weak, he could move his left arm and leg, and vision was apparently normal.

The history strongly suggests that trauma was a factor in producing the acute picture of convulsions and paralysis in this case. The history relates two falls—one three days before the development of symptoms, and the other immediately before the appearance of the convulsions. It seems probable that the second fall was not responsible for the development of the convulsion, but was a part of the general picture produced as a result of the injury received at the first fall.

The history of birth hemorrhage is also very suggestive. The parents stated that the physicians in charge had time and again despaired of the infant's life because of the attacks of cyanosis and apnea that he had for several days after birth. A wrong diagnosis at this time is not uncommon. Since, however, no punctures were made, we can only conclude that the history strongly suggests that this patient was a victim of birth hemorrhage. If this is correct, then the field was prepared, and the first fall was the exciting cause of the pachymeningitis.

CASE 4.—L. S., a white boy, aged 4 months, was brought to the emergency ward of the Cleveland City Hospital, Aug. 20, 1922, after an accident in which he was thrown from an automobile. The mother stated that immediately afterward he was blue for a short time and that his head was "out of shape." Examination revealed a small contusion of the scalp, and a separation of some of the bones of the skull along the suture lines. He was unconscious for a few hours, and vomited nearly everything taken for twenty-four hours. Roentgen-ray examination revealed no fractures. No other symptoms were noticed, and he was discharged, August 24. Four days later the mother brought him to the Lakeside dispensary with the complaint that he had vomited and was

irritable on the preceding day. She insisted that his head was "out of shape." He was admitted to the pediatric service of Lakeside Hospital. More historical detail revealed that at the time of his birth the mother was in labor thirty-six hours and that instruments had been used. One sister was suffering from Little's disease.

On admission, the child's head measured 47 cm. in circumference, and his chest 45 cm. The lambdoid suture on the left and the coronal and frontosphenoid suture on the right measured about 0.5 cm. in width, owing to separation of the bones. The anterior fontanel was rather tense, but did not bulge. The temperature was 39 C. The knee-jerks were active, and that on the left was possibly slightly increased. Otherwise the child was in excellent physical condition, was being breast-fed, and weighed 8 kg. at the age of 4 months.

On puncture of the anterior fontanel to obtain blood, a yellow fluid was encountered which contained about one twentieth of its volume of red corpuscles. Twenty-five cubic centimeters was removed at this time. The fluid did not clot on standing, but a small pellicle formed. Shortly after this puncture the child seemed more comfortable, and smiled repeatedly. Ophthalmoscopic examination revealed normal eyegrounds.

The patient remained in the hospital for eighteen days without marked change in condition. Further examination of the retinas failed to reveal any abnormalities. Several more punctures of the fontanel were performed, and as much as 50 c.c. of fluid was withdrawn at one time without completely emptying the cavity. No convulsions were observed, and the fontanel never distinctly bulged, although a change in tension could be made out after the punctures. Fever was present throughout the entire stay at the hospital, and varied from 37.5 to 39 C. The laboratory work is summarized below.

The child was readmitted, October 6, because of vomiting, and enlargement of the head; symptoms which, according to the mother, had appeared rather suddenly in the preceding two days. The head was now 48.5 in circumference, and there was some bulging of the anterior fontanel and a fullness along the sutures. The temperature was 39 C., and the child was very irritable. The eyegrounds were normal, and there were no localizing neurologic signs. Puncture of the fontanel was immediately done, and 200 c.c. of yellow fluid was withdrawn. The temperature dropped somewhat, and the irritability became less marked. Because he was nursing and it was difficult for the mother to come to the hospital, he was discharged, October 10. He attended the dispensary daily thereafter.

October 16, the mother reported that he had vomited again and that there had been muscular twitchings. He was again admitted to the ward. He seemed much more ill now than before. The temperature was 39 C., and the leukocyte count, 37,000. On the next day he developed a swelling of the left side of the scalp which was thought possibly to be a cellulitis. There was a bloody nasal discharge. Culture produced no diphtheria bacilli. The spinal fluid was normal. Puncture of the fontanel was not done. At this time several mild convulsions were noted, and Cheyne-Stokes breathing was present for a short time.

Moist heat was applied to the swelling, and it quickly subsided. The temperature dropped to normal, and the child was discharged, October 20. Since that time he has reported to the dispensary, has shown no fever, the general condition has been good, and there has been no particular change in the condition of the head.

August 29, white blood cells totaled 25,100; hemoglobin, 70 per cent. Urine examination gave negative results.

August 30, white blood cells totaled 25,250; hemoglobin, 70 per cent.; red blood cells, 5,940,000; polymorphonuclears, 34 per cent.; lymphocytes, 60 per cent.; transitionals, 3 per cent.; large mononuclears, 3 per cent.; eosinophils, 0; basophils, 0.

August 31, the blood clotting time was 5 minutes, 15 seconds; bleeding time, 6 minutes, 20 seconds. The capillary permeability test gave normal results. Fluid from fontanel puncture contained, for each hundred cubic centimeters: calcium, 6.5 mg.; phosphorus, 5 mg.; potassium, 16.3 mg.; sodium, 311 mg.; protein, 0.133 per cent. The intracutaneous tuberculin test (1:1,000) was negative.



September 4, the intracutaneous tuberculin test (1:1,000) was negative.

September 5, the spinal fluid Wassermann reaction was negative.

September 8, the blood serum contained: calcium, 10.9 mg. for each hundred cubic centimeters; phosphorus, 5.7 mg.; protein, 7.79 per cent. Fluid from fontanel puncture contained: calcium, 7.2 mg. for each hundred cubic centimeters; phosphorus, 4.9 mg.; protein, 1.27 per cent.

September 13, fluid obtained by fontanel puncture contained protein, 1.85 per cent. The Wassermann test on this fluid was negative.

October 6, the blood clotting time was 4 minutes, 20 seconds; bleeding time, 5 minutes, 20 seconds. The blood serum contained: calcium, 9.7 mg. for each hundred cubic centimeters; phosphorus, 4.8. Fluid from fontanel puncture contained: calcium, 7.9 mg. for each hundred cubic centimeters; phosphorus, 5 mg.; protein, 2.4 per cent.

October 17, the white blood cells totaled 37,750. Urine examination revealed a faint trace of albumin.

There can be no question that in this case trauma was the deciding factor in producing the acute picture of pachymeningitis. It is even possible that the trauma sustained in the automobile accident was the entire cause of the development of this condition, since nearly ten days had elapsed between the accident and the finding of pathognomonic symptoms or internal hemorrhagic pachymeningitis. However, this conception cannot be considered certain, as the history contains the fact that the mother was in labor for thirty-six hours at the birth of this child, and that instruments were used. A further important point is contained in the history, namely, that an older sister is suffering from Little's disease, a condition due in most instances to brain hemorrhage at birth. The head on admission was misshapen, a condition which, according to the mother, developed directly and immediately as the result of the automobile accident. The mother makes the statement that when she picked up the child from under the overturned automobile the child seemed as if dead, and its head was out of shape. On admission there was noticed a separation, to a distance measuring approximately 0.5 cm., of the lambdoid suture on the left side, and of the coronal and frontosphenoid sutures on the right side. These changes were in all probability due to the direct effect of the accident and not to the development of a large collection of fluid within the skull.

CASE 5.—E. R., a colored boy, aged 2 months, was admitted to the outdoor ward of the Babies' Dispensary and Hospital, Sept. 11, 1922, because of convulsions. These began on the day of admission, and the mother said that he had previously been perfectly normal. The only thing of importance in the past history was that the baby was precipitated head first into the bucket before the physician arrived for the delivery. The baby was breast fed.

Examination revealed a well developed infant, weighing 5.2 kg. Intermittent convulsions lasting a few minutes each were observed. Between convulsions there was considerable spasticity of the extremities. The fontanel bulged slightly. The circumference of the head was 40 cm.; that of the chest, 38 cm. There were hemorrhages in the left eyeground; the right was normal.

September 13, the clotting time was 5 minutes and 30 seconds, and the bleeding time 4 minutes.

September 14, the serum calcium was 7.6 mg. for each hundred cubic centimeters, the phosphorus, 4.7 mg., and the protein, 5.8 per cent.

A puncture of the left side of the fontanel, made, September 15, yielded about 20 c.c. of bloody fluid. This contained about one tenth of its volume of red corpuscles. The supernatant fluid was yellow, did not clot, and gave a strong reaction for bile pigment. The child continued to have convulsions, and on the next day another puncture of the fontanel was performed and more yellow fluid withdrawn. After this procedure the fontanel was less tense. This fluid contained 3.6 per cent. protein, 6.3 mg. calcium and 5 mg. of phosphorus for each hundred cubic centimeters. The Wassermann reaction on this fluid was negative. The intracutaneous tuberculin test was negative.

The temperature on the third day after admission reached 39 C. and then gradually dropped to 38 C. September 21, lumbar puncture yielded a clear fluid, without cells or globulin, which gave a negative Wassermann test. On this day the clotting time was 6 minutes and the bleeding time was 4 minutes.

The infant continued to have convulsions at irregular intervals until the latter part of October. During the subsequent month, no convulsions have been observed, and there has been no spasticity or change in reflexes. The general condition was good, and he gained in weight. October 27, ophthalmoscopic examination revealed that the retinal hemorrhages had disappeared completely.

#### SUMMARY

1. Five cases of internal hemorrhagic pachymeningitis have been observed in this clinic within a period of three years. This corroborates the statements of Finkelstein and Rosenberg that this disease is more common in infancy than is generally believed.

2. From the standpoint of etiology in our cases, infections, especially syphilis and diphtheria, can be excluded in every instance except in Case 2, in which syphilis may by some be considered to have been a possible factor.

3. From the standpoint of etiology, a poor state of nutrition can be positively excluded in three of our five patients; two were exceptionally well developed and nourished infants, and the third was also in a good state of nutrition. The other two patients were in a very bad state of nutrition, but it is just as probable that this was the result, as that it was the cause, of the development of pachymeningitis.

4. From the standpoint of etiology, trauma can be implicated as a factor in four of the five cases. It would seem that subacute pachymeningitis from birth hemorrhage, rendered acute by further physical injury, would explain the development in some of our cases. In certain groups of infants, there may be a certain predisposition toward the development of pachymeningitis.

5. The prominent symptoms in these five cases which correspond with those described in the literature were:

(a) Retinal hemorrhages in four cases. In the one in which they were absent there was the largest collection of fluid in the subdural space.

(b) A positive fontanel puncture. This was obtained in the three cases in which it was performed. In one case a characteristic fluid was obtained by spinal puncture. In the fifth, puncture was not performed because of the attitude of the parents. As these two children were each about 1 year of age, and retinal hemorrhages were present, it is probable that a fontanel puncture, if made, would have given positive results.

(c) Convulsions. These were present in every case; but since convulsions occur as a result of other injuries and conditions, their appearance is suggestive but not pathognomonic.

(d) Bulging fontanel. This symptom was absent throughout the period of observation in three cases; and in a fourth the fontanel did not bulge until the second admission, when it bulged slightly; in the fifth case there was slight bulging on admission. In other words, the absence of a bulging fontanel does not speak against internal hemorrhagic pachymeningitis. A general state of collapse, or widening of the sutures, may be sufficient to counteract the encroachment on the intracranial space by the development of a pachymeningitic cyst.

(e) Enlargement of the head. This symptom was not definitely present in any of our cases. In only one case was there possibly some enlargement.



(f) Nasal discharge. This was present in three cases, and in two of these it was bloody in character. In one of these patients, however, the discharge did not develop the bloody character until long after marked evidence of the presence of a pachymeningitis had been observed. As no evidence of the presence of syphilis or diphtheria was found in any of our cases, it may be concluded that the nasal discharge was a coincidence or a result of the pachymeningitis, and not a symptom of an infection responsible for the development of this disease.

6. In addition, we made the following observations, which may possibly add to the present knowledge of the disease:

(a) In two of the cases in which the calcium content of the fluid obtained through fontanel puncture was determined, it was found to be decidedly lower than that of the blood serum; whereas the inorganic phosphorus content of the fluid and the blood serum was practically the same. Since these results are the same as the figures usually obtained by determinations on whole blood, it would seem logical to conclude that the fluid in these subdural cysts is blood, unaltered except for the solution or digestion of all or a part of the red corpuscles. This conclusion, however, is not supported by the amounts of sodium and potassium, which were the same as in serum; nor by the percentage of protein, which showed great variation.

(b) The coagulation time and the bleeding time were normal in the three cases in which the tests were performed.

#### CONCLUSIONS

1. Internal hemorrhagic pachymeningitis is more common in infancy than is ordinarily believed.
2. Trauma at birth or later, or both, seems to have been the most important etiologic factor in our cases.
3. Convulsions, retinal hemorrhages and a positive fontanel puncture form a pathognomonic symptom-complex in internal hemorrhagic pachymeningitis. A positive fontanel puncture alone may be considered pathognomonic, as may also retinal hemorrhages, provided the latter occur after the age of 3 months.
4. In any case in which symptoms indicate the presence of increased intracranial pressure or cerebral irritation, internal hemorrhagic pachymeningitis should be considered.
5. Marasmus or severely disturbed nutrition is not necessary for the development of internal hemorrhagic pachymeningitis, as three of our five cases occurred in well developed infants.

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**Plan to Decrease Blindness and Power Press Accidents.**—The American Engineering Standards Committee has formulated the first safety codes for power, foot and hand presses that have been prepared in America. While no national statistics of power press accidents are available, it is the opinion of safety engineers that the high speed punch or forming press is one of the most dangerous machines in industry, and that hundreds of fingers, hands and arms are cut off or mutilated in these machines every year. The National Committee on the Prevention of Blindness says there are approximately 15,000 persons in the United States who have been blinded by industrial accidents, which is almost 15 per cent. of the blind population of the country. Because of this, the U. S. Bureau of Standards cooperating with the War and Navy departments prepared an eye safety code, which for several years has been studied by the Engineering Standards Committee and has been revised by this body.

## POSTINFLUENZAL CHRONIC PNEUMONITIS

A CONDITION COMMONLY MISTAKEN FOR PULMONARY TUBERCULOSIS, AND FREQUENTLY FOR HEART DISEASE

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At a conference on tuberculosis which I recently attended, three papers dealing with the differential diagnosis of pulmonary tuberculosis from three different points of view were read. None referred to a condition which I have found most frequently mistaken for pulmonary tuberculosis among patients presenting symptoms suggestive of tuberculosis who have been sent to me for special examination. I refer to a chronic postinfluenzal pulmonary disorder of long duration. A semichronic pneumonic sequel of influenza was recognized just after the epidemic of 1918. But the disorder I refer to is found in patients who are presenting themselves now, four years and more after the epidemic, with a history of continuous pulmonary disease since that time.

Many of these patients have at one time or another been under treatment for supposed heart disease. All of them have been under more or less continuous treatment for supposed pulmonary tuberculosis ever since they had influenza, and were sent to our hospital with the diagnosis of probable pulmonary tuberculosis.

#### SYMPTOMATOLOGY

*General Condition.*—These patients all complain that they have not been well since they had influenza; they are tired and weak, and lack staying power and the ambition to work. Some of them have tried to work from time to time, but could not keep at it. They all give a history of medical care in hospitals and sanatoriums a good deal of the time since the epidemic.

Great loss of weight is unusual, but they are often underweight. They usually look fairly well nourished. Occasionally, there is a slight degree of emaciation. There is seldom any serious loss of appetite, and there is never the marked distaste for food sometimes seen in the tuberculous. Night sweats are uncommon. There is nearly always a marked degree of nervous irritability. The patients are easily excited, the condition being sometimes so severe as to interfere with their ability to make a living.

*Pulmonary Symptoms.*—Cough, slight or severe, continuous or intermittent, is always present. It is usually more troublesome in the morning and in damp weather. There is nothing especially characteristic about it. All patients raise some sputum, which may be slight in amount or abundant. Occasionally, the sputum is fairly abundant after a paroxysm of coughing, and then there will be no more for some time. There is a mild degree of bronchiectasis. Frequently, small amounts of blood or blood-tinged sputum are raised, but I have never observed a real hemorrhage, even a slight one, in these patients. There is nearly always pain or soreness in some part of the chest at times. There is nothing characteristic about the pain.

Wheezing, which is so marked in some patients that the condition is diagnosed as asthma, is absent in others.

*Cardiac Symptoms.*—All patients complain of shortness of breath and rapid and violent pumping of the



heart on slight exertion. Nearly all have attacks of dizziness, especially when excited or after sudden activity of one kind or another. Sharp pain, localized at the apex, or a dull ache over the precordia, especially after exertion, is common.

#### PHYSICAL EXAMINATION

*General Condition.*—The appearance of these patients gives no clue to their condition. Sometimes, they "look sick," they have a tired drawn expression and the skin has an unhealthy appearance; but, as a rule, they look pretty well.

*Lungs.*—Examination of the lungs yields a variety of findings, with changes slight in extent and character, or marked, and appearing to affect the whole of both lungs.

The chest usually shows no change in shape; but there are exceptions. I recall only one case in which there was infraclavicular and supraclavicular depression. I now have under observation one patient with a very marked "barrel chest."

The expansion of the lungs, so far as this can be judged by the motility of the chest on respiration, is usually good. In cases presenting pleural adhesions, the diaphragm or the whole lung on one side will sometimes show a diminished excursion.

Resonance may be good throughout; in some cases, there is even hyperresonance. In perhaps half the cases, there is some dulness over one or both bases behind. There may be a slight dulness at the apex; but usually the apexes show little or no change. Changes in resonance from day to day are sometimes observed.

The breath sounds are usually harsh, rough and noisy, and expiration may be prolonged. Sometimes, there is pleural thickening, and the breath sounds are distant. Spoken and whispered voice sounds show the corresponding change. No marked change in tactile fremitus can usually be found.

Noisy squeaks, and sibilant and sonorous râles are usually heard. The râles may be only at the bases, or may be scattered throughout the lung. It is unusual to find them confined to the apexes; but occasionally this is the case. It is very unusual to find the râles confined to one apex. I have never observed a case in which the burst, or shower, of medium moist râles, so typical of tuberculosis, could be heard at the apex persistently after expiratory cough. Occasionally, there is evidence of a slight friction rub on some spot at the base.

*Roentgen-Ray Examination.*—Sometimes there are apparently normal findings, but sometimes definite pleural thickening, corresponding to that found on physical examination, is reported. More commonly, the roentgenologist recognizes that the lungs do not look normal, but will not make a definite diagnosis. The reports speak of rather diffuse thickening, fairly extensive peribronchial thickening, dilatation of the entire bronchial tree, tortuous and interwoven bronchi, moderately thickened bronchi, small areas of increased density, infiltration of the lower lobes, mottling at the base, and moderate thickening of the hilum. They sometimes say that bronchitis cannot be ruled out, tuberculosis cannot be ruled out, or peribronchial tuberculosis cannot be ruled out. On two occasions, roentgen-ray diagnosis of possible tuberculosis at the base was made. In one case, roentgen-ray reports indicated findings suggestive of old conglomerate tubercles, but no evidence of active parenchymatous tuberculosis. On two occasions, the roentgen-ray diagnosis of pulmonary syphilis was suggested. The roentgen-ray findings vary

from time to time in the same patient. Different observers sometimes interpret the findings differently; but we almost never get a definite diagnosis of apical tuberculosis in the reports of these cases. A special expert study of the findings in this condition is much needed.

*Temperature.*—Usually, the temperature is about normal. In some cases, the afternoon temperature will occasionally rise a little above 99 F.

*Sputum.*—There is nothing characteristic about the sputum. Tubercle bacilli are absent. Pus cells are often abundant. Curschmann's spirals and Charcot-Leyden crystals have not been found. We have not found influenza bacilli. On one occasion, an organism resembling pneumococcus, which was pathogenic for mice, was found.

*Etiology.*—In all these patients the onset of the condition dates immediately from a severe attack of influenza—practically always complicated by pneumonia. The condition may, indeed, be described as a pulmonary involvement accompanying influenza which has never fully healed.

#### NATURE OF THE PATHOLOGIC PROCESS

As I have not seen any fatal cases, the pathologic process cannot be accurately described; but from the physical findings there must be pathologic changes of some sort in the lungs. The changes are rather diffuse; they may be confined to the bases, but rarely, if ever, to the apexes. Bronchitis may be in evidence. A slight degree of bronchiectasis is sometimes present. Emphysema is sometimes marked. Some degree of diffuse fibrosis may be present. Pleural thickening, especially at the base, is common.

#### TYPES OF THE DISEASE

In most of the cases all, or almost all, of the symptoms and signs described will be found to some extent. That is, we do not see pure cases of asthma, bronchitis, bronchiectasis, pleurisy, or effort syndrome. But a case usually falls into one or another group, according to the prominence of certain signs and symptoms, and may be described as of the asthmatic type, the bronchiectasis type, the bronchitis type, the effort syndrome type, or the type presenting chiefly pleural involvement.

#### COURSE OF THE DISEASE

There seems to be no great change in the condition from year to year, nor are there "ups and downs," so frequently seen in tuberculous patients, as the result of change of environment.

#### DIFFERENTIAL DIAGNOSIS

*Tuberculosis.*—The course of the disease seems more even than that of tuberculosis; the patients never seem to grow progressively worse. Toxic symptoms, if present, are those of effort syndrome and general nervous irritability, and are unlike those seen in tuberculosis.

The process almost never localizes in one or even in both apexes as in tuberculosis; when localized, the process is at the base; when diffuse and extensive, the changes involved are not so great or of the same character as in tuberculosis, so that it is usually easy to recognize that we are not dealing with tuberculosis. While the roentgen-ray findings are not usually clear and definite, at least they do not indicate definite apical tuberculosis. The absence of tubercle bacilli in the sputum on repeated examinations may be helpful.

But the most important points of evidence as to the proper diagnosis are (1) the history of severe influenza and pneumonia continued into a chronic, nonprogressive



pulmonary disorder; and (2) the entire absence of the burst or shower of fine to medium moist râles at the apex after expiratory cough, so characteristic of pulmonary tuberculosis.

*Heart Disease.*—Practically all of these patients exhibit the signs and symptoms of effort syndrome. Nearly all of them complain of dyspnea on slight exertion, palpitation, pain around the heart, and tachycardia. When, in such cases, a systolic murmur is heard—and this is common—with perhaps an occasional extrasystole, the physician not familiar with effort syndrome will often make the diagnosis of heart disease. But further examination will show the lively reflexes, tremors of extended fingers, marked respiratory sinus arrhythmia, excitability, and other evidence of nervous instability characteristic of effort syndrome.

I have never known one of these cases to be diagnosed as cardiac syphilis; but the symptomatology in those cases with prominent effort syndrome and less prominent pulmonary symptoms might suggest the possibility of this condition. In many of the cases, the second heart sound seems slightly prolonged and has a slight puffy quality along the left border of the sternum, especially toward the end of expiration, probably due to rapid reduplication of the second sound. The history of the case, the negative Wassermann reaction, and the absence of an aortic diastolic murmur and of any other evidence of syphilis, serve to rule out cardiac syphilis.

I have never found evidence of organic heart disease in any of the patients.

*Hyperthyroidism.*—The nervous irritability and tremor are sometimes prominent enough to lead us to determine the basal metabolism; but with no evidence of exophthalmos, thyroid enlargement or increased basal metabolism, hyperthyroidism can be ruled out.

*Asthma.*—Sometimes emphysema and wheezing are marked, and the patients have attacks which they describe as asthmatic. Three cases have recently been referred to me with the diagnosis of asthma. But the wheezing is more or less continuous; perhaps in mild form when the patient is quiet, and in severe form in attacks resembling asthma after too strenuous activity. These patients do not have the typical sudden and unexplainable attacks of asthma with periods of complete relief between attacks. They do not show sensitiveness to test proteins, and they do show the signs and symptoms already described which are not present in true asthma.

*Bronchiectasis.*—Some of these patients show the signs and symptoms of bronchiectasis; but the bronchiectasis is of a mild type, and evidence of other forms of pulmonary involvement is present.

#### INCIDENCE

It is difficult to make any definite statement as to the frequency with which this condition occurs. Figures as to the number of cases that I see<sup>1</sup> would probably give a wrong impression as to how common the condition is, for as chief of medical service of a large clinic, I have referred to me the more puzzling cardiac and pulmonary borderline cases in greater proportion than they occur in the general run of patients.

#### COMMENT

It is commonly stated that influenza predisposes to pulmonary tuberculosis. This may be true; but is it not possible that this belief is due to the confusion of

tuberculosis with the postinfluenzal nontuberculous, pulmonary conditions described in this paper? We all see cases of pulmonary disease in which the tubercle bacillus cannot be found in the sputum, and cases in which physical changes characteristic of pulmonary tuberculosis cannot be found in the lungs, which are, nevertheless, diagnosed as possible, or even probable, pulmonary tuberculosis. But in the case of a patient giving a history of severe influenza and pneumonia, preceded by good health and followed by chronic pulmonary disease, a diagnosis of pulmonary tuberculosis should not be made unless either physical or roentgen-ray findings show the definite characteristics of pulmonary tuberculosis, or the sputum shows tubercle bacilli. It is possible that pulmonary tuberculosis may attack a person suffering from this postinfluenzal pneumonic condition, so that the two conditions may be present in the same patient, or that pulmonary tuberculosis may immediately follow a severe case of influenza; but I have never seen this combination of conditions.

#### REPORT OF CASES

*CASE 1.—History.*—A man, aged 21, whose condition had been diagnosed in other hospitals as pulmonary tuberculosis, and who recently left a hospital with this diagnosis, was referred to us for treatment of the same condition. He had never had rheumatism, sore throat, scarlet fever or any venereal disease. He was always well until October, 1918, when he suffered a severe attack of influenza, which kept him in the hospital until the end of the year. When he left the hospital, he was tired and weak; his cough persisted, and he was raising considerable sputum, and sometimes blood. He grew steadily worse until February, 1919. He again entered the hospital, where a diagnosis of "abscess of the lung" and "pneumonia" was made. After four weeks, he was discharged; but, according to his statement, he had never been well since. He had tried to work from time to time, but always gave out. He had a persistent cough, and raised moderate amounts of thick, yellowish sputum and, on rare occasions, some blood. He was short of breath on slight exertion. His weight fluctuated; it was now a little below normal. His appetite had been fair, and he never had night sweats. Pain in the chest and palpitation were absent.

*Physical Examination.*—The patient was fairly well developed and nourished. His color was good; his skin, clear. The pupils reacted to light; the knee jerks were active; the extended fingers did not tremble. There was no clubbing of the fingers, no exophthalmos and no thyroid enlargement. The tonsils were small and not septic, and there was no cervical adenitis. The breath had a disagreeable odor. There was a slight deviation of the nasal septum, but the breathing space was sufficient. The teeth were in good condition.

The pulse was 68, regular and of good quality. Just outside and below the left nipple was an area over the chest wall rather more than half the size of one's hand that looked depressed. No point of maximal impulse of the apex could be felt or seen. On percussion, the left border of the heart was found 7.5 cm. to the left of the midsternal line, 2 cm. inside the nipple line. A blowing systolic murmur that did not mask the first sound could be heard, with maximal intensity over the base. After exercise, this systolic murmur became accentuated, but no diastolic murmur was evoked.

The lungs and the diaphragm showed good expansion. Resonance over both lungs was good. Respiration was harsh over both bases. There was no bronchial breathing. In both axillae, respiration had an emphysematous quality at both bases behind. Persistent fine and coarse râles could be heard after cough.

The temperature was never higher than 99 F. The Wassermann reaction was negative. The urine was normal. Thirteen sputum examinations had been negative for the tubercle bacillus. No influenza bacilli had been found in the sputum. A diplococcus resembling pneumococcus was found, which was pathogenic for mice. The blood pressure was 100 systolic and 64 diastolic.

1. I have seen three cases in the last two days; six cases in the last week.



*Roentgen-Ray Examination.*—The roentgenologist reported findings consistent with tuberculosis of the lower lobes or with pulmonary syphilis.

*CASE 2.—History.*—A man, aged 30, whose condition had been diagnosed as active pulmonary tuberculosis, myocarditis and asthma, was referred for examination about three weeks after leaving a tuberculosis hospital against medical advice. He had always been well, until August, 1918, when he had a severe attack of influenza followed by pneumonia, which kept him in the hospital two months. Since that time, he had never been well, and had done little work, spending most of his time in hospitals. He had had a cough, and had not been strong. He became short of breath after very slight exertion. He had dizzy spells, but he did not faint. At times, he had pain in both sides of the chest, in front and behind. He raised much sputum, which, he said, was sometimes blood-tinged. He had attacks of palpitation. He did not have asthmatic attacks.

*Physical Examination.*—The patient was small, but fairly well nourished. He had good color and looked healthy. The pupils reacted to light. The knee jerks were lively. He showed no exophthalmos and no thyroid enlargement. The tonsils had been removed. There was no cervical adenitis. The nasal septum was straight, and breathing space sufficient. The extended fingers did not tremble.

The pulse was 78, regular and of good quality. The apex impulse could be felt, but not seen, in the fifth space, 7 cm. to the left of the midsternal line, 1.5 cm. inside the nipple line, and inside the midclavicular line; dulness corresponded. There was no increase in dulness upward or to the right. No thrill could be felt. The heart sounds were of good quality. The pulmonic second sound was slightly accentuated. No cardiac murmurs were heard.

The lung expansion was good, and equal on the two sides. The percussion note was resonant over both lungs throughout, front and back on the two sides; in fact, there was slight hyperresonance. But the degree of resonance showed slight change from time to time. The breath sounds were very rough, harsh, and noisy throughout both sides. There was no marked change in fremitus. Throughout both lungs, during both inspiration and expiration, noisy squeaks could be heard. But there were no persistent moist râles after cough.

No marked changes were noted in the roentgen-ray examination of the lungs.

Many specimens of sputum had been examined, but tubercle bacilli had never been found.

Fever was not present. The Wassermann reaction was negative. The urine was normal.

*CASE 3.*—A man, aged 28, sent from another hospital to our hospital with a diagnosis of pulmonary tuberculosis, had been treated by his own physician for heart disease and bronchitis over a period of three years.

He had no "rheumatic" or syphilitic history. He was always well until he had influenza in 1918. Since then, he had been under medical care. He has not been able to hold a job because he could not work steadily.

He had been weak and tired, and had a cough. He raised a moderate amount of sputum, and sometimes, he said, a little blood. He complained at times of severe pains in the chest. He slept poorly. He became short of breath after climbing one flight of stairs. The heart pumped violently on slight exertion. From time to time, he had dizzy spells, but did not faint. He said that he was very nervous and easily excited. His weight had been about constant. He did not have night sweats. His appetite had been good.

*Physical Examination.*—The patient was slender and pale, with pale mucous membranes. The cheeks were sunken, and he looked tired. The pupils reacted to light. The knee jerks were very lively. There was no exophthalmos and no thyroid enlargement. The tonsils were not large or septic, and there was no cervical adenitis. The nose showed ample breathing space. The extended fingers did not tremble.

The pulse was 78, of good quality and regular. No point of maximal apical impulse could be felt or seen. The left border of the heart was in the fifth space, 8.5 cm. to the left

of the midsternal line, 1.5 cm. inside the nipple line. There was no enlargement upward or to the right. The great vessels were not enlarged. The heart sounds were not very forcible. With certain phases of respiration, a short systolic murmur could be heard. There was no diastolic murmur. The aortic and pulmonic sounds were of about equal intensity. The second sound was not reduplicated. Systolic pressure was 120; diastolic, 85.

The motility of the lungs was good, and equal on the two sides. The percussion note was slightly dull at both apices behind, and at both bases, especially the left, behind. There was no marked change in fremitus. The breath sounds were harsh over both apices, and were distant at both bases, especially the left, behind. Inconstant, coarse, sibilant râles could be heard over both upper lobes. But there were no persistent moist râles after cough. The findings showed change from time to time.

Many examinations had been made of the sputum; tubercle bacilli were never found. Roentgen-ray examination showed no marked change in the lungs. The Wassermann reaction was negative. The urine was negative. In the last few months, the temperature had rarely been a shade above 99 F.

*CASE 4.*—A man, aged 24, sent to the hospital with a diagnosis of heart disease and bronchial asthma, who gave no "rheumatic" or venereal history, had never been ill until four years previously, when he had a severe attack of influenza. He had never been well since. After the attack, a cough remained, and the patient raised a moderate amount of sputum. One day, during a violent coughing spell, he raised blood or blood-tinged sputum. He was very short of breath. Almost every night, he had attacks of wheezing, and became "choked up," so it became necessary to sit up in bed. From time to time, he had sharp pains through both sides of the chest. His weight remained about constant. He had never had any rise of temperature while in the hospital.

*Physical Examination.*—The patient was well developed and well nourished, with good color. The knee jerks were lively. The extended fingers did not tremble. The pupils reacted to light. There was no exophthalmos, and no thyroid enlargement. The tonsils were not large or septic; the teeth were in good condition; there was no cervical adenitis. (He had a deviated septum, which was corrected by operation about a year previously.) His breathing space was sufficient. There was no clubbing of the fingers. There was no pulsation in the neck.

The pulse was 92, regular and of good quality.

The maximal impulse of the apex was felt, but not seen, in the fifth space, 7 cm. to the left of the midsternal line, 2.5 cm. inside the nipple line, 2 cm. inside the midclavicular line. Dulness corresponded. There was no extension of dulness upward or to the right. The vessels were not enlarged. A very short systolic murmur was heard at the base. After a little exercise, the third heart sound could be heard, but no diastolic murmur. The heart sounds were of good quality. Sinus respiratory arrhythmia was not marked. The second sounds were about equal in intensity. The second sound was not reduplicated. The systolic blood pressure was 110; diastolic, 60.

Roentgen-ray examination of the heart had shown enlargement of the right auricle.

There was a slight lag of the right chest on respiration. There was slight dulness over the right upper lobe in front and behind. Vocal and tactile fremitus showed no marked change. At the right base behind, expiration was slightly prolonged, and a few noisy râles were heard, which soon cleared up. There were no persistent medium moist râles after cough. At times, when the wheezing was bad, the lungs were full of sonorous and sibilant râles.

Skin protein tests were all negative.

The sputum had been examined many times, but tubercle bacilli were never found.

The Wassermann reaction was negative. The urine was normal.

The temperature remained normal.

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ALIMENTARY LEUKOCYTOSIS IN  
EIGHTY NORMAL MENA STUDY IN REFERENCE TO THE CRISE  
HÉMOCLASIQUE OF WIDAL \*HENRY M. FEINBLATT, M.D.  
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The statement by Widal, Abrami and Iancovesco,<sup>1</sup> in 1920, that leukopenia following a standard protein meal is to be regarded as a delicate test for the presence of hepatic insufficiency suggested the advisability of studying a series of postalimentary leukocyte curves in normal persons. As the original article by Widal and his co-workers reported only eleven control experiments, it seemed wise to try the test further on a larger group of healthy men.

Widal's test appears to rest on a sound experimental basis. It is known that the injection of a certain quantity of commercial peptone into the general circulation of a dog will promptly result in a crise hémoclasique. This syndrome is an evidence of upset of the colloidal balance of the blood, and is characterized clinically by leukopenia, a fall of blood pressure, hypercoagulability, and a change in the refractive index of the serum.

If after a heavy protein meal, samples of blood are taken either from the portal vein or from the general circulation, they will yield on chemical examination no trace of either proteose or peptone. However, by a biologic reaction, Widal was enabled to demonstrate the presence of these substances in the blood of the portal vein. For this purpose, he momentarily established an anastomosis between the portal vein and the inferior vena cava of a dog during the digestive period by a process similar to that utilized in making an Eck's fistula. Several minutes after the connection had been made, a typical crise hémoclasique resulted. This experiment was controlled by performing the same test on unfed dogs. In the latter animals, no crisis was observed. These studies show that the products of digestion which are normally absorbed into the portal vein, can, when they gain entrance into the general circulation, cause a disturbance of the colloidal balance of the blood analogous to that resulting from the direct injection of commercial peptone.

By withdrawing 40 c.c. of blood from the portal vein of a dog during the height of the digestive period and immediately introducing it into the saphenous vein of the same animal, Widal was able to induce an artificial crisis. Confirmation was added to this experiment by the work of Roch and Gautier<sup>2</sup> in 1922. As ascitic fluid is a portal transudate, these workers reasoned that the entrance of this fluid into the general circulation should produce a crise hémoclasique. This proved to be the case, the white count, in one experiment on a woman with Laënnec's cirrhosis, falling, forty-five minutes after the subcutaneous injection of the fluid, from 10,540 to 6,200 cells. The blood pressure likewise was lowered.

On the basis of his investigations, Widal formulated the hypothesis that the peptones, proteoses, and other

disintegrating protein substances found in the portal vein during the digestive period, are arrested and transformed by the liver. This action he designated as the proteopexic function of the liver.

To be consistent with the foregoing data, it seemed probable that the proteopexic function would be deficient in various hepatopathies, that this defect would be associated with a crise hémoclasique following alimentation in persons thus affected, and, finally, that our knowledge of this subject could be utilized clinically in devising a method for detecting insufficiency of the liver. Further research proved that these surmises were true.

The technic of the test proposed by Widal is very simple. The subject to be examined abstains completely from food for a period of at least five hours preceding the test. This detail is of great importance, as the ingestion of nitrogenous food, no matter how small the amount, interferes greatly with the reaction. A leukocyte count is made, and then the subject drinks

200 gm. of milk (a glass of milk, the exact amount not being essential). Subsequently, the leukocytes are counted at intervals of twenty minutes for a period of two hours. Normally, there is slight leukocytosis following the ingestion of the milk, and the count never falls below the pre-alimentary level. The occurrence of postalimentary leukopenia is considered pathologic and an evidence of hepatic insufficiency. This leukopenia, when present, usually appears in the

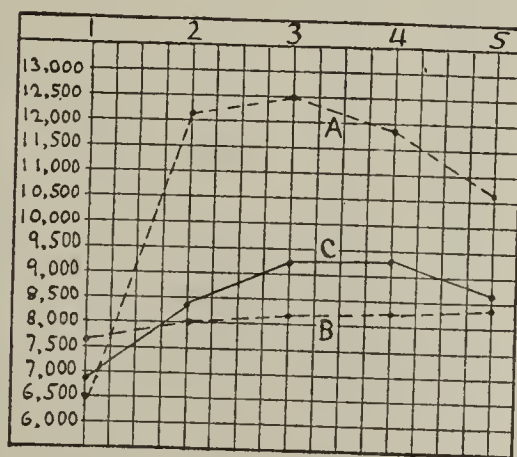


Chart 1.—Postalimentary leukocyte curves in eighty normal persons: 1, after five hours' fast and before test meal; 2, one-half hour after milk; 3, one hour after milk; 4, one and one-half hours after milk; 5, two hours after milk; A, maximal degree of leukocytosis; B, minimal degree; C, composite curve of leukocytosis in eighty normal persons. In every instance, some degree of leukocytosis was observed. The interrupted lines A and B represent the limits of variation; i. e., they are the curves of the cases in which the maximal and the minimal degrees of leukocytosis, respectively, occurred. The solid line C represents the composite curve of normal postalimentary leukocytosis, the average of the curves obtained.

first hour. In one of Widal's patients it was as late as an hour and a half in coming on. The other signs of the crise hémoclasique, viz., the fall of blood pressure, the increased coagulability of the blood, and the diminished refractive index of the serum, accompany the leukopenia. The last manifestation, however, is the most sensitive and the easiest to determine; it was therefore recommended by Widal that chief reliance be placed on this evidence in determining the existence of a crise.

That leukocytosis following the ingestion of a meal rich in proteins is the rule has long been known. But, if this physiologic phenomenon is to be employed as a foundation on which to build a clinical test, it is very essential to establish the fact that the response is uniform for normal persons. More specifically, it becomes obligatory to investigate thoroughly the physiologic reaction resulting when the protein dosage is reduced to the small quota contained in a single glass of milk.

Widal studied eleven normal persons and sixteen patients in whom the liver was intact, and found that, in all instances, the ingestion of a glass of milk, or, in fact, even of larger quantities of protein, left the subject free from a crise hémoclasique.

\* From the Clinical Laboratory, Department of Internal Medicine, Long Island College Hospital.

1. Widal, F.; Abrami, P., and Iancovesco, N.: L'épreuve de l'hémoclasie digestive dans l'étude de l'insuffisance hépatique, *Presse méd.* 28: 893 (Dec. 11) 1920.

2. Roch, M., and Gautier, P.: Choc hémoclasique chez les pleurétiques et les ascitiques par auto-injection du liquide de l'épanchement, *Presse méd.* 30: 209 (March 11) 1922.



It seemed to me that a test of this delicacy should be substantiated by a larger number of observations on normal persons. Leukocyte counts are subject to such great variations, depending on numerous factors, that it appeared beforehand as if alimentary leukopenia must surely occur in a certain definite percentage of healthy men. To record the leukocyte curves noted in

TABLE 1.—LEUKOCYTE CURVES IN EIGHTY MEDICAL STUDENTS AT INTERVALS OF ONE-HALF HOUR FOLLOWING INGESTION OF 200 GM. OF MILK

Subject	After 5 Hours' Fast	After Ingestion of 200 Gm. of Milk				
		½ Hr.	1 Hr.	1½ Hr.	2 Hr.	2½ Hr.
1	6,500	8,400	9,200	8,700	.....	.....
2	7,200	7,600	9,200	7,800	.....	.....
3	7,400	9,040	9,280	10,480	8,640	8,480
4	7,400	8,700	9,500	10,050	9,300	.....
5	7,200	9,400	10,300	8,300	.....	.....
6	7,300	8,200	8,900	9,200	8,400	.....
7	7,600	8,400	8,800	10,400	.....	.....
8	7,500	11,500	10,200	10,200	8,000	.....
9	7,300	8,200	9,100	8,200	.....	.....
10	7,300	7,900	8,200	7,900	.....	.....
11	7,100	7,900	8,400	8,900	.....	.....
12	7,200	8,600	8,900	9,000	.....	.....
13	7,100	8,500	8,700	9,400	.....	.....
14	7,400	9,200	9,450	8,750	.....	.....
15	7,200	9,400	9,600	8,400	.....	.....
16	8,200	10,300	10,900	10,200	.....	.....
17	7,100	9,800	10,500	8,000	.....	.....
18	6,300	9,600	10,200	7,500	.....	.....
19	7,500	8,300	8,900	9,400	8,700	8,200
20	7,200	8,800	10,240	10,400	8,800	.....
21	6,900	9,300	12,200	10,500	.....	.....
22	7,600	8,400	8,000	7,500	.....	.....
23	7,300	8,100	8,500	8,300	.....	.....
24	8,000	9,100	9,500	9,200	8,500	.....
25	7,400	9,200	9,800	10,200	9,600	.....
26	7,800	8,600	9,500	10,400	9,000	.....
27	7,400	8,000	9,200	10,800	9,000	.....
28	7,200	9,750	10,300	11,400	10,500	7,900
29	7,200	7,600	8,000	10,800	9,200	.....
30	7,100	8,500	9,200	8,000	.....	.....
31	8,400	9,200	12,000	10,000	.....	.....
32	6,700	7,200	8,340	9,400	8,600	.....
33	9,500	10,000	10,500	11,400	.....	.....
34	9,400	12,800	13,100	14,000	.....	.....
35	8,600	8,800	11,800	14,400	.....	.....
36	6,900	12,500	10,000	9,500	.....	.....
37	6,400	10,200	11,200	9,000	8,200	7,500
38	6,300	9,640	10,500	10,600	8,600	7,360
39	12,000	14,200	15,600	13,800	.....	.....
40	7,000	12,500	13,000	12,400	11,200	.....
41	7,400	9,900	13,000	7,700	.....	.....
42	7,500	9,680	10,400	10,600	.....	.....
43	8,000	9,600	10,000	11,200	12,300	.....
44	7,800	8,200	9,300	10,400	9,500	.....
45	7,500	8,300	9,000	10,600	11,180	9,800
46	7,020	8,600	10,050	9,200	8,780	.....
47	7,300	8,260	9,280	9,000	.....	.....
48	6,400	8,880	10,000	10,000	10,000	.....
49	7,200	9,900	11,400	12,600	10,300	.....
50	6,800	8,200	10,800	11,600	10,900	.....
51	7,800	8,300	9,600	10,200	9,000	.....
52	7,200	9,500	12,400	12,500	.....	.....
53	8,200	8,800	8,860	8,840	.....	.....
54	6,800	7,400	8,800	9,000	.....	.....
55	9,000	9,800	10,200	11,400	10,000	.....
56	7,200	8,200	8,800	9,200	9,000	.....
57	6,400	7,200	8,800	9,200	.....	.....
58	7,600	8,200	9,000	9,200	.....	.....
59	6,200	7,000	8,000	8,000	.....	.....
60	6,200	7,200	11,800	10,400	.....	.....
61	7,100	7,600	8,000	8,100	.....	.....
62	7,200	8,400	9,200	9,000	8,000	.....
63	8,400	8,900	9,100	9,200	9,250	.....
64	7,300	8,200	9,300	8,500	.....	.....
65	6,500	7,400	8,600	9,200	11,320	10,400
66	5,760	9,200	10,520	9,000	.....	.....
67	6,300	7,600	8,200	10,000	.....	.....
68	6,000	8,000	9,500	11,500	.....	.....
69	6,800	10,200	9,500	8,600	.....	.....
70	7,200	7,900	9,000	8,100	7,500	.....
71	8,200	9,600	9,600	10,400	10,000	.....
72	7,200	8,200	9,400	9,200	.....	.....
73	6,800	7,200	8,400	7,500	.....	.....
74	8,200	8,500	8,650	8,750	8,800	8,900
75	7,600	8,500	9,500	10,800	9,100	.....
76	7,800	8,400	9,200	8,200	.....	.....
77	7,400	8,000	9,200	10,800	9,000	8,600
78	7,800	8,000	9,500	8,400	.....	.....
79	7,900	8,400	9,200	10,400	9,500	.....
80	7,820	8,450	9,200	10,890	8,200	.....

normal persons following the ingestion of one glass of milk after five hours of fasting, and, if the curves proved to be consistent, to plot out a composite curve of normal alimentary leukocytosis, under the foregoing conditions, furnished the subject for the present investigation.

POSTALIMENTARY LEUKOCYTE CURVES IN EIGHTY NORMAL PERSONS

The present series of experiments was conducted on eighty presumably healthy medical students. In each instance, the subject had his breakfast between 7 and 8 a. m., and thereafter fasted until 1 p. m. At this time a total white count was made, and then the subject drank one glass of milk. Thereafter, white counts were made at intervals of one-half hour. The complete result of these counts is given in Table 1.

The outstanding feature of Table 1 is the high degree of uniformity in the leukocyte curves. Of the eighty normal persons tested, not one failed to show a response in leukocytosis; in other words, the crise hémoclasique, as judged by the leukocyte count, did not occur once.

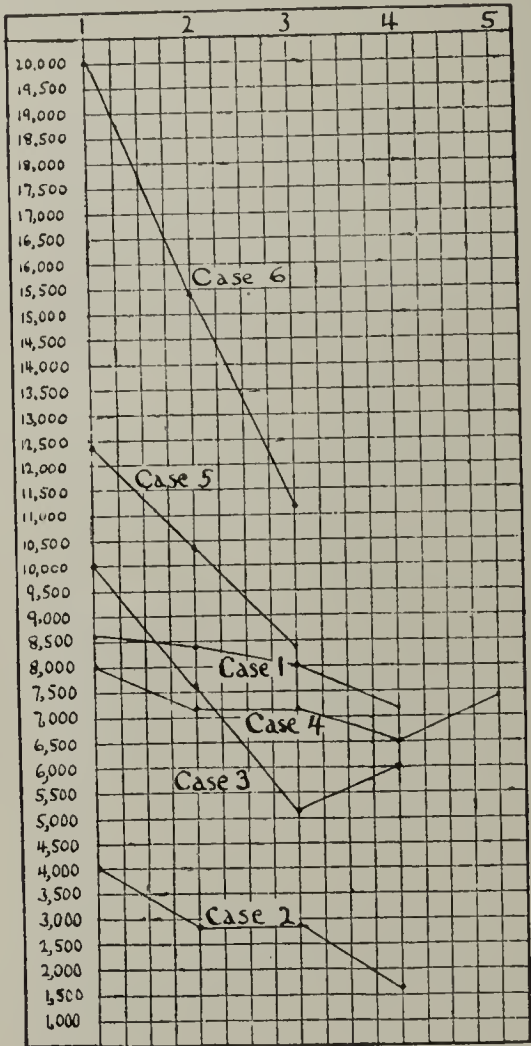


Chart 2.—Postalimentary leukocyte curves in six patients, showing the crise hémoclasique: The time intervals are the same as in Chart 1. Case 1, bronchial asthma; Case 2, Laënnec's cirrhosis; Case 3, cholelithiasis; Case 4, syphilis of liver, with ascites; Case 5, idiosyncrasy to milk; Case 6, Laënnec's cirrhosis, bronchitis.

is to be construed as a pathologic phenomenon. It does not touch on the problem of the specific interpretation of abnormal curves, or upon the possible occurrence of postalimentary leukopenia in pathologic states other than hepatic insufficiency.

While the present work was not primarily intended to include a study of pathologic material, it may not be

TABLE 2.—SIX CLINICAL CASES IN WHICH THE CRISE HÉMOCLASIQUE OCCURRED

Case	Clinical Diagnosis	Before Test Meal	After 200 Gm. of Milk			
			½ Hr.	1 Hr.	1½ Hr.	2 Hr.
1	Bronchial asthma.....	8,000	8,400	8,000	7,200	.....
2	Laënnec's cirrhosis.....	4,000	2,800	2,800	1,600	.....
3	Cholelithiasis.....	10,000	7,600	5,200	6,000	.....
4	Syphilis of liver; ascites.....	8,600	7,200	7,200	6,500	7,400
5	Idiosyncrasy to milk; sick with nausea, apparently due to test meal.....	12,400	10,400	8,450	.....	.....
6	Laënnec's cirrhosis; bronchitis.....	20,000	15,400	11,200	.....	.....



amiss to mention several clinical examples in which the test was used and the crise hémoclasique resulted. Table 2 gives these cases, and the curves are graphically shown in Chart 2.

## SUMMARY

The present study was undertaken for the purpose of investigating the normal leukocyte curve following the ingestion of one glass of milk after a period of fasting. Alimentary leukocytosis is the physiologic foundation on which Widal's test of liver function is built. While a decrescendo leukocyte curve is not the only element in the crise hémoclasique of Widal, the other components being a fall of blood pressure, increased coagulability of the blood, and a diminished refractive index of the serum, Widal expressed the opinion that a drop in the leukocyte curve is the most important part of the syndrome, and is sufficient basis for the diagnosis of hepatic inadequacy.

It therefore became essential to institute a careful inquiry into the physiologic results before attempting to interpret atypical curves. It was necessary to establish the fact that alimentary leukocytosis is uniform under normal conditions. To give a physiologic background on which to base pathologic studies, it appeared desirable to plot out a composite curve of normal alimentary leukocytosis, under the conditions of the test, together with the curves of the permissible limits of variation in normal persons.

Experiments with reference to their postalimentary leukocyte curves were conducted on eighty presumably healthy medical students. After five hours of fasting, a white cell count was made, then a glass of milk was ingested, and thereafter the leukocytes were counted at intervals of one-half hour. In every instance, some degree of leukocytosis followed the administration of the test meal; in other words, the crise hémoclasique, as judged by the postalimentary leukocyte curve, did not once occur in a normal person. There was considerable uniformity in the curves, and the difference between the two extreme variants (Chart 1) was not great.

The composite curve of normal postalimentary leukocytosis (Chart 1), as obtained by averaging the figures on the eighty normal subjects, gave counts of 7,379 white cells before the meal, and 8,856, 9,762, 9,779 and 9,191 white cells one-half hour, one hour, an hour and a half, and two hours, respectively, after the meal.

From the studies here reported, it appears safe to conclude that the normal response to the conditions of Widal's liver function test is uniformly one of leukocytosis.

616 Carlton Avenue.

**The Greatest Intellectual Revolution.**—We are in the midst of the greatest intellectual revolution that has ever overtaken mankind. Our whole conception of mind is undergoing a great change. We are beginning to understand its nature, and as we find out more, intelligence may be raised to a recognized dignity and effectiveness which it has never enjoyed before. An encouraging beginning has been made in the case of the natural sciences, and a similar success may await the studies which have to do with the critical estimate of man's complicated nature, his fundamental impulses and resources, the needless and fatal repressions which these have suffered through the ignorance of the past, and the discovery of untried ways of enriching our existence and improving our relations with our fellow men.—Robinson: *The Mind in the Making*.

## DUODENAL MOTILITY

RADIOGRAPHIC OBSERVATIONS FOLLOWING THE DIRECT  
INJECTION OF BARIUM INTO THE HUMAN  
DUODENUM

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Recent experimenters have shown that duodenal contents normally are regurgitated into the stomach toward the close of gastric digestion. This finding, together with the frequency with which reverse movements of barium are seen during radiographic examinations of the gastro-intestinal tract<sup>1</sup>—partial duodenal obstruction—prompted the present direct study of movements in the human duodenum.

It is not my purpose in this paper to set forth evidence either for or against any particular theory pertaining to the physiology of the duodenum. However, the results obtained by a specific method of duodenal injection will be presented and discussed in the light of modern theories. Whether or not the observations will be of use from a physiologic or clinical standpoint requires corroborative evidence; the amount of information to date is insufficient to warrant general conclusions.

## METHOD

A small duodenal tube with a metallic tip is passed into the stomach, the contents of the stomach are withdrawn, and the patient is then permitted to recline on the right side until the bile flows from the tube. The presence of bile is taken as an indication of the presence of the tube in the duodenum. Following drainage of the duodenum, the patient is fluoroscoped, and the position of the tube is determined. Then from 15 to 30 c.c. of a barium mixture is injected through the tube into the duodenum. Injections are often repeated, some patients receiving as high as 180 c.c. during the course of an examination. Tracings of the various positions of the barium are made on thin sheets of paper placed on the fluoroscope screen. These drawings, while less exact than roentgenograms, have the advantage of representing known conditions in the parts studied.

Disadvantages of the method are that: (1) Material is normally delivered to the duodenum only after passage through the stomach; (2) the presence of the tube, a foreign object, may of itself excite atypical motility; (3) the distention of the duodenum at a given point may give rise to motor activities which, though interesting, perhaps, are not normal to that viscus. For these and other reasons, inferences as to normal duodenal motility will not be attempted.

The method possesses the advantage of an unobstructed view of the duodenum throughout its entire length. The removal of gastric contents may or may not be of advantage; nevertheless, it removes the possibility of confusion because of the passage of material from the stomach into the duodenum.

1. The method here described has been of material service in determining obstruction by making possible the direct visualization of the duodenum throughout its entire course, thereby obviating difficulties encountered following the usual radiographic methods. Quain, in an article (*Chronic Duodenal Obstruction*, New York M. J. **116**: 651 [Dec. 6] 1922), which has appeared since the writing of this paper, complains of the usual radiographic methods in these words: "In the examination it is sometimes difficult to make out the exact location and conformity of the third portion of the duodenum. The stomach is usually ptosed, and after it is filled with the barium mixture, it conceals the duodenum in the anteroposterior aspect. Turning the patient sideways gives a better opportunity to visualize this part of the duodenum."



In presenting the data and throughout the discussion, such terms as peristalsis and antiperistalsis will not be used for the reason that these terms are accepted as having specific physiologic meanings. Perhaps such terms might justly be applied to the observed phenomena of the study, but simple descriptive words will suffice for the present needs and will thus prevent unnecessary confusion and possibly just criticism.

#### RESULTS

Results will be considered under the headings of (1) immediate results of barium injection; (2) reverse passage of barium from the point of injection to the duodenal cap and stomach; (3) forward passage of barium; (4) "to and fro movements" of barium in a limited portion of the duodenum; (5) injection of the jejunum, and (6) duodenal retention.

##### IMMEDIATE RESULTS OF DUODENAL INJECTION

Slow injection of from 15 to 30 c.c. of a barium mixture into the duodenum gradually increased the size of the shadow at the point of delivery. The shadow,

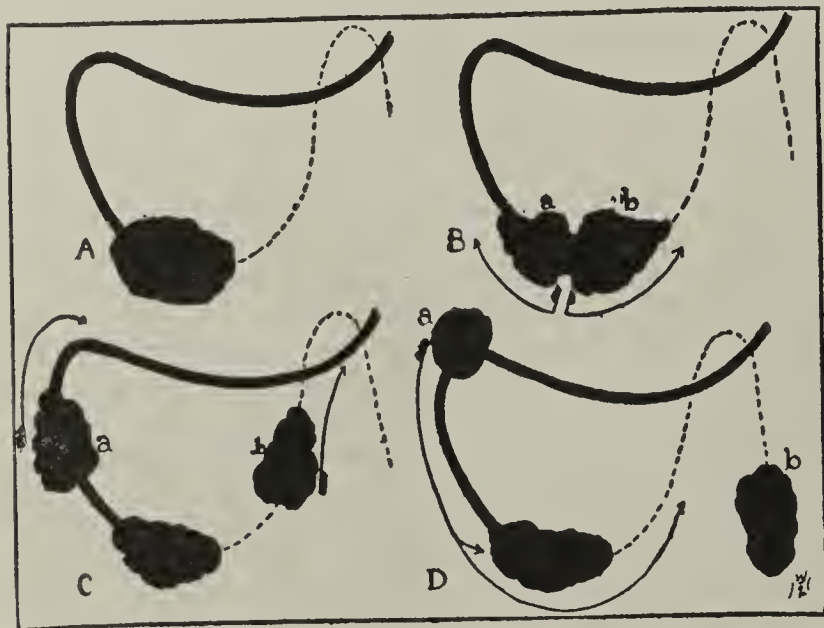


Fig. 1.—Schematic representation of the usual movements of barium following its injection into the human duodenum: A, local distention following injection; B, barium mass being divided; C, barium masses, *a* and *b*, passing from the point of injection, *a* toward the pylorus, *b* toward the jejunum; D, mass *a* resting in the cap region; *b* in the jejunum. The arrow from the cap region indicates the passage of barium from that region to the point of injection and to lower segments.

oval at first, gradually assumed an oblong shape as the injection continued. At the point of flattening of the oval mass the injection was discontinued, it being assumed that maximal lateral distention had occurred. Only sufficient barium was injected into the duodenum to cause moderate distention and present a bolus on which the duodenum might act.

In the majority of the cases the placement of barium within the duodenum was followed within a few seconds by constriction of the mass at the point of injection. This constriction resulted in the separation of two portions from the primary mass and their propulsion along both directions of the duodenum; the one portion passing toward the cap, the other toward the jejunum. Usually such movements did not completely empty the injected portion. This type of primary response was observed in seven of the thirteen cases included in this study (Fig. 1). A primary forward passage was observed in four cases. Reverse movements of barium occurred in two cases as the first motor response to duodenal injection. On several occasions, preceding the movements just described, the barium shadow was

partially divided and moved in opposite directions over short distances, from 2 to 3 cm., and later reunited at the point of division.

##### REVERSE MOVEMENTS IN THE DUODENUM

Barium was presented to the pylorus at some time during the examination of all the thirteen cases, and rested there for varying periods of time. In six cases, barium was passed from the point of injection into the stomach; in two of these cases, however, this occurred only after the injection of considerable quantities into the duodenum.

The injection of 15 c.c. of barium in Case 1, in which the tip of the duodenal tube lay within the cap, caused maximal distention. Barium did not pass into the stomach following this injection or at any time during the examination. The cap contained barium thirty minutes after the primary injection in spite of the fact that small amounts had been repeatedly withdrawn and delivered by progressive, forward waves to the jejunum (Fig. 2 A). Reverse movements of barium were not observed in any portion of the duodenum.

Maximal distention and motor activity did not occur in Case 2 until approximately 40 c.c. of barium had been injected into the duodenum. The first observed movement almost completely severed the mass and forced the two portions away from each other. The central portion was passed with considerable force toward the pylorus, and came to rest in the cap. At times the reverse movements of barium from the point of injection followed each other in rapid succession, forcing material in tumultuous masses into the cap region. So marked were these movements which piled material against the pylorus that it appeared as though that structure must give way to prevent serious consequences (Fig. 2 C). The pylorus, however, did not yield for a considerable time; then a small amount of barium was observed in the stomach. Reverse movements were observed in this case only in that portion of the duodenum cephalad to the tip of the tube.

Injection of the duodenum in Case 3, approximately 19 cm. below the pylorus, was followed by nearly complete division of the mass. The proximal portion was delivered to the cap by one continuous, rapid movement; this portion came to rest in the cap long before the distal portion reached the ileum. From time to time, following the initial movement of barium along both directions of the duodenum, small portions were separated from the mass at the point of injection, and passed to the cap. Usually these reverse movements occurred after a series of deliveries from the cap to the point of injection. On several occasions there occurred rhythmic alternations in the forward and reverse passage of material along the descending portion of the duodenum.

Similar reverse movements of barium were observed in all of the cases save the one in which injection of the cap occurred. In three cases, marked reverse movements occurred in the terminal portion of the duodenum. In several instances, barium was passed toward the cap only after the injection of a considerable amount into the duodenum. Reverse movements in those cases were followed by forward movements, the result being that material passed toward the cap was immediately returned to lower segments.

That reverse movements of barium in the duodenum, as here described, are not entirely the result of the particular method employed is evidenced by the pres-



ence of similar movements in persons examined by the usual roentgenographic methods. For instance, reverse movements were observed throughout the course of the duodenum in Cases 4, 5, 6, 7, 8, 9, 10, 11, 12 and 13, examined after the drinking of a barium mixture (Fig. 3).

#### FORWARD MOVEMENTS OF BARIUM

Progressive, forward movements of barium, as observed in this study, began either at the point of duodenal injection or from the cap region after its filling by the reverse passage of barium from the point of injection. In brief, the passage of barium caudad from those two points was identical with the passage of barium through the duodenum of persons who had not received the duodenal tube. However, there was this difference: In the usual preparation, movements of barium began in the cap region and progressed along the duodenum, whereas, following direct duodenal injection, the first forward movement began at the point of injection, a point from 4 to 18 cm. distal to the pylorus. Movements of barium were caudad only in Case 1, in which the tip of the duodenal tube rested in the cap. When the point of the tube lay distal to the cap, twelve cases, the first progressive, forward movement apparently began at the point of injection. Later, following reverse filling of the cap, progressive movements from that region delivered barium to the point of injection, at times through the region of injection to more distal positions (Fig. 1). In certain instances—four cases—the first movement of barium following injection of the duodenum was a forward passage into the ileum; in other instances, barium was passed forward various distances and there retained until succeeding movements either carried it forward to the ileum or reverse movements delivered it back to the point of injection or to the cap.

I have not observed movements of barium from the cap which indicate that material simply drops or is siphoned from this region. My observations to date on this point, briefly, are these: Material remains in the cap as a rounded mass for an appreciable period of time following its distention, either directly by injection or indirectly by the passage of material from the stomach or from the duodenum by reverse movements. The first indication of change in the mass is the widening of the distal conical portion. This widening increases as barium rushes through it to fill a portion of the proximal duodenum. At no time does this point of opening reach the diameter of the mass collected below the cap. Following the collection of material in the upper duodenum and apparently before the mass passes forward, its continuity with that in the cap is severed. The portion thus cut off is moved progressively forward.

The present method of study gives no information pertaining to tone changes in the duodenum as affected by gastric motor activity, or evidence as to the origin

of waves which pass barium away from the point of duodenal injection and the cap region. The only information establishable is that distention of the duodenum usually is followed by division of the mass and its passage along both directions of the duodenum; also that the filling of the cap by reverse movements of barium from the point of injection is followed by the passage of material forward from that region.

#### "TO AND FRO MOVEMENTS" IN THE DUODENUM

Movements of barium resembling those described by Cannon<sup>2</sup> as rhythmic segmental contractions were frequently observed following duodenal injection.



Fig. 2.—Various positions of duodenal tube following its passage into the small bowel, and the various types of activity noted after direct duodenal injection: A (Case 1, Oct. 4, 1922): direct injection of duodenal cap; numerals indicate various positions taken by a bolus during its passage from the cap; all observed movements of barium were away from the cap; barium did not enter the stomach. The shape and course of the duodenum should be noted, as compared with the other five figures. B (Case 14, Nov. 4, 1922): a, pendular movements of barium immediately following duodenal injection; b, tracing showing separation of the barium mass and its passage along both directions of the duodenum. During the passage of the distal bolus into the jejunum, the patient complained of dizziness and faintness. C (Case 2, Oct. 16, 1922): a, the close of a series of reverse movements of barium which completely emptied the ascending duodenum into the cap region; b, barium mass being propelled from the cap region following cap distention by reverse movements from the point of injection. D (Case 3, Nov. 1, 1922): a, injection of the jejunum; the point of injection and the amount of barium along the course of the duodenum to the cap region and in the stomach should be noted; b, barium being delivered in small amounts to the cap region from the inferior flexure. The positional changes of the tube and barium in a and b may be noted. E (Case 15, Nov. 13, 1922): a, position of coiled tube in the duodenum and the passage of barium to the cap following duodenal injection; a similar coiling of the tube occurred in two other cases; b, opposite positions assumed during a period of "to and fro" movements of barium; the tube had been straightened out prior to this observation. F (Case 16, Nov. 15, 1922): a, primary forward movement of barium following duodenal injection; b, complete severance of injected mass and passage of barium along both directions of the duodenum; the shape and position of the cap in this instance should be noted.

Similar movements were observed during regular radiographic examinations. Such movements were characterized by a more or less complete division of a

2. Cannon, W. B.: The Mechanical Factors of Digestion, New York, 1911.



barium mass at several points, this division throwing the barium into segments. Later these oval masses divided, causing the two portions to move in opposite directions to form a second series of oval masses, the central portions of which occupied the positions of previous constriction. Such movements did not carry material forward or backward save over very limited areas.

The injection of 20 c.c. of barium into the duodenum in Case 14 was followed by marked rhythmic "to and fro movements"; the barium was repeatedly divided and redivided. In this case, however, the barium remained confined to the region of injection for possibly three minutes before material was passed along either direction of the duodenum (Fig. 2 B). It may be of interest to state that a forward movement from the point of injection in this case was always accompanied by a simultaneous movement of barium toward the cap. On three occasions subsequent to such movements the examination had to be discontinued because of faintness and dizziness of the patient.<sup>3</sup>

The segmental type of movement was best observed in the region of duodenal injection and portions caudad. However, in Case 2 it appeared as though this type of motility was present in the descending limb of the duodenum. Here barium was being rapidly moved toward the pylorus; at the same time it appeared as though the barium, although progressing upward, was repeatedly divided into segments. Evidently the entire movement was not the result of simple division of the barium mass, for the end-result was engorgement of the cap and complete clearance, save for the presence of the tube, of the descending portion of the duodenum.

#### INJECTION OF THE JEJUNUM

In one patient, Case 3, the tip of the duodenal tube passed into the jejunum (Fig. 2 D). Injections at this point were followed by passage of barium to the stomach and to the ileum. The details of the various movements observed need not be given, for they were similar in all respects to those already described.

#### DUODENAL RETENTION

More or less prolonged retention of barium at the point of duodenal injection occurred in all cases included in this study. Retention of barium in the cap, however, usually outlasted retention in other portions of the duodenum. For instance, in Case 2, distention of the duodenum in the region of the inferior flexure resulted in the rapid accumulation of barium in the cap and the appearance of barium in the ileum. The patient was radiographed as quickly as possible after injection, and it was observed that the cap remained greatly distended while only a small amount of barium remained about the lower end of the duodenal tube. Barium was still in the cap, thirty minutes later.

The movements of barium which nearly emptied the duodenum and which were associated with faintness of the patient in Case 14 were not sufficient to evacuate the cap. In other instances the cap filled promptly and then, by a loss of small portions which were passed caudad, became completely emptied. The absence of barium from the cap was never of long duration while material remained in the duodenum; withdrawals from and presentations to the cap continued until such a time as the forward movements of barium completely emptied the duodenum.

The fact that barium often remains in the cap for some time after complete gastric clearance is evidence that cap retention is not entirely due to the present method of investigation. Retention in the region of the inferior flexure of the duodenum is often observed during routine radiographic examinations. A degree of retention at this point comparable to that observed by the present method, however, would be looked on as indicative of a pathologic condition. Most often retention occurred in the loop formed at the inferior flexure or in that portion beyond the flexure and to the right of the vertebral column.

Whether or not the tendency to retention in the region of the inferior flexure is the result of the method employed, I am unable to say. Up to the present, attempts to inject the last portion of the duodenum have been unsuccessful (Fig. 2 E). In the one instance of jejunal injection, barium was rapidly moved along the intestine in both directions; that portion sent cephalad came to rest in the inferior flexure, the cap and the stomach. It would seem from the present study that the mechanics of the duodenum is more responsible for the retention in the inferior flexure than the result of disturbed physiology. The average duodenum has its lowest point at the inferior flexure; the portion reaching the duodenojejunal flexure rises rather acutely. The condition is somewhat analogous to the mechanics of the water-trap stomach; material must be forcibly lifted against gravity from the lowest point. If such an explanation suffices, it is nevertheless difficult to understand the persistent retention in spite of the marked degree of activity of this region. There was

no evidence of duodenal obstruction in any of the cases studied. In the one instance of partial obstruction of the ileum—Meckel's diverticulum—there was the usual retention at the inferior flexure, although barium passed evenly through the duodenum and jejunum.

#### COMMENT

According to the works of Kussmaul<sup>4</sup> and of Rehfuss, Bergeim and Hawk,<sup>5</sup> there is a flow of duodenal



Fig. 3.—Duodenal retention and reverse movements of barium in two patients following the drinking of a barium mixture: A (Case 17, Dec. 1, 1922): a, barium being passed from the region of the inferior flexure of the duodenum into the cap region during a quiescent phase of the antrum; b, "to and fro" movements of barium in the duodenum during a positive phase of the antrum. The patient invariably complained of a crawling sensation whenever marked "pendular," or reverse movements, occurred in the duodenum. B (Case 18, Nov. 17, 1922): duodenal retention and reverse movements of barium as observed after the drinking of a barium mixture. The positions of retention and reverse movements of barium in these two cases are similar to those observed following duodenal injection (Fig. 2).

4. Kussmaul, A.: Die peristaltische Unruhe des Magens, nebst Bemerkungen über Tiefstand und Erweiterung desselben, das Klatschgeräusch und Galle im Magen, Samml. klin. Vortr. (Volkmann's), 1880, pp. 1637-1674; cited by Alvarez (Footnote 16).  
5. Rehfuss, M. E.; Bergeim, Olaf, and Hawk, P. B.: Gastro-Intestinal Studies, I, The Question of the Residuum Found in the Empty Stomach, J. A. M. A. 63: 11-13 (July 4) 1914.

3. I hope to consider specifically, in a subsequent publication, the relation of duodenal motility to psychic states.



contents back into the stomach at the close of a meal or during starvation. It appears that this process may be accentuated by the taking of fats<sup>6</sup> which, according to Cannon,<sup>7</sup> impairs the tone and motility of the stomach. Possibly the fatty acids split off by the pancreatic juices stimulate the bowel.<sup>8</sup>

Numerous observations are on record showing that the injection of the duodenum through a duodenal fistula causes a retardation or cessation of gastric evacuation because of the high state of tonicity produced in the pylorus.<sup>9</sup> Cannon<sup>2</sup> noted that distention of the colon with large enemas resulted in the passage of material into the small bowel. Heile,<sup>10</sup> on the other hand, demonstrated that stimulation of the colon slowed the passage of material through the ileocolic sphincter: a condition similar to that observed in the stomach following the injection of material into the duodenum through a fistula. It is of common knowledge that rapid distention of the jejunum—jejunal feeding—often results in nausea, regurgitation and at times vomiting.<sup>11</sup> Also, it is common to find the ileum containing barium after the giving of a barium enema. According to Quimby,<sup>12</sup> such a procedure may result in the passage of material to the duodenum.

Cannon,<sup>13</sup> Engelmann<sup>14</sup> and Kretschmer<sup>15</sup> have shown that stimulation of smooth muscle in a tubular organ results in a contracted tonic ring from which waves are given off in both directions.

According to Alvarez,<sup>16</sup> the rhythmicity, irritability, reaction time and latent period of the gastro-intestinal tract are graded from the stomach—lesser curvature—to the anus: the gradient theory. Raising the gradient in any portion of the intestine, according to this theory, results in the passage of waves in both directions from that point. As stated by this author,<sup>17</sup> in referring to the closure of the pylorus and retardation of gastric evacuation following injection of the duodenum through a fistula: "It is not surprising that food put into the middle of the tract tends to go both ways." To explain the normal regurgitation of duodenal contents into the stomach at the close of gastric digestion, the theory assumes that "the tone of the stomach drops below that of the digesting bowel."

The results of the present study appear to offer considerable support to the gradient theory. As previously considered, duodenal injection, the stomach having previously been emptied, results in a constriction over the mass injected and the passage of material from that point along both directions of the duodenum. Apparently, therefore, distention of the duodenum in some way raises the tone (gradient) sufficiently high to excite motor activity, i. e., contracted tonic ring,

from which waves are given off in both directions. In my series of cases, the reverse movements completely filled the cap; at times, material was passed into the stomach. The tenacity with which barium remained in the cap was one of the most remarkable single observations of the present study.

On the basis of the gradient theory it must be assumed that the pyloric sphincter in my cases, immediately following duodenal injection, possessed a tone higher than the duodenum which forced barium against it. Perhaps, as suggested by Alvarez, the wave delivering barium to the cap region was preceded by a conduction wave which, because of the low threshold of irritability of the pylorus, excited it maximally prior to the arrival of the delivering wave. The festoon-like arrangement of the relatively few contractile fibers of the cap region may in part account for the degree of distention of this region and the inability of the active duodenal fibers to pass barium into the stomach. Perhaps, had the duodenum of my patients been more highly distended at the time of the primary injection, material might have been passed directly into the stomach in each case. However, it was deemed advisable to prevent overloading of the duodenum and the possibility of nausea and vomiting. The high initial tonicity of the pylorus evident in the majority of the patients ultimately gave way as material was delivered to the jejunum and ileum for, as previously mentioned, barium was observed in the stomach from twenty to forty minutes after the initial injection. This phenomenon, namely, barium in the stomach following duodenal injection, may be in the main the result of similar activities which carry duodenal contents into the stomach at the close of a normal gastric digestive phase. In other words, it might be assumed that the tone of the stomach had dropped below that of the more or less loaded small bowel.

The result of the present study shows that barium may be passed over a given segment of intestine in opposite directions. Distention of the cap by reverse movements in no instance prevented material from being passed from this region by progressive movements to the point from which it originally came, or to lower segments. Hence, it appears that the gradients can be altered rather rapidly in the duodenum. Perhaps distention of the cap beyond a certain point is sufficient to produce a gradient in the upper duodenum of greater magnitude than that at the point of primary injection; at any rate, barium continues to pass back and forth over the descending portion of the duodenum until finally the "down hill gradient" clears the viscus of contents.

Distention—placing a mass directly within the duodenum—is followed by a "tonic contraction" over the point of distention, and the passage of material along both directions of the viscus. However, in the present series of observations this point of primary distention and motor response tends to remain more or less filled; at least, it is the last portion of the duodenum, save the cap, to become free of barium. If distention increases the gradient at this point, it appears that the same region should be the first to become rid of its contents. This, as previously stated, does not occur. Possibly barium tends to remain at the point of injection, inferior flexure, because of the mechanics of this portion; it is the lowest portion of the duodenum. That mechanical factors may be at least partially responsible for retention at this point is evidenced by the fact that material delivered to the duodenum from the stom-

6. Boldireff, W.: Die periodische Tätigkeit des Verdauungsapparates ausser der Verdauungszeit, *Zentralbl. f. Physiol.* **18**: 489-493, 1904.

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11. Wegele, C.; Gross, M. H., and Held, I. W.: *Therapeutics of the Gastro-Intestinal Tract*, New York, Rebman Company, 1913.

12. Quimby, A. J.: Roentgen Interpretation of Intestinal Conditions, *Am. J. Roentgenol.* **1**: 399-403, 1914.

13. Cannon, W. B.: Further Observations on the Myenteric Reflex, *Am. J. Physiol.* **23**: 26-27, 1908.

14. Engelmann, T. W.: Zur Physiologie des Ureter, *Arch. f. d. ges. Physiol.* **2**: 243-293, 1869.

15. Kretschmer, H. L.: The Retrograde Movement of Ureteral Calculi, *J. A. M. A.* **71**: 1355-1359 (Oct. 26) 1918.

16. Alvarez, W. C.: *The Mechanics of the Digestive Tract*, New York, Paul B. Hoeber, 1922.

17. Alvarez: *The Mechanics of the Digestive Tract*, p. 101.



ach often lags at the inferior flexure or leaves a portion of its mass after the forward wave has delivered material to the jejunum. It appears that the gradient does not become greatly reduced at the point of retention for the reason that it is from here that barium is passed toward the cap and jejunum. Hence, it may be tentatively assumed that a portion of the duodenum may show high degrees of activity and at the same time retain material for a considerable period of time—a condition somewhat similar to gastric retention and discharge. The present observations, however, lend no positive proof that the gradient is either raised or lowered at the point of retention. The observations simply show that material may continue to be passed from a region of distention along both directions of the duodenum without immediate clearance of the segment distended.

#### SUMMARY AND CONCLUSIONS

1. Barium in quantities of from 20 to 60 c.c. may be injected directly into the duodenum without causing distress, the stomach and duodenum having previously been emptied of their contents.

2. The first observed movement of the barium following injection into the duodenum is a more or less complete division of the mass at the point of greatest distention.

3. Following the primary partial division, barium is usually passed along both directions of the duodenum, the central portion being delivered to the upper duodenum or cap, the distal portion to the jejunum.

4. Reverse movements of barium sooner or later result in the complete filling of the cap, at which point barium may rest for a long period of time.

5. Following distention of the cap by reverse movements, barium is passed forward by progressive movements which, at times, carry material through the point of original duodenal distention to lower segments.

6. Barium may be delivered from the point of distention to the stomach as the result of reverse movements. In the majority of instances, barium is passed into the stomach only after several injections of the duodenum.

7. Rhythmic segmental and pendular movements of barium occur in the duodenum.

8. Barium tends to rest at the point of injection—inferior flexure. This region is the usual point of injection. In one instance of jejunum injection, marked reverse movements resulted in the lodgment of barium in the cap, stomach and inferior flexure.

**Child Labor on Truck Farms.**—The migration of hundreds of families from Philadelphia and other Eastern cities for work on truck farms has a serious effect on the schooling of the children in these families, according to a survey made by the U. S. Department of Labor through the Children's Bureau. The findings of the survey show that 71 per cent. of a large group of Philadelphia children who belonged to migratory families were retarded. Twenty-two per cent. were from three to six years below normal grades. The attendance department of the Philadelphia schools estimates that over 2,500 children leave that city before the close of school each spring because of farm work undertaken by themselves or their parents. The migrations, which begin as early as February, reach their height at the strawberry season, and the majority of children do not return to school till the last of October. Many, working in the cranberry bogs, remain until later. The long absences in the autumn not only affect the child's progress in his studies, according to the report, but are probably conducive to truancy and to absence for other unlawful reasons.

## Clinical Notes, Suggestions, and New Instruments

### DIVERTICULUM OF BLADDER IN THE INGUINAL CANAL

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Diverticula may take their origin from any part of the urinary bladder, although by far the majority spring from the lateral walls, not far from the ureters. Their pathogenesis is still unknown. That some are congenital is evidenced by an analogous condition in fetal bladders, as shown by Watson.<sup>1</sup> However, it is generally believed that they are acquired secondary to some congenital defect in the bladder wall.

The possibility of encountering bladder tissue in the performance of inguinal hernia has been frequently stressed. In a fairly exhaustive review of the literature, I have failed to find a case report of a bladder diverticulum in the inguinal canal.

#### REPORT OF CASE

Mrs. S., aged 30, a sextipara, whose father was alive, and whose mother died of cancer at 37, had been suffering from so-called bilious attacks every six to eight weeks since childhood. The general habits were good; she urinated about seven times daily and twice at night. The menstrual history was normal.

For the last year the patient had noticed a mass in the right groin which she could reduce by manipulation and lying down. Three days previous to admission to the hospital, she was suddenly seized with severe pain in that region and was unable to reduce the swelling. Her physician, Dr. Maurice Exiner, made a diagnosis of irreducible hernia, and admitted her to the Community Hospital, where I was consulted. She did not appear very acutely ill, although suffering from considerable pain. The temperature on admission was 100.6, pulse 96, respiration 18. The general physical examination was negative. In the right inguinal region a spherical swelling was present, tender, firm, irreducible and not tympanitic. Urinary examination was negative. The diagnosis of an irreducible hernia seemed logical.

Under general anesthesia, the usual Bassini incision was done. Instead of a sac, a tumefaction presented itself, consisting of a firm, vascular, thick walled, pear shaped mass about 5 by 2 cm., lying in the inguinal canal, the narrowest portion at the internal ring. There was no peritoneal sac. The similarity to bladder tissue was noted, a catheter passed by the urethra and the bladder emptied. But the tumor in the inguinal canal remained unchanged in size. The mass was then incised and found to contain about half an ounce of straw-colored fluid. No internal communication with the bladder could be determined. The pedicle at the internal ring was transfixed and ligated with No. 2 chromic gut, and a typical Bassini closure done. The patient had a very smooth convalescence.

We were dealing, then, with either a congenital cyst of the inguinal canal, a bladder hernia, or a diverticulum of the bladder. Microscopic examination, confirmed by several pathologists, proved the specimen to be bladder tissue. The muscle bands were arranged in the characteristic fashion, interspersed by connective tissue. There was, however, a complete absence of epithelium. Hinman,<sup>2</sup> in a series of seventeen operative cases, states that in only one did he discover any vestige of lining epithelium. He mentions the remote possibility of traumatism during operation, such as packing the cavity of the diverticulum, as being the factor in denuding the epithelium. This does not apply to the case here reported, as there was no intradiverticular manipulation. We feel that we were dealing with an old, if not congenital, diverticulum, whose lumen had become shut off from that of the bladder and whose epithelium had undergone atrophy.

41 West Seventy-Fifth Street.

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2. Hinman, Frank: Surg., Gynec. & Obst. 29:150-172 (Aug.) 1919.



THE CELLULOID CAPSULE: A MEANS OF DETERMINING  
THE MOTILITY OF THE GASTRO-  
INTESTINAL TRACT

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The methods ordinarily adopted for the determination of the motility of the gastro-intestinal tract are:

1. The ingested barium meal. By following roentgenologically the progress of this radiopaque mixture, it is possible to determine, at any time, the exact position of the head and of the tail of the column of barium. Unquestionably, this is the most accurate method we can employ for this purpose at the present time.

2. The use of powdered charcoal or carmin. This material is not radiopaque, and its progress cannot be followed fluoroscopically. At best, only the terminal result can be noted, namely, the time of the appearance of the carmin or charcoal in the stool. No information as to the intermediate progress is obtainable. The method, however, in addition to giving us information as to the total gastro-intestinal motility, serves as a means of demarcation. When it is desired to study the nature of the stool under special conditions or after a particular test diet, the demarcation made possible by ingested carmin or charcoal serves a valuable purpose. It enables us to determine when to begin the study of the properly selected specimen of stool. This could not be done as well with the ordinary ingested barium meal.

The method here reported, though exceedingly simple, is nevertheless clinically valuable, not only for the demarcation of separate specimens of stool, but also for the determination of gastro-intestinal motility. The method consists in the employment of the indigestible celluloid capsule, which I have previously described.<sup>1</sup> This capsule is filled with powdered barium. Because of this, its localization is possible fluoroscopically at any time in the course of its progress through the gastro-intestinal tract. Moreover, the celluloid capsule itself may be prepared so that it is bright red. Because of its color, the capsule can be readily detected in the stool. This informs us as to the total gastro-intestinal motility, and also serves as a means of indicating when to begin the stool examination of a properly selected specimen, after the administration of a test diet such as that of Adolph Schmidt, or of an ordinary meat-free diet for the detection of blood.

1 West Eighty-Fifth Street.

AN IMPROVED METHOD FOR COUNTING BLOOD  
PLATELETS \*H. MAYNARD REES, M.A., M.D., AND E. E. ECKER, PH.D.,  
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The essentials of a good method for platelet counting are: (1) an efficient anticoagulant; (2) absence of contact between the undiluted blood and any instrument; (3) preservation and fixation of red blood corpuscles; (4) low specific gravity of diluting solution, and (5) a dye that will readily stain the platelets. To these five might be added a sixth, in case the method is for clinical use; namely, that the solution must be reasonably easy to prepare, and must be stable. The solutions recommended by Pratt,<sup>1</sup> Wright and Kinnicutt,<sup>2</sup> Buckman and Hallisey,<sup>3</sup> Bizzozero<sup>4</sup> (osmic acid anticoagulant, found unsatisfactory by Kemp, Calhoun and Harris<sup>5</sup>)

were all found to present features that made satisfactory counts doubtful.

After experimenting with the anticoagulants of the foregoing methods, we reached the conclusion that sodium citrate is by far the most efficient in preventing clumping of the platelets.

The use of the blood pipet for a direct and true count is far easier than any of the indirect methods. It has heretofore been open to the criticism that the platelets have the opportunity of adhering to the glass during the short period before the diluting fluid is drawn in. We have obviated this by first filling the red cell counting pipet to the 0.5 mark with the diluting fluid, and then drawing up the blood rapidly until the top of the column reaches the 1.0 mark, whereupon the pipet is again plunged into the diluting fluid and the dilution is completed. With a little practice, this can be done very accurately. In obtaining blood, the puncture should be made sufficiently deep to cause the blood to flow freely for a few seconds. The first drops are wiped away with a quick stroke.

The method of Wright and Kinnicutt calls for laking of the red blood corpuscles. Unfortunately, we have never seen a field in which the red cells were laked without the formation of artefacts. These artefacts appear as highly refractile bodies, of the size of a small platelet, and take the dye in the same manner. They may appear attached to the periphery of the "shadow" red cell, or may be entirely free. We have followed the formation of these bodies, and believe them to be identical with "Arnold bodies." Our first solution was 3.8 per cent. sodium citrate, which, although isotonic, was found occasionally to permit of "laking" or "fading" of the erythrocytes. After the addition of formaldehyd solution, 0.2 per cent., this phenomenon was much less frequent, but it still occurred. More formaldehyd caused distortion of the red cells.

It is generally agreed that the time of settling of the platelets should be shortened as much as possible. We found this to be particularly true when the open type Neubauer counting chamber was used, since evaporation alters the preparation after about twenty minutes. The high specific gravity of the solution of Buckman and Hallisey does not permit rapid settling of the platelets. Experience with the solution which we have described has convinced us that a count of sufficient accuracy for clinical purposes may be made after ten minutes, or about the time necessary for a preliminary red cell count.

Of all the vital dyes tested, brilliant cresyl blue is the best. Having made a solution as described below, which was isotonic and contained formaldehyd, we were inclined to attribute the occasional apparent hemolytic effect to the dye, which we used in 0.1 per cent. concentration. With this in mind, a series of tests were made, as follows:

Experiment showed that blood diluted 1:160 gives, on centrifugalization, a column of red cells that about half fills the narrow end of a Hopkins tube.<sup>6</sup> Blood was diluted 1:80 with 3.8 per cent. sodium citrate solution. To 5 cubic centimeter portions of this were added 5 c.c. each of 0.2 per cent. solutions of eight dyes, also in citrate (3.8 per cent.). The final mixture was: blood, 1:160; sodium citrate, 3.8 per cent.; dye, 0.1 per cent. This approximates the 1:200 dilution used in the counting chamber. The mixtures stood for periods of from thirty minutes to two hours, and were then centrifuged with controls, not containing dyes, for five minutes. The same speed and time were maintained in all experiments. With the trypan dyes (red and blue) and crystal violet, the bulk of precipitated cells considerably exceeded that of the control tubes; but with all other dyes, methylene blue, methyl violet, neutral red, brilliant cresyl blue and Janus green, the bulk of cells was not altered. Therefore, it was safe to assume that no important hemolysis took place in the Hopkins tubes. Parallel microscopic examinations revealed, in the cases of increased volume, swelling of the corpuscles. Occasional and irregular cases of hemolysis still occurred. Allowing the dye solutions to age as long as thirty days made no difference in our results; nor did the substitution

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\* From the Department of Pathology, Western Reserve University School of Medicine.

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2. Wright, J. H., and Kinnicutt, Roger: A New Method of Counting the Blood Platelets for Clinical Purposes, *J. A. M. A.* **56**:1457 (May 20) 1911.

3. Buckman, T. E., and Hallisey, J. E.: Studies in the Properties of Blood Platelets, *J. A. M. A.* **76**:427 (Feb. 12) 1921.

4. Bizzozero: *Arch. ital. de biol.* **16**:388, 1891.

5. Kemp, G. T.; Calhoun, Henrietta, and Harris, C. E.: The Blood Plates, Their Numeration in Physiology and Pathology, *J. A. M. A.* **46**:1026 (April 7) 1906.

6. Hopkins, J. G.: A Method for Standardizing Bacterial Vaccines, *J. A. M. A.* **60**:1615 (May 24) 1913.



of isotonic salt solution for sodium citrate solution. Washing the red cells before making up the original suspension caused even greater swelling of the corpuscles in some instances, but no hemolysis took place as determined by the Hopkins tube method.

Having ruled out any direct hemolytic effect of the dye, of the anticoagulant or of age of the solution, we were forced to conclude that the phenomenon was in some way related to the intimate contact (surface effect) with glass, taking place in the counting chamber. The question was clarified by the work of Fenn,<sup>7</sup> who found that hemolysis of washed corpuscles is more rapid when they are allowed to settle out on clean microscope slides than when they are kept in suspension, and that contact hemolysis is most marked on slightly soiled glass, hemolysis being very rapid with unfixed cells. Serum inhibited the contact effect. From the studies of Fenn and from our own, it is evident that, when using solutions for blood counting containing no fixative or only small amounts, the greatest attention must be paid to the use of scrupulously clean apparatus.

SUMMARY

The fluid recommended is a 3.8 per cent. sodium citrate solution, to which formaldehyd solution, 0.2 per cent., and 0.1 per cent. brilliant cresyl blue are added.

This diluting fluid is drawn in the blood pipet to the 0.5 mark; the freely flowing blood is drawn to the 1.0 mark, and finally the pipet is plunged back into the diluting fluid, and dilution is completed.

After the counting chamber is filled, ten minutes should elapse before the platelet count is made. During this period, a red cell count can be readily accomplished.

Great care should be taken to use scrupulously clean pipets and counting chamber to avoid contact hemolysis.

Both in experimental work with the blood of rabbits and of guinea-pigs, and in clinical work, the method proved simple and reliable.

CASE OF GANGRENE OF SCROTUM AND PENIS

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A white man, aged 34, entered the hospital, Nov. 27, 1922, complaining of severe pain in the region of the scrotum and penis. The family history was negative. The past history included the diseases of childhood, and influenza in 1918, but no other serious illness. Owing to inability to retract the foreskin, the patient, on the advice of a physician, was circumcised at the physician's office, November 21. There were no untoward symptoms until two days later, when a slight infection developed, for which he applied a strong solution of mercuric chlorid. The next day he noticed that the skin on the penis and scrotum was dead; sensation was lost, and the wound was reddened. He continued to get worse and noticed that the skin was sloughing on both penis and scrotum. The latter had swollen to several times the normal size. He was brought to the hospital. All the skin, dartos and tunica vaginalis of the scrotum were gangrenous as high as the penoscrotal junction, and the skin on the anterior surface of the penis had sloughed. The skin of the thigh was intact, as were the testes.

The patient was well developed and nourished. He was in much pain. The mucous membranes were pale and cyanotic. There was an anxious expression on the face. Examination of the head, lungs and heart was negative. The abdomen was somewhat tender all over the lower quadrant, but there were no areas of tenderness on palpation. The blood pressure was: systolic, 134; diastolic, 74; pulse pressure, 60. Blood count revealed 12,000 leukocytes, 80 per cent. polymorphonuclears and 4,500,000 red cells. The urine was normal. The Wassermann and Sachs-Georgi tests were negative. A smear made from the lower wound revealed *Streptococcus pyogenes*.

All of the dead skin was carefully removed from the wounds, and a wet dressing of potassium permanganate solu-

tion was applied until the infection had cleared up. The improvement was rapid, and on November 12 a plastic operation was decided on, with skin graft if necessary. Under spinal anesthesia, the edges of the scrotal wound were freshened and undermined slightly, beginning at the lower angle of the wound. An attempt was made to cover the testes with healthy skin flaps, which was done with the exception of a small area in the center, on which were placed several small skin grafts. The skin on the penis was so widely separated that it was not possible to approximate the edges, so a skin graft was done, and a rubber tissue dressing was applied. The scrotal wound healed by first intention with the exception of a small area near the center, but the grafts soon covered it. The penile wound healed very rapidly, and the patient was discharged, December 27, the wound to be dressed at home, only a small area requiring any attention.

This is rather an unusual case, in that the skin on both the penis and the scrotum was destroyed and sloughed without any damage being done to the surrounding skin, showing that it was doubtless a case of thrombosis of the vessels supplying the genitals, the testes being unharmed.

THE USE OF SILVER ARSPHENAMIN IN THE TREATMENT OF WASSERMANN-FAST SYPHILIS

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Many articles regarding the efficiency of silver arsphenamin have appeared in the literature since Kolle,<sup>1</sup> in 1918, published the first of his series of reports. This much is established: it is an efficient spirocheticide; it is reasonably free from reactions, and it can be as conveniently administered as any other arsenical preparation.

The twenty-one cases reported were Wassermann fast. The patients, previous to the administration of the silver preparation, had had from four to thirty-four injections of arsphenamin and from thirteen to sixty-seven intramuscular injections of an insoluble mercury salt. The presence of a persistently positive Wassermann reaction in cases of intensive treatment is conceivably due to the continued activity of nests or foci of spirochetes resistant to medication. These foci are usually present in the cardiovascular and nervous systems. Detailed reexamination of these patients revealed evidence of activity that was unsuspected before treatment was instituted. These data are presented in Table 1. Stokes has repeatedly called attention to the multiple structural involvement in the various types of syphilis, and has exposed the fallacy of labeling a case neurosyphilis, for example, when an aneurysm and a hepatitis coexist.

TABLE 1.—TWENTY-ONE CASES OF WASSERMANN-FAST SYPHILIS SHOWING MULTIPLE TISSUE INVOLVEMENT

Osseous system.....	19
General glandular and splenic.....	17
Cardiovascular.....	13
Skin and mucous membrane.....	11
Cerebrospinal axis.....	10
Gastro-intestinal.....	4

MODE OF ADMINISTRATION

A blood Wassermann test was made on all patients before the administration of silver arsphenamin.

From four to sixteen injections of 0.3 gm. of the drug in concentrated solution (10 c.c.) were given at weekly intervals. No mercury was exhibited during the course.

At the end of the series of injections, a month's rest was given, and a complement fixation test was performed, together with a spinal fluid examination.

RESULTS

Twelve of the twenty-one patients presented a negative serum reaction. Four showed no change, and in five a

1. Kolle, W.: Deutsch. med. Wehnschr. 44:1177 (Oct. 24), 1211 (Oct. 31) 1918.

7. Fenn, W. O.: J. Exper. Med. 35:271 (Feb.) 1922.



marked diminution in the strength of the reaction took place. No severe reactions occurred, although treatment was stopped in Case 11 because of a threatened dermatitis (toxic type). Clinical improvement was seen in nearly every case, especially when the complaint or symptom was of neurologic origin. This seemed to parallel the spinal fluid findings.

Of interest is Case 8, in which the condition was conjugal syphilis. The wife was also Wassermann fast, but responded to therapy with a negative reaction (Case 2). The husband's blood reaction was unchanged, but he was so much improved clinically that he was able to resume his occupation as a brakeman.

Case 15 was accepted for trial with misgivings, since a total of thirty-four arsphenamin and sixty-seven mercury injections had been given. No signs of arsenical intolerance appeared, and the full course of silver arsphenamin was administered, with the result that the reaction changed from total inhibition to negative.

Cases 16 and 8 did not respond although the number of injections was double.

TABLE 2.—RESULTS OF SILVER ARSPHENAMIN INJECTIONS \*

Case	No. of Mercury Injections	No. of Arsphenamin Injections	Serum Wassermann Reaction	Spinal Fluid Reaction, 0.5 C.c.	No. of Silver Arsphenamin Injections	Serum Reaction After Therapy	S. F. Reaction, 0.5 C.c., After Therapy	Outstanding Features
1	18	6	3	..	8	0	..	Cutaneous
2	26	16	4	3	8	0	0	Cerebrospinal
3	14	10	3	..	8	1	..	Osseous
4	17	4	4	2	8	0	0	Gumma of the brain (?)
5	45	7	4	4	8	0	2	Cerebrospinal
6	47	6	4	3	8	0	0	Cerebrospinal and aneurysm
7	23	10	3	..	8	1	..	Latent
8	20	18	4	..	16	4	..	Aortitis
9	36	17	4	..	8	4	..	Cirrhosis
10	13	8	4	3	8	2	..	Cerebrospinal
11	27	14	4	4	8	2	0	Tabes dorsalis
12	24	6	3	..	8	0	0	Osseous
13	45	12	2	..	4	0	..	Toxic dermatitis (?)
14	56	14	4	..	8	4	0	Visceral
15	67	34	2	3	8	0	..	Paresis
16	20	6	4	0	16	4	..	Myocarditis
17	14	4	4	0	4	0	0	Poor tolerance
18	16	18	3	0	8	1	..	Cutaneous
19	65	24	4	3	8	0	..	Cerebrospinal
20	49	20	4	0	8	0	0	Cutaneous
21	31	12	3	0	8	0	0	Early tabes

\* All Wassermann reactions were performed with alcoholic antigen; 0 indicates a negative reaction.

The results obtained are of importance if it is believed that a persistently positive Wassermann reaction is indicative of activity. It is my impression that, by the introduction of a distinct change in the treatment of Wassermann-fast cases, lasting good will be done the individual. I have twice seen a strongly positive reaction disappear after a prolonged absence of medication. It is, of course, impossible to estimate the permanence of the negative reactions obtained, but in two instances, four and six months after the treatment, the test was still negative.

Clinic Building.

**Tuberculosis in New York in 1922.**—The New York Tuberculosis Association reports that tuberculosis claimed 5,794 victims in New York City during 1922, the death rate being 99 per hundred thousand of the population. It is the first time in the history of the city that a tuberculosis death rate below 100 has been reached. In 1921 the mortality rate was 103. Up to 1919 the annual number of deaths from tuberculosis in all forms was constantly close to or slightly above 10,000. The great gain in the last few years is better realized when it is noted that the annual total now maintained is below 6,000, while since 1910 the population has increased by well over a million people. If the mortality from tuberculosis in 1910, which was then at the rate of 240 to 100,000 inhabitants, had prevailed last year, the deaths registered would have numbered 12,263. The saving of lives during 1922 due to progress against the disease, therefore, amounted in this city to 6,469.

## Special Article

### THE CARE AND FEEDING OF INFANTS

(Continued from page 553)

[NOTE.—This is the ninth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

#### CLINICAL ASPECTS OF INFANT FEEDING

The general well-being of the infant is as important as the percentage and energy value of the food formula. In considering the two important factors in successful feeding, the chemical composition is as essential as the caloric value. Otherwise one encounters profound disturbances, difficult of interpretation, and due to feeding of either insufficient or excessive amounts of the components of the diet.

The infant, therefore, must be fed amounts of fat, protein, carbohydrates, salts and water suitable to its constitution, age and physical development; these ingredients must be in proper proportion and sufficient in quantity to meet the caloric requirements of the young tissues for growth and development. The fact also must not be overlooked that the constituents of the diet must be in such form as will allow of normal digestion and assimilation.

The wide range of tolerance of infants to their food has been mentioned, and that this, probably, largely accounts for the fact that so many pediatricians have successfully fed infants on mixtures which varied greatly both quantitatively and qualitatively. In all probability another factor is important in the explanation of these successes, namely, the fact that to a certain extent fats, carbohydrates and proteins are interchangeable in the metabolic functions.

**The Weight Curve.**—In constructing a diet for infants, the individual needs must always be borne in mind. Allowance must therefore be made for basal metabolism, for growth, for muscular activity, and for the food values lost in the excreta (Holt). Indirect evidence as to the child's progress is best obtained by taking a careful history of its illnesses and feeding history. Direct evidence is best obtained by a careful study of the infant's physical development and weight curve. One soon learns that a study of the infant's weight is one of the simplest and most reliable clinical factors in estimating its progress. While infants vary considerably in their reaction to a given diet, according to their birth weight, subsequent care and previous diet, definite information of inestimable value is to be gained through the regular use of the scale.

For practical purposes it is necessary that we know the average gain to be expected in normal artificially fed infants. It should be remembered that the breast-fed infant will average larger gains than the bottle-fed baby during the first six or eight months of life. For comparative purposes in the estimation of overweight and underweight in infants coming under observation, the following may be taken as working averages. For accuracy, a balance scale is necessary; the ordinary dial scale is unreliable.

The average weight at birth is 7 pounds (3,200 gm., or about 3,333 gm.).

The average initial loss is 10 ounces (300 gm.), or about one tenth of the body weight at birth.



The birth weight is regained usually by the fourteenth day.  
The weight is doubled at the end of the fifth month, and trebled at the end of the first year.  
The average weekly gain during the first five months should approximate 5 ounces (150 gm.); during the remainder of the first year, 4 ounces (120 gm.).  
The yearly gain during the second year is 6 pounds (2,727 gm.).  
The gain during the third year is 4½ pounds (2,000 gm.).  
The gain from the fourth to the eighth year is 4 pounds annually (1,800 gm.).  
The gain from the eighth to the eleventh year is 6 pounds annually (2,700 gm.).

It is not sufficient, however, to base the determination of the amount of food on the weight of the baby alone, since two infants of the same weight may have decidedly different nutritional requirements. The fat baby requires less food per pound than the thin baby, and the overfed less than the underfed infant; the sick baby must of necessity be fed within its limits of tolerance during the acute stage of its illness. The body losses must also be compensated for during convalescence, as the baby's tolerance for food permits, by increases in the diet beyond the normal feedings per pound of body weight.

Within certain limitations, therefore, a healthy infant should show a regular gain. It is not absolutely necessary that an infant add to its body weight every day, as daily irregularities are the rule rather than the exception. The relation of the time of weighing to feeding, defecation and urination must always be taken into consideration, and under normal conditions it is sufficient to weigh the infant once a week. It is especially wise to impress this on a nervous mother.

Further, we must not forget that the weight curve of the nursing infant and that of the artificially fed infant differ widely, so that they cannot be directly compared. Although in the beginning the artificially fed infant gains less than the breast fed, in the course of a year he reaches the same weight. The latter at first shows larger gains, but later lags somewhat. Much more important than the weight itself is that the successive weight figures shall form a rising series.

*Caloric Needs.*—Having determined the infant's weight and obtained a fairly definite idea as to its general physical condition, its caloric needs should be estimated so as to gain an idea of its total dietetic needs. The estimation must of necessity be based on its existent weight curve, duly considering its general condition and its weight as compared with other infants of the same age. One should think not so much of providing a given number of heat units as of the food elements necessary to furnish those units. Each gram of fat in the diet will furnish 9.3 calories, and each gram of protein and carbohydrates, 4.1 calories.

*Under this system the physician reckons the minimum daily caloric requirement, either from the present weight of the baby or what it should weigh in health, and then selects the food, so proportioning the fat, carbohydrate and protein content that it will not only meet the caloric requirements, but also will contain the proper amount in grams, of each of the constituents, to meet the infant's needs for growth and development.*

In considering the caloric content, the part played by the various food components must be remembered. Benedict and Talbot<sup>35</sup> found that the basal require-

ments are highest per kilogram at about the ninth month, and steadily fall from this time up to adult life. Holt and Fales<sup>36</sup> estimated that the food value normally lost in the excreta is a nearly uniform proportion of the intake, about 10 per cent. for all ages after infancy; and that the requirements for growth are greatest during the first year of life, and during adolescence; also that the requirement for activity is the only factor which varies widely with different individuals. As the emaciated infant is expected to gain more rapidly in proportion to its body weight than the fat and well nourished infant, it will of necessity require a food with a higher energy quotient to maintain its growth ratio.

The sick baby will rarely be able to digest an amount covering its full needs, as estimated by its body weight.

TABLE 8.—CALORIC NEEDS

Average infants under 2 months of age, from 30 to 45 calories per pound (from 65 to 100 per kilogram)
Average infants over 2 months of age, from 45 to 55 calories per pound (from 100 to 120 per kilogram)
Premature and thin infants under 2 months of age, from 50 to 65 calories per pound (from 110 to 140 per kilogram)
Thin infants older than 2 months, depending on their general condition, from 55 to 70 calories per pound (from 120 to 150 per kilogram)

Therefore, as in every other phase of infant feeding, individual consideration is necessary. It must be remembered that the nutrition of the baby depends on the quantity of food *assimilated*, and not on the quantity *ingested*. Less food is absorbed and utilized by the infant with deficient digestive power, and overfeeding will retard its progress. A comparative estimate of the infant's diet, with a theoretical minimum, is of special value in cases in which doubt exists as to whether the retarded progress is due to insufficient food or to defective digestion and assimilation.

TABLE 9.—CALORIC VALUES OF ONE OUNCE (THIRTY GRAMS) OF VARIOUS FOODS

	Calories
Cow's milk.....	21
Human milk.....	21
Cream (16 per cent.).....	54
Skim milk.....	11
Buttermilk.....	11
Buttermilk mixture.....	21
Albumin milk.....	12
Chymogen milk.....	21
Keller's malt soup.....	25
Cane sugar (by weight).....	120
Maltose-dextrin compounds (average).....	110
Malt-soup extract, dry, by weight.....	90
Malt-soup extract, dry, by volume.....	132
Corn syrup, by weight.....	80
Corn syrup, by volume.....	110
Flour, by weight.....	100
Cereal waters (1 ounce of cereal to the quart).....	3

Repeated clinical experience proves that the earlier figures of Heubner and Rubner are too low for the average infant on bottle feedings. They estimated that the average healthy infant requires on the average 100 calories per kilogram of body weight during the first six months of life, and from six months to the end of the first year approximately 85 calories per kilogram; and that 70 calories per kilogram of body weight is the energy quotient on which a baby can maintain a weight equilibrium. Instead of lessened caloric needs toward the end of the first years, his increasing activities

36. Holt, L. E., and Fales, H. L.: Food Requirements of Children: Total Caloric Requirements, *Am. J. Dis. Child.* 21: 1 (Jan.) 1921.

35. Benedict, F. G.: *Boston M. & S. J.* 181: 107 (July 31) 1919.



demand heightening rather than lowering his food intake. Clinical observation in a large number of cases leads to the conclusion that, to assure satisfactory gain, the figures given in Table 8 must be approximated in the artificial feeding in infants.

During the first few weeks of life of the artificially fed infant it is usually difficult to approximate these figures.

Increases in the quantity of food should always be gradual, especially when malnutrition is present, and the infant must be carefully observed and increases made only as the food tolerance permits.

Estimation of the caloric content of the food is *not a feeding method*, and should be used only as a check on overfeeding and underfeeding, the scale, stools, general condition, and particularly the disposition of the infant being the ultimate guide for dietetic changes.

The *energy quotient* is the number of calories which the infant is getting per pound or per kilogram of body weight. To determine the energy quotient of the diet, the number of ounces of each food ingredient of the food mixture is multiplied by their caloric values, the products are added, and the sum is divided by the number of pounds or kilograms of the baby's weight.

#### ESTIMATING THE AMOUNTS OF THE INDIVIDUAL FOOD ELEMENTS

*Protein.*—Holt and Fales<sup>37</sup> found in their investigations that the protein intake of the normal nursing infant is very low, ranging during the first nine months of life approximately from 8 to 12 gm. daily. This is equivalent to about 1.5 gm. per kilogram (0.7 gm. per pound). Up to the age of 8 or 9 months the protein taken by the nursing infant seldom exceeded 12 gm. daily. Our own observations indicate that most breast-fed infants will average a daily protein intake of 2 gm. per kilogram.

When cow's milk is substituted for human milk the protein intake is considerably increased—doubled or even at times trebled. Infants from 1 month to 9 months of age receive from 15 to 30 gm. of protein daily when fed on the usual modifications of cow's milk. This represents fully 3 gm. and often 4 gm. protein per kilogram (from 1.4 to 1.8 gm. per pound). The increase in protein requirement when cow's milk is substituted for mother's milk is probably due to the difference between the two milks in amino-acid content. Mother's milk contains about twice as much lactalbumin (1.23 per cent.) as does cow's milk (0.53 per cent.). The lactalbumin, which forms two thirds of the protein of mother's milk, contains the highest proportions of the amino-acids leucin, lysin and tryptophan, of all the protein bodies. The work of Osborne and Mendel,<sup>38</sup> as well as that of others, has shown that lactalbumin is especially efficient in promoting growth, while casein, which forms one third of the protein of human milk (0.59 per cent.) and five sixths of the protein of cow's milk (3.02 per cent.) is of comparatively low grade as a growth protein. The chief demands for protein are for compensation for wear and tear and to provide for growth.

Holt and Fales found also that healthy children in their usual diet take about 4 gm. of protein per kilogram at the age of 1 year, the amount diminishing to about 2.5 gm. per kilogram at the age of 6 years. The

young infant, as compared with the older child, requires proportionately a larger amount of protein to meet his needs for maintenance and growth. The total protein intake in the diet of infants and young children, per pound or kilogram of body weight, however, does not differ greatly in amount because the infant receives virtually all of his supply in the form of animal protein during his first year, the vegetable protein being represented by the small amount received in cereals and vegetables.

Vegetable proteins as a class are of distinctly lower grades than animal proteins. While they may be adequate for maintenance, it is hazardous with our present knowledge to depend on them for growth. Holt found that most of the children beyond the age of infancy took more than 60 per cent. of their total protein in the form of animal protein, from milk, eggs, meat, etc. The average was 66 per cent. of the total proteins from animal sources and 34 per cent. from vegetable sources. As vegetable protein cannot replace animal protein gram for gram, he believes that even if a larger proportion of vegetable protein than the usual one third of the total requirements is fed, the total protein intake must be considerably increased.

Sugars and starches, when added to a diet sufficient to meet any infant's need, will, temporarily at least, cause a greater nitrogen retention. Fats have little or no influence. Nitrogen, to be retained, must be built up into living protoplasm, and to accomplish this salts must be available. Unless they are present, the nitrogen is again excreted. Approximately 1.7 gm. of ash are retained for each 1 gm. of nitrogen (Howland), or 0.3 gm. of ash for each 1 gm. of protein.

*The healthy, normal infant may be fed a minimum of 1½ ounces of milk to a pound (100 c.c. per kilogram) of body weight, which would represent 1.5 gm. of protein per pound of body weight (3.5 gm. per kilogram).*

Notwithstanding what has been said on theoretical and experimental studies of the protein needs of the artificially fed infant, as compared with the amount of protein received by the breast-fed infant, it must be granted that the proteins of cow's milk cover the protein needs of the infant, and that when in excess they rarely cause nutritional disturbances if the tendency to large curd formation is prevented by boiling or alkalizing the milk.

As a working minimum, the protein contained in 1½ ounces of milk per pound (100 c.c. per kilogram) of body weight of the normal infant may be used, and in the underfed this quantity may be increased to an amount equal to 2 or 2½ ounces per pound, thereby approximating 1½ ounces per pound of what the baby should weigh for his age. Increases of milk in the diet must be gradual, the additions being governed by the child's ability to handle the food. *From what has been stated, it may be inferred that it is wise to establish the protein content in a diet, which may then be supplemented by fats, carbohydrates and salts, because protein is the tissue builder and must necessarily be a basic constituent of all diets.*

*Fats.*—These are necessary to the normal growth and nutrition of the human body. But to a greater extent than the other food elements, they can for a time be replaced by proteins and sugars, more especially the latter. This explains why infants fed on low fat mixtures, more especially proprietary foods, such as condensed milk, will continue to gain in weight. However, such development cannot be considered as normal,

37. Holt, L. E., and Fales, H. L.: Food Requirements of Children: Protein Requirement, *Am. J. Dis. Child.* **22**: 371 (Oct.) 1921.

38. Osborne, T. B., and Mendel, L. B.: *J. Biol. Chem.* **25**: 1, 1916; *ibid.* **37**: 223, 1919.



because the diet, besides being low in fat, rarely contains more than 1 per cent. of protein.

Fats furnish part of the heat energy necessary to maintain the body temperature. They are stored as a reserve food. The fat is a protein saver, and when supplied in proper amount but little protein is used for the production of animal heat, thus allowing the protein to be retained in greater amount for building the body tissues.

Fat is the carrier of the fat-soluble vitamins which are essential to normal growth, and in all probability have a direct relation to mineral metabolism. Fat also has a definite relation to calcium and probably magnesium metabolism independent of that due to its vitamin content. The best results in feeding are obtained when there is a definite relation between the fat and salt intake. Infants receiving an insufficient amount of fat in their diet show an increasing tendency to local and general infection, thereby giving evidence of lowered immunity.

Some infants digest fats badly, and when a fat intolerance is once established it is overcome only with great difficulty. In such cases it is necessary to throw on the carbohydrate the burden of furnishing the necessary extra food. Such a catastrophe should be avoided, as infants receiving an insufficient amount of fat rarely thrive satisfactorily. We should therefore aim to stay within safe limits. When the diet contains an insufficient quantity of fat, a high percentage carbohydrate feeding is usually instituted. This prevents the formation of soap stools, and tends to the development of diarrhea. For the formation of soap stools it is necessary that there be no excess of carbohydrate, and that there be present in the diet a relative excess of protein or fats or both. The resulting change in the chemical content of the bowel also has a decided influence on the bacterial flora in that the fat excreted in the intestinal tract combines with alkalis, which tend to overcome an excessively acid intestinal content.

Holt, in his studies, found that the nursing infant usually receives, during its first weeks, as much as 20 gm. of fat daily, and that the total increases by the seventh month up to an average of 40 gm. daily, the latter representing about 4 gm. per kilogram (1.8 gm. per pound) of body weight. Each gram of fat has an energy value of 9.3 calories, while protein and carbohydrate each furnishes 4.1 calories per gram; therefore, each gram of fat provides for more than twice as many calories. The tendency toward normal growth and development on the part of a nursing infant on a high fat feeding illustrates the value of this element in the diet.

Our clinical experience has demonstrated that while the tolerance for the fat of cow's milk varies greatly in different individuals, most infants will digest and assimilate 1.8 of fat per pound of body weight daily. This is the quantity contained in 1½ ounces of average cow's milk of good quality (4 gm. per kilogram, the amount contained in 100 c.c.). This quantity will also supply the body needs for growth and development when associated with sufficient protein and carbohydrate.

**Carbohydrates.**—These are used chiefly to supply heat and energy, to supply in part material for fat foundation, thereby partly replacing the fat waste. Because of their high caloric value, they supply a large amount of energy. They are efficient spacers of protein, and will supply energy in case of fat insufficiency in the diet. Synthetically, they are converted into

glycogen in the body. Fat is formed from sugar by the subcutaneous cells, which are especially adapted to this function.

Normally, in greater part, sugar is absorbed from the small intestine and is not found in the feces. If absorbed in sufficient quantity it will cause a rapid increase in weight. When insufficient carbohydrate is supplied to the body, it supplies the deficiency by breaking down the body protein.

The majority of infants have a high carbohydrate tolerance, and the same is true of most infants suffering from nutritional disturbances. Exceptions to this are seen in some of the fermentative diarrheas, some eczemas, and exceptionally in a few other conditions. Fortunately, the ability to metabolize carbohydrates is often present even though fats and proteins are poorly digested.

For practical purposes, the carbohydrates used in infant feeding may be divided into three large groups: (1) the disaccharids, of which saccharose (cane sugar), lactose (milk sugar) and maltose are the best examples; (2) the polysaccharids, of which the cereals, flours and dextrin are most commonly used, and (3) mixtures of the disaccharids and polysaccharids, combinations of which are contained in most of the proprietary infant foods.

**Cane and Milk Sugars.**—As regards the relative nutritive value of cane sugar and milk sugar, there is little to recommend one over the other so far as their food value and the limit of tolerance are concerned. When large quantities of lactose are fed, a laxative effect is more frequently seen than with cane sugar feeding of similar quantities by weight. Cane sugar is heavier than lactose; two tablespoonfuls of the former and three of the latter approximate 1 ounce by weight. *Cane sugar will answer the needs of most infants.* This assertion is based on a large experience with infant-welfare patients among whom economy, of necessity, had to be considered.

*The total carbohydrates (sugar contained in the milk, sugar added to the milk, and cereal, if used), should average from one-eighth to one-fifth ounce (4 to 6 gm.) per pound (from 9 to 13 per kilogram) of body weight a day. One and one-half ounces of milk, averaging 4.5 per cent. carbohydrate, furnishes 2 gm. of lactose. Normal full-weight infants will usually require a minimum addition of one-tenth ounce (3 gm.) by weight of sugar to the milk mixtures for each pound of body weight (6.6 gm. per kilogram). For underweight infants the amount should at first be calculated on the basis of their present weight, but increased if well taken, to meet the amounts indicated for a full-weight infant of similar age.*

Carbohydrates needed beyond that furnished by 1½ ounces of sugar should be supplied by well cooked cereals or cereal waters, because of the danger of fermentative diarrhea. (See mixed feeding.)

Holt and Fales,<sup>39</sup> in their investigations on nursing infants, found that they took, on the average, about 12 gm. of carbohydrate per kilogram of body weight daily. Artificially fed infants usually received somewhat more than this. They believe that an infant of average activity should at one year be allowed about 12 gm. of carbohydrate per kilogram of body weight, the amount being decreased to about 10 gm. per kilogram at 6 years, and maintained at this value throughout the remainder of the growth period.

39. Holt, L. E., and Fales, H. L.: The Food Requirements of Children: Carbohydrate Requirement, *Am. J. Dis. Child.* 24: 44 (July) 1922.



The sugar content of the food of infants who have been on a low sugar diet should be gradually increased in order that they may become accustomed to the altered amounts.

In changing from one kind of sugar to another, it is always safe to reduce the quantity for a few days, further increases being governed by the infant's tolerance. Partially replacing of the disaccharids by cereal waters and gruels usually results in the amelioration of digestive disturbances following the use of excessive amounts of sugars. Clinical observations have led to the belief that both sugar and well cooked starches, after the second month, have distinct advantages in the diet.

*Maltose and Dextrin Compounds.*—These have little to recommend them in the feeding of most infants. They can usually be administered in somewhat larger quantities: one-eighth ounce (4 gm.) for every pound of normal weight. However, it is to be remembered that similar amounts of carbohydrates can be given by feeding cereals with sugars. In using maltose and dextrin compounds it is to be remembered that their action on the bowels varies greatly, depending on their maltose, dextrin and alkali content. Thus, we find that proprietary foods containing a considerable percentage of dextrin, in the absence of added potassium salts, are constipating, while those with a high maltose content, more especially when containing potassium carbonate or bicarbonate, are laxative in their effect.

*Cereals.*—Cereals in water or gruels may be added to the milk mixtures in quantities varying from one-sixtieth to one-thirtieth ounce (0.5 to 1.0 gm.) for each

TABLE 10.—GRAMS OF SALTS IN 1,000 C.C. OF MILK

	CaO	MgO	P <sub>2</sub> O <sub>5</sub>	Na <sub>2</sub> O	K <sub>2</sub> O	Cl	Fe
Human milk...	0.458	0.074	0.345	0.132	0.609	0.358	0.0017
Cow's milk...	1.72	0.2	2.437	0.465	1.885	0.822	0.0007

pound of body weight, daily (1.0 to 2.0 gm. per kilogram). Cereal waters may be used as a diluent as early as the second month of life, and the cereal gruels by the fourth month. The addition of a second carbohydrate to the infant's diet is frequently followed by increases in the weight curve out of proportion to the food value of the cereals. This is especially true when the whole grain rather than the dextrinized flours is used in the preparation. It cannot be stated whether this is due to vitamins or vegetable proteins contained in the preparations made from the whole grain. The cereals also have a decided influence on the calcium and magnesium balance, owing, in all probability, to the same factors.

*Salts.*—Human milk contains 0.2 gm. of ash in 100 c.c., and cow's milk 0.75 gm. of ash in 100 c.c. The difference in percentage in human and cow's milk is equalized by the body's using only what is necessary for its life and growth. The salts are absolutely necessary for the life of the organism.

Holt, Fales and Courtney, in their studies on calcium metabolism, concluded that:

The total absorption of calcium oxid varied in general with the weight of the child. . . . An excessive calcium intake apparently did not increase the calcium absorption, the excess being excreted.

The average absorption of calcium oxid by healthy infants taking modifications of cow's milk was 0.09 gm. per kilogram of body weight. Since the average absorption of calcium oxid by breast-fed infants was 0.06 gm. per kilogram, it may be assumed that 0.06 gm. per kilogram is the minimum

normal absorption by infants taking modifications of cow's milk.

To insure the average absorption of 0.09 gm. of calcium oxid per kilogram, the intake of calcium oxid should be at least 0.19 gm. per kilogram with cow's milk feeding; to insure an absorption equal to the average found for breast-fed infants, the intake of calcium oxid should be at least 0.13 gm. per kilogram.

The best absorption of calcium was obtained when the calcium intake bore a definite relation to the fat intake, that is, when the food contained from 0.045 to 0.060 gm. of calcium oxid for every gram of fat, and when at the same time the fat intake was ample, not less than 4 gm. per kilogram.

*An infant receiving one tenth of its body weight in milk, that is, 100 gm. per kilogram (one and one-half ounces per pound) of body weight will have an intake of 0.17 gm. of calcium oxid per kilogram (0.08 gm. per pound). At the same time, the infant will have an intake of 4 gm. of fat per kilogram (1.8 gm. per pound).*

The percentage content of magnesium, sodium and potassium salts is approximately the same in human and in cow's milk; but quantitatively, in cow's milk, it is about three times as great. Therefore, in mixtures containing the recommended amount of cow's milk there will be about 50 per cent. more of these salts than in the average quantity of breast milk taken by an infant.

Of the inorganic constituents, phosphorus ranks among the most important. Human milk contains 0.345 and cow's milk 2.437 gm. of phosphorus pentoxid per liter, a ratio of about 1 to 8. Of this, approximately 43 per cent. in human milk and 46 per cent. in cow's milk exists as organic compounds. Various authors find that from 53 to 80 per cent. of the phosphorus in cow's milk, and from 65 to 90 per cent. in human milk, is absorbed. If these figures are correct, we may be assured that there is at least sufficient phosphorus in cow's milk mixtures to provide for the infant's needs. Therefore, a question of more importance is the ability of the infant to fix in its body tissues the phosphorus which it receives in its diet.

Theoretically, at least, the iron content in breast as well as cow's milk is insufficient to meet the infant's requirements, and in both instances it must draw to some extent at least on its iron deposits. In artificial feeding it is especially important during the first six months that provision be made for supplementing from other sources the iron contained in the cow's milk.

Salts are necessary for building the body tissue, and each gram of protein retained and built into the body tissue requires approximately one-third gram of ash.

The average infant receiving cow's milk, with its greater salt content, lives on a higher plane of mineral metabolism than one receiving breast milk. In the majority of infants, this excessive salt intake undoubtedly does no harm; the surplus is not absorbed, and is merely eliminated.

Sodium and potassium are usually well retained, unless severe diarrhea is present or there is an excess of fat or of sugar in the diet. Under such circumstances the salts are lost, and the loss is badly borne and cannot indefinitely be continued. When all available alkalis have been drawn on, the infant breaks down its own tissue to furnish more of these substances, which explains, in part at least, the excessive nitrogen excretion in such cases. When diarrhea ceases and the intake is sufficient, a positive balance is rapidly instituted.

(To be continued)



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MARCH 3, 1923

## PHYSICAL CAPACITY IN CHILDHOOD

It has become the custom in recent years to speak glibly of "corrective exercises," with the implication that they may play a noteworthy part in both the prevention and the cure of undesirable conditions, particularly during the period of adolescence. If the alleged effectiveness of various types of muscular activity is as real as it has been pictured to be, the subject assuredly deserves most respectful attention from the clinician. A recent writer has remarked that because muscular exercise is so constantly a part of daily life and so obvious in its practical application, medical practitioners have come to regard its physiology as an established truth, into the true nature of which search is unnecessary. The subject of muscular exercise, he adds, should be of more than mere academic interest to the pediatrician.

The problem of exercise in childhood, furthermore, is of importance not only because of the advantage that may be gained from intelligently regulated muscular performance, but also with reference to inherent dangers as well as benefits. During the period of adolescence, when the body is growing rapidly and various vital organs are in process of developmental adjustment, exercise should never be carried to the extreme. Williams<sup>1</sup> has wisely reminded us that in children the one quality that should not be tested is endurance. Many instances are on record of high school athletes being "burned out" by too intensive participation in scholastic sport. Exercise should be used, Williams adds, to build strength and power in the youth, not to waste them. Emerson<sup>2</sup> has warned against the danger for the undernourished child, even in play, that he will engage in games beyond his strength, or indulge in them for too long a time without rest. Emerson believes that there has been a tendency to overrate the importance of corrective exercises. It should be recognized, he states, that most cases of bad

posture are due to the general weakness of a body with too little weight to support its height. When this condition exists, the first need is to start the child on a program that will bring him up to his normal weight, when it will be found that, as weight increases, the posture improves.

For the present, the precise relationship between cause and effect in connection with postural defects and exercise need not be debated. It can scarcely be questioned that, in any event, physical therapy should be based on physiologic knowledge. THE JOURNAL has often taken occasion to point out how meager is our scientific information regarding the physiology of exercise. Before deciding wherein one may drive or neglect the muscular system, its capacities and limitations must be learned. Facts recently gathered by Seham<sup>3</sup> at the University of Minnesota Medical School have a bearing in this connection. They show that, in normal children of school age, all forms of exercise produce an increase in the pulse rate and the blood pressure, the increase depending mainly on the type of exercise. In the majority of cases, the increase of the pulse rate and the blood pressure, as well as the reaction time of the blood pressure, are in direct proportion to the speed and the amount of work performed. These are evidently the same sorts of responses as are encountered in adults. The physical capacity of children, as judged by the maximum physical output, is in direct relationship to the age, circumference of the chest, circumference of the thigh and the vital capacity; height and weight do not alter it so constantly. Such information is part of the essential prelude to an intelligent advocacy of play or the prescription of corrective exercises.

## THE GROWTH OF HAIR

The growth of hair presents some sort of problem to innumerable persons, among whom many approach the physician to secure a solution of the difficulty involved. On the one hand are the hordes of people of both sexes and in all walks of life who complain of alopecia. In its extreme forms it shows "a bald, glistening crown closely drawn over the skull." This sad picture, it was recently stated,<sup>4</sup> is senile, spontaneous or simple baldness. Premature baldness, it is added, is the same thing, save for the fact that it occurs before the age when these changes, which we ordinarily attribute to old age, are expected to appear. To the victims of such circumstances is left the invidious choice of accepting a condition for which no remedy can logically be expected, or of assuming the existence of a seborrheic dermatitis, for the treatment of which no two experts may agree.

1. Williams, J. F.: *Personal Hygiene Applied*, Philadelphia, W. B. Saunders Company, 1922.

2. Emerson, W. R. P.: *Nutrition and Growth in Children*, New York, D. Appleton Company, 1922.

3. Seham, M., and Egerer-Seham, Grete: *Physiology of Exercise in Childhood, I, A Study of Normal Children of School Age*, Am. J. Dis. Child. **25**:1 (Jan.) 1923.

4. Osborne, O. T., and Fishbein, Morris: *Handbook of Therapy*, Chicago, American Medical Association, 1920.



The other class of unfortunates consists of those who seek to overcome a hypertrichosis, or excess of hair, on some part of the body. The simplest expedient, cutting off the undesired growth, often meets strenuous objection on the ground that such a procedure is likely to cause subsequent overgrowth. Similar stimulation is believed by many to be associated with applications of various cutaneous lubricants; and sunlight also is charged with encouraging hypertrichosis.

Careful measurement furnishes the best index of growth in any domain of biology. Hence the value of studies recently made in the Department of Anatomy at the Washington University Medical School, St. Louis, by Trotter,<sup>5</sup> on the normal character and rate of hair growth. Four regions of the body were considered: the axilla, a spot on the head just back of the vertex, the outer side of the forearm, and a region on the leg just below the knee. These selected areas were shaved very closely, and then at weekly intervals several hairs were pulled out and later measured. The differences between the successive measurements, after the first seven-day period, gave the weekly rate of growth. This was shown to be different in the different regions. It appears that the hairs on the arms and legs do not fall out and are not replaced by new ones for a period shorter than eleven weeks.

Shaving, in particular, is regarded as a cause of hypertrichosis; but no justification for this widespread belief could be secured. Likewise, the assumption that sunburn has at best any more than a very transient effect on hair growth fails to receive any support from the observations at St. Louis. Finally, petrolatum, which ranks very high in the popular estimation as a stimulant of hair growth, failed to produce results that spell proof. A true promoter still remains to be discovered.

#### WHAT WE GET WHEN WE SMOKE

One of the substances abundantly present in tobacco smoke is carbon monoxid, well known as the lethal agent of illuminating gas and of the exhaust gas of motors, which has had so many victims in recent years. Carbon monoxid is not directly poisonous, but displaces oxygen from hemoglobin, for the red cells have 225 times as great an affinity for this gas as for oxygen. Baumberger<sup>6</sup> has found that tobacco smoke may have from 7.2 to 25 parts of carbon monoxid in 10,000 parts of air, a concentration which Henderson found capable of causing serious symptoms if inhaled for more than an hour. But persons never take in undiluted smoke—the heartiest cigaret fiends and the most resolute pipe smokers always take many breaths of fresh air between puffs. It is estimated that if a person should smoke continuously for one hour, inhaling the smoke five times a minute, there might occur as high as 22 per

cent. saturation of the hemoglobin by carbon monoxid, a concentration sufficient to produce headache and perhaps an oxygen shortage during activity; but this figure is undoubtedly far above what smokers do actually accomplish. Perhaps 10 per cent. is more nearly the maximum reached in smoking, a figure that has not been found ordinarily to produce symptoms.

Formerly the statement was current that the chief toxic material in tobacco smoke is pyridin, derived by decomposition of nicotin; but later studies agree in indicating that the nicotin is the chief active agent, tobacco smoke exerting much the same physiologic effects as nicotin in corresponding concentrations.<sup>7</sup> By direct analysis, Baumberger found that cigaret smoke contains between 14 and 33 per cent. of the nicotin present in the tobacco smoked. Cigarets weigh about 1 gm. apiece, and about 80 per cent. of the tobacco is smoked, so that the nicotin in the puffed smoke amounts to about 5 mg. for each cigaret. Of this, about 67 per cent. is absorbed if the smoke is merely taken into the mouth, but 88 per cent. is absorbed if the smoke is inhaled into the lungs. How much of this reaches the blood depends chiefly on how much is lost in saliva, the drooling of the novice being an important protective measure, since from 3 to 5 mg. of nicotin dissolved in water, taken within half an hour, may cause severe symptoms in nonsmokers, whereas habitual smokers can endure twice as much.

These figures show that an unventilated room 10 feet square and ten feet high, occupied by ten men all smoking cigarettes to the best of their ability for an hour, would come to have an air containing about two parts of carbon monoxid and enough nicotin to furnish 2.6 mg. an hour to the person compelled to breathe it. While these are not large amounts in figures, it is certain that any nonsmokers, and many smokers, in such an environment would have a headache, which is ascribable to the increased intracranial pressure that is produced by both the nicotin and the decreased oxygen in the blood. If our hardened cigaret smoker were to puff away steadily for an hour he might absorb as much as 36 mg. of nicotin if he inhaled, and 27.5 if he only puffed. These are amounts that would undoubtedly produce marked effects even on the habituated, but there is at least the consolation that the lethal dose is 500 mg. taken at one time. However, the smoker gets much besides carbon monoxid and nicotin, for the solids of cigaret smoke weigh about 10 per cent. of the tobacco burned, or about 80 mg. for each cigaret, and all the things it may contain besides the aforementioned are not known; but the experimental evidence indicates that nicotin and carbon monoxid account for most if not all the observed effects.

It is to be considered that these experiments were carried out with cigarettes, for the observations of Lee indicate that tobacco burned in cigarettes yields much

5. Trotter, Mildred: The Resistance of Hair to Certain Supposed Growth Stimulants, *Arch. Dermat. & Syph.* 7:93 (Jan.) 1923.

6. Baumberger, J. P.: *J. Pharmacol. & Exper. Therap.* 21:23 (Feb.) 1923.

7. Lee, W. E.: *Quart. J. Physiol.* 1:335, 1908. Von Leeuwen, W. S.: *Arch. f. exper. Path. u. Pharmacol.* 84:283, 1918.



less nicotin, and presumably less carbon monoxid, in the smoke than when burned in cigars or pipes. For example, a Manila cigar and a cigaret of Virginia tobacco were so burned that the same amount of tobacco was consumed in equal time, and the effect of the products of the combustion determined; it was found that although the cigaret tobacco used contained nearly twice as much nicotin as the cigar tobacco, the smoke of the latter was twice as toxic as the cigaret smoke. The explanation for this is that during the slow combustion of a cigar, as in ordinary smoking, immediately behind the point of combustion is an area in which the water and other volatile substances condense; during the act of smoking, the hot gases pass through this moist area and volatilize the more volatile principles of the tobacco, of which nicotin is one. Therefore the smaller the moist, hot area behind the point of combustion, and the more rapid and complete the combustion, the less likely is the smoke to contain volatile toxic bodies; hence a cigaret or a slender cigar will yield fewer of these products than a thick cigar, and many smokers can testify that a thick, "fat" cigar has much more effect than a long, slender cigar of similar tobacco. The unpleasant effects that the unaccustomed smoker experiences on relighting a half-finished cigar or pipe are explained on the same basis.

#### HAVE SPERMATOOZOA FUNCTIONS AND EFFECTS OTHER THAN FERTILIZATION?

Have spermatozoa any function aside from that of the propagation of the race? is a question that has arisen because of some recent experiments. Guyer<sup>1</sup> showed that when male rabbits and guinea-pigs are injected intravenously with specific spermotoxins prepared from fowls, or with spermatozoa directly, sterility results, and the serum of the animal becomes spermotoxic. When the spermatozoa are injected intravenously, according to Tsukahara,<sup>2</sup> they may cause severe toxic reactions and even death, male animals being more sensitive, and pregnant females more so than nonpregnant.

McCartney<sup>3</sup> did not use spermotoxic serums, as did both Dittler<sup>4</sup> and Guyer, but spermatozoa suspensions directly. In a series of seventy-nine female rats subcutaneously injected with doses of the spermatozoa suspension up to a total of 3 c.c., each cubic centimeter containing 80,000 spermatozoa, he found that the rats remained sterile for a period of from two to twenty-two weeks beyond the normal gestation time, although the normal sexual cycle and sex behavior of the rat seemed in no way altered. The period of from two to twenty-

two weeks at first consideration does not appear to be lengthy, but these results become significant when we consider that the rat is a short lived animal and that a rat 3 years old corresponds to a human being 90 years old. From careful manipulation and tests he concludes that the spermotoxins are present in the vaginal and uterine secretions, and have an immobilizing and agglutinating effect on the spermatozoa. Thus, we can conceive of this mechanism acting in the generative tract to kill the spermatozoa introduced by normal coitus, and thus prevent impregnation of the ova. By examination of incubated eggs from immunized hens he confirmed this conclusion. He also concludes that the degree of immunity is proportional to the amount of the spermatozoa suspension injected, and under proper precautions no deleterious effects are to be expected in the normal nonpregnant female so treated, although he found that the injections tended to cause abortion of existing pregnancy. It is also interesting to note that he found that after the immunity by the injection of spermatozoa had worn off, the female was able again to bear normal young. While spermatozoa injected subcutaneously appear to cause no harm to the female organism other than to cause transient sterility, they seem to have toxic action on the male when similarly administered, as shown by the results of both Guyer and McCartney. In male animals so treated, the spermatozoa in vivo were found immobilized, and the testes in several cases were found atrophied.

From clinical observations, Mayer<sup>5</sup> and Vogt<sup>6</sup> conclude that spermotoxins may have a therapeutic, social and economic aspect. Mayer states that abortion of very young ova may result from frequent coitus after a long period of abstinence. Frequent bursting of follicles may result after sexual intemperance, and this may hinder the formation of a corpus luteum, which is so necessary for the embedding of the ova. The toxic effect of sperm overloading may be a reasonable explanation. Vogt assumes that sperm overloading leads to sterility and that a natural cure occurs after prolonged abstinence from sexual intercourse. The first cohabitation is the one that most frequently results in conception, and this may be explained by the absence of the later acquired immunity to spermatozoa. The increased sensitiveness immediately after the menses may be due to the period of abstinence during the menstruation and the consequent weakening of the sperm immunity. Vogt further states that the increased capacity of function of a hypoplastic genital apparatus after marriage, and the disappearance of chlorosis, could be explained by the stimulus of the sperm albumin substance, and this effect seems to be a permanent one. Excessive coitus is thought to cause the woman to lose weight. Vogt gives sexual abstinence as a possible explanation for the rarity of eclampsia

1. Guyer, M. F.: Immune Sera and Certain Biological Problems, *Am. Naturalist* **55**: 637, 1922.

2. Tsukahara, I.: The Biology of the Male Sexual Cells, *Ztschr. f. Immunitätsforsch. u. exper. Therap.* **34**: 444, 1922.

3. McCartney, J. L.: Studies on Sterilization of the Female by Spermotoxins, *Am. J. Physiol.* **63**: 207 (Feb.) 1923.

4. Dittler: Spermotoxic Serums, *München. med. Wchnschr.* **67**: 1495, 1920.

5. Mayer, A.: Increase of Sterile Marriage Since the War, *Klin. Wchnschr.* **1**: 1142, 1922.

6. Vogt, E.: Sterility and Sperm Immunity, *Klin. Wchnschr.* **1**: 1144, 1922.



and hyperemesis gravidarum during the war. Thus, we can see that, in cases of sterility, the probability of sperm overloading must be considered. Some claims for the therapeutic value of sperm albumin in the treatment of disease have been advanced, but these lack experimental proof. Specific precipitins may be secured for spermatozoa, as shown by Hektoen,<sup>7</sup> so that this fact may be used medicolegally.

Whether injection of spermatozoa or spermatotoxic serums may be used as a method of sterilization in human biology is a question of the future.

#### SOME ACHIEVEMENTS OF BIOCHEMICAL ANALYSIS

Even the most enthusiastic optimist would doubtless admit that there are many paths in medicine that lead to discouragement or dissatisfaction. Those who pursue them need to be encouraged from time to time so that they will not falter. He who is brought face to face daily with seemingly insuperable difficulties in diagnosis or therapy is likely to acquire a deadening inertia from such situations unless there is some new spur to his initiative. A retrospect of progress often serves to remind us of how frequently the unexpected happens, and how occasionally the supposedly insoluble is solved. The history of modern microchemical technic in the service of medicine affords an illustrative instance. Myers<sup>8</sup> has recently pointed out with full justice that, during the decade from 1910 to 1920, the chemical composition of the blood was a topic of increasing interest and importance, quite eclipsing in significance the studies carried out on the urine during the preceding decade. In the case of urine, the advances were primarily the result of the impetus furnished by the new methods of Folin and of S. R. Benedict, and these workers, together with Van Slyke, are responsible for many of our new methods of blood analysis. During the latter period the blood has probably been the topic of more studies than any other body tissue, fluid or secretion. The practical importance now attached to the chemical examination of the blood, Myers concludes, would appear to be rapidly overshadowing the importance formerly attached to urine examination.

A singularly excellent example of the perfection of the analytic technic applied to blood is furnished by recent studies on the interrelations of mother and fetus. By pioneer experiments involving examinations of the blood removed simultaneously from the two organisms, parent and offspring, Slemons<sup>9</sup> demonstrated an impressive equality of the nonprotein nitrogenous substances in maternal and fetal blood. Thus, in twenty cases the results for the two organisms did not differ by more than a milligram, and in the others the dif-

ference was usually less than two milligrams. The most instructive illustration of this similarity in the composition of maternal and fetal blood is afforded by a case of twins in which the mother presented 30 mg. and each infant 30.2 mg. of nonprotein nitrogen for each hundred cubic centimeters of blood. Such strict equality of concentration, Slemons was forced to conclude, cannot well be explained on any other basis than that of simple diffusion through the placental barrier.

More recently, Howe and Givens<sup>10</sup> have made independent comparisons of the blood of mother and fetus in patients at full term. They, too, found only slight discrepancies; and when the values were calculated, almost identical figures were obtained. The average nonprotein nitrogen for mother's blood was 23.8 for each hundred cubic centimeters; for fetal blood it was 23.8. Slemons<sup>9</sup> found in the case of the mother an average of 25.2 mg. of nonprotein nitrogen for each hundred cubic centimeters of blood, and in the case of the fetus, 24.9 mg. The possibility of dealing to such a degree of accuracy and agreement with small samples of blood in which the variations involve at most a few milligrams of urea for each hundred cubic centimeters of blood represents a real achievement in biochemical analysis. A science equipped with such helps is more than likely to employ them in fruitful investigation.

#### Current Comment

##### ABRAMS' DIVINING ROD: THE APOTHEOSIS OF BUNCOMBE

"Oil Locating Machine Aim of Dr. Abrams. Mysterious Device To Be Exhibited Soon." Thus a Los Angeles paper for February 12 heads, in large and black type, an article detailing the alleged claim of Albert Abrams<sup>11</sup> of San Francisco that he has about perfected a machine that will locate the subterranean position of oil. The claim may not be as new as it seems. In his book "New Concepts in Diagnosis and Treatment," published six years ago, Abrams declared that the divining rod is not a superstition and does not belong to occultism "but is entitled to consideration as a scientific fact." In the same book Abrams declared that with his instrument, the "Sphygmobiometer," "it is now possible to demonstrate the wave-metric index of water, oil and minerals." He continues further:

Thus subterranean determination of the foregoing as a prerogative of the specially gifted must be relegated to scientific reality. By aid of the apparatus in question, one may even venture further and ascertain quantity and depth.

Abrams was vague—as usual—regarding the details of this wonder and to the paragraph just quoted he appended the footnote: "It is impossible to describe the author's methods. They demand personal demonstration. . . ." But why should one express aston-

7. Hektoen, Ludvig: Specific Precipitin Test for Human Semen, J. A. M. A. **78**:704 (March 11) 1922.

8. Myers, V. C.: Barker's Endocrinology and Metabolism, III, 1922, p. 423.

9. Slemons, J. M.: The Nutrition of the Fetus, New Haven, Yale University Press, 1919.

10. Howe, Marion G., and Givens, M. H.: Chemical Studies of the Blood of Mother and Fetus, Am. J. Dis. Child. **25**:63 (Jan.) 1923.

11. A reprint of the Abrams vagaries will be sent on receipt of four cents in stamps.



ishment regarding this particular claim of Abrams? To the man who can tell from the autograph of old Samuel Pepys that the famous diarist suffered from congenital syphilis, surely the locating of oil and mineral deposits should be a mere bagatelle. To the man who, from a drop of dried blood, can tell whether the owner of the sanguineous fluid is a Scotch Presbyterian, a Hard-shell Baptist, a Seventh Day Adventist, a Knight of Columbus or a member of the B'nai B'rith, the development of a divining rod is mere child's play. Seriously, however, the disciples of Abrams will need to be more careful in the exploitation of an "oil locating" machine than in their present stunts of diagnosis and treatment of human ailments. Abrams' followers are diagnosing syphilis, cancer, tuberculosis and many other serious diseases in persons not suffering from those diseases and they "get away with it." When the medical profession in the interest of the public protests the findings, the reply is: Your methods of diagnosis are so crude and insensitive that you are unable to find what we have found. This alibi will not work in the less dangerous field of locating oil and minerals. Because of the public's ignorance of the human body and its processes it permits the grossest frauds to be perpetrated when done in the name of the healing art; it resents most savagely, however, chicanery and humbug when property rights are involved. One thing must be said for the Abrams cult: Whatever skepticism we may have of Abrams' accomplishments, he must be given credit for the discovery of the modern Philosopher's Stone, with which his followers transform the dross of credulity and hopefulness into shining shekels of gold.

#### LOCAL VERSUS GENERAL IMMUNITY

Metchnikoff classified cells that exhibit phagocytic activity into two groups, the microphages and the macrophages. To the former belong the important phagocytes of the circulating blood which have attracted so much attention in all modern considerations of the mechanisms of immunity and the defenses of the organism against bacteria. The macrophages include, in the foremost place, the endothelial cells, although all the primary cells of fixed tissue may be included in the group. Although they are reputed to be most active in ingesting inert tissue detritus, macrophages have been shown to take up bacteria, as in tuberculosis; while pneumococci and streptococci are known to be subject to removal from the circulation by endothelial cells lining the blood vessels.<sup>1</sup> In his presidential address before the American Association of Immunologists, Gay<sup>2</sup> has stressed anew the importance of the cells derived from the fixed tissues; at any rate, he refers to the gradually increasing conjecture that macrophages of local origin are in some way connected with prolonged and sometimes healing processes in streptococcus infection. Thus, a local as distinguished from a general immunity to certain micro-organisms may arise. Only on this hypothesis is it at present possible to

explain a tolerance to specific germs when they enter by certain portals, such as the skin or cutaneous wounds, whereas they may be highly damaging when introduced intravenously. It seems likely, therefore, as Gay concludes, that an appreciation of the local nature of some forms of acquired resistance to bacteria may eventually be of service in improving the method of combating localized infections.

#### PLACENTAL FUNCTION

If further evidence were required to substantiate the view that the distribution of nutrients and waste products across the placental barrier between mother and fetus does not involve any more complex mechanism than is afforded by the passage of diffusible substances, it could be found in two recent biochemical researches on the blood. Givens and Howe<sup>1</sup> have established anew that diffusion offers the most reasonable explanation for the passage of the nutrient amino-acids and glucose, on the one hand, and such catabolites as urea and uric acid, on the other, through the placenta. The concentrations of each of these substances tend to be essentially the same in the maternal and fetal bloods. This corresponds with the free interchange of diffusible substances that might be anticipated. Quite different, however, are the comparisons of the nondiffusible fats and lipoids in the bloods of mother and fetus at the conclusion of labor. Slemmons and Stander<sup>2</sup> have reported observations from the department of obstetrics at Yale University which teach that the placenta is impenetrable to these compounds. During the latter part of pregnancy the fat, phosphatid and cholesterol of the blood are more abundant than usual, perhaps as a physiologic preparation for lactation. The mother's blood contains much more of these substances than does the fetal blood. The difference that exists between the two organisms in this respect varies from case to case; and Slemmons and Stander assert that the values prevailing in one seem to be entirely independent of those in the other. Consequently, they conclude that fetal fat must be synthesized, probably from glucose, which is freely supplied by the mother in accord with the demands of the offspring and which readily passes through the placenta.

#### HOOKWORM DISEASE IN THE PHILIPPINES

Numerous surveys have indicated a widespread infestation with intestinal parasites among the inhabitants of our insular possessions in the Philippines. The published records involving thousands of examinations in various places there show an incidence well above 80 per cent. In a series of 500 necropsies at Manila, reported by Crowell and Hammack in 1913, for example, intestinal parasites were found in more than 90 per cent. of the cases. In view of this extensive parasitism it seems somewhat surprising that hookworm disease has given occasion to so much less concern in the Philippines than it has in many other parts of the world, in some of which much scientific

1. Karsner, H. T., and Ecker, E. E.: *The Principles of Immunology*, Philadelphia, J. B. Lippincott Company, 1921, p. 154.

2. Gay, E. P.: On Local and General Immunity, *J. Immunol.* **8**: 1 (Jan.) 1923.

1. Givens, M. H., and Howe, M. G.: Chemical Studies of the Blood of Mother and Fetus, *Am. J. Dis. Child.* **25**: 63 (Jan.) 1923.

2. Slemmons, J. M., and Stander, H. J.: The Lipoids of Maternal and Fetal Blood at the Conclusion of Labor, *Bull. Johns Hopkins Hosp.* **34**: 7 (Jan.) 1923.



activity is being devoted to the subject at present. Is it due to a comparatively light infestation in these islands or to some sort of immunity? The investigations of Schwartz and Tubangui<sup>1</sup> at Los Baños may throw light on the question. They have secured information from a very representative group of the population by examining the matriculants at the University of the Philippines. The majority (approximately 85 per cent.) of these normal adult Filipinos were infested with one or more intestinal roundworms. Approximately half of them showed infestation with hookworm of either the New World or the Old World species, but the vast majority were very lightly parasitized. Clinical symptoms of hookworm disease are absent, as a rule. Whether a racial immunity is involved in this resistance or whether purely physical or other conditions unfavorable to the life of hookworm eggs and larvae in the soil are responsible for the light infections remains to be ascertained. However, Schwartz and Tubangui believe that the prevailing notions concerning the lightness of hookworm infestation and the absence of clinical symptoms in Filipinos harboring these parasites, though supported by considerable evidence, should be confirmed by further investigation before the lack of medical importance now attributed to hookworm infections in the native population is accepted as an established fact.

## Association News

### THE SAN FRANCISCO SESSION

#### Special Trains Over Various Routes from Eastern Cities

Following is further information concerning special trains to and from San Francisco, and railroad rates from principal cities. See also *THE JOURNAL*, January 27, p. 258.

##### NEW YORK SPECIAL

A special train will be operated from New York to San Francisco by way of Chicago, and over the Santa Fe through the Grand Canyon and Los Angeles. *THE JOURNAL*, January 27, gives further details. Dr. E. Livingston Hunt, 17 West Forty-Third Street, New York, is chairman of the committee in charge of this train.

##### MICHIGAN GOLF SPECIAL

The "Michigan Golf Special" from Chicago to San Francisco will leave Chicago, June 17, at 8 p. m., and will stop at Omaha, Denver, Salt Lake City, Lake Tahoe and Del Monte, at each of which places a round of golf will be played by those aboard. This train is due to arrive in San Francisco at 8 a. m., June 23. Dr. F. C. Warnshuis, Powers Theatre Building, Grand Rapids, Mich., will give information.

##### OHIO SPECIAL

The Ohio State Association Special will be operated under the direction of the officers of that association. Mr. Don K. Martin, executive secretary of the Ohio State Medical Association, Columbus, Ohio, will furnish information concerning reservations.

##### HARLAN TOURS

The Harlan Tours of Chicago will operate the "Medical Special De Luxe." Information about this train was given in *THE JOURNAL*, February 3.

##### SANTA FE CHICAGO SPECIAL

The Santa Fe Railroad will run a train, to be called the "American Medical Special," which will leave Chicago at

8:15 p. m., June 16. Short stopovers will be made at Kansas City, Colorado Springs, Santa Fe and Albuquerque. The day of June 20 will be spent at the Grand Canyon. This train is due in Los Angeles at 3:30 p. m., June 21. From Los Angeles, choice may be made of rail or boat service to San Francisco. Detailed information may be obtained from J. R. Moriarty, Division Passenger Agent, A. T. & S. F. Ry., 179 West Jackson Street, Chicago.

#### Side Trips from San Francisco

Dr. W. E. Musgrave, chairman of the Local Committee of Arrangements at San Francisco, has submitted information concerning tours which may be taken, with San Francisco as a starting point, after the annual session:

A three weeks' trip to Honolulu on a special boat, touching all principal ports, including the leper colony, and return to San Francisco.

A trip up the western coast to Alaska and return. Those desiring to do so may leave the boat at Vancouver and return east over the Canadian Pacific, or at Seattle and return east over the Great Northern, or at Portland and then east over any available line. Returning to San Francisco, those who take this coast trip may return east by way of Los Angeles or the Panama Canal.

An oriental tour beginning at San Francisco, and leaving that city a day or two after the close of the annual session. Such tours will include Japan, China and the Philippine Islands and return to San Francisco, or a return by way of the Suez Canal and Europe.

A trip to Honolulu, with six days in that city and on the Island of Oahu, and two days in Hilo and the Kilauea National Park, with a visit by day and by night to the active volcano of Kilauea.

An Alaskan tour, embracing a twenty-four day cruise. Stops will be made at Ketchikan, Wrangell, Petersburg, Taku Glacier and Juneau. At Skagway a railroad trip to Bennett Station will be begun; returning, the boat will proceed to Sitka, from which place six days will be spent in the inside passage en route to Seattle. From Seattle a four days' trip to Rainier National Park will be made.

A tour which includes visits to Yellowstone, Glacier and Rainier national parks.

A comprehensive tour that will take four weeks for sight-seeing in the Canadian Rockies.

Inquiries concerning transportation from eastern ports to San Francisco by way of the Panama Canal should be referred to steamship offices. It will be possible for those who wish to go to San Francisco by way of the Panama Canal to return by railroad.

For further information regarding side trips, address Chairman, Committee of Arrangements, 806 Balboa Building, San Francisco.

#### Railroad Rates

The following summer tourist round trip rates are submitted, on what is thought to be thoroughly reliable information, as approximately the rates that will be in effect for the annual session: from Chicago, \$86; from Kansas City, \$72; from St. Louis, \$81.50; from Omaha, \$72; from New Orleans, \$85.15; from Atlanta, \$106.85; from Boston, \$144.80; from Buffalo, \$116.10; from Cincinnati, \$101.35; from Memphis via St. Louis, \$85.15, but via Chicago, \$93.20; from Cleveland, \$105.65; from Detroit, \$101.70; from Indianapolis, \$95.70; from New York, \$138.32; from Jacksonville, Fla., \$119.83; from Philadelphia, \$133.14; from Pittsburgh, \$113.05; from Washington, \$130.45; from Nashville, \$94.85; from Louisville, \$97.75; from Richmond, \$130.45.

These rates will permit stopovers, and will also permit return by a different route than that used in going to San Francisco. Those desiring to return by way of the northern routes will be required to pay \$18 additional.

**Differentiation of Microbial Species.**—The differentiation and classification of microbial species is certainly the most difficult of all problems in bacteriology. When one finds what he considers a new species, he is at once aware of the lack of means to characterize it adequately so that it may be recognized by others.—Bushnell, *J. Bacteriol.*, July, 1922.

1. Schwartz, B., and Tubangui, M. A.: The Prevalence of Hookworm and Other Intestinal Nematodes in Adult Filipinos, *J. Parasitol.* 9: 83 (Dec.) 1922.



## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**Illegal Practitioner Fined.**—It is reported that J. C. Belding, Powderly, was fined \$100 in the police court, February 8, for practicing medicine without a license.

**Cooperation in Mosquito Eradication.**—In the fight against mosquitoes, the insurance companies, to avoid loss such as was suffered in the recent dengue fever epidemic, will cooperate this year with the U. S. Public Health Service. The state department of health is making an effort to establish full-time health units in every county of the state, to aid in the spring campaign against mosquitoes.

### ARKANSAS

**Personal.**—The governor has appointed Dr. Rutal O. Norris, Tuckerman, a member of the board of health for a four-year term, to succeed Dr. Cyrus F. Crosby, Texarkana, whose term expired.—Dr. Henry Pace, Eureka Springs, has been appointed health officer to succeed Dr. C. F. Ellis, who resigned recently.

### CALIFORNIA

**Naturopaths May Prescribe Whisky.**—In a letter to Prohibition Commissioner Haynes, Washington, D. C., State Prohibition Director Rutter, announced, February 20, that the state appellate court of California held that naturopaths are physicians; in view of this decision, he urged that naturopaths be accorded the privilege of obtaining whisky prescription books.

### COLORADO

**Personal.**—Dr. Thomas M. Toler, Ault, has become associated with Dr. Silas A. Bryan in the management of the local hospital at Silverton.—Dr. Royal H. Finney and Dr. George M. Blickensderfer were recently elected presidents of the Pueblo County and the Denver County medical societies, respectively.

**Station to Station Clinic.**—A station to station clinic has recently been demonstrated in three Colorado towns by the University of Colorado, cooperating with the child welfare bureau, the state board of health, and the state tuberculosis association. Limon, Elizabeth, and Castle Rock were chosen for the experiment. The program in each town included a conference on child welfare, public health and community problems; free physical examination of children of preschool and school age, and exhibits dealing with child welfare, public health and recreation. Drs. R. P. Forbes, J. C. Savage and Elsie Pratt, specialists from Denver, examined the children at the different cities, and found that about one half of them from 2 years to high school age were underweight.

### CONNECTICUT

**Yale University News.**—The tenth annual celebration of Alumni University Day was held at New Haven, February 22.—A bill now before the Connecticut Legislature, entitled "An Act for the Establishment of a Psychiatric Hospital," calls for an expenditure of \$250,000 for the establishment of the hospital, and an annual appropriation for maintenance on the part of the state. The university will provide the site for the hospital, funds for the support of the medical staff, and for investigations into the cause, nature and prevention of mental disease. The bill was the result of an investigation by the state psychopathic commission, which reported the need of such an institution and recommended its location in New Haven in conjunction with the school of medicine.

### DISTRICT OF COLUMBIA

**Building for Tuberculous Pupils.**—A bill was introduced in the House by Representative Focht to provide for the erection of a building for the care of tuberculous pupils on the Upshur Street tract of land in the city of Washington, at a cost of \$150,000.

**Honorary Degrees Conferred.**—At a meeting of the board of trustees of the Lincoln Memorial University at Washing-

ton, February 12, the honorary degree of doctor of science was conferred on Dr. Eugene Hertoghe of Antwerp, Belgium; Dr. William Seaman Bainbridge, New York, received the honorary degree of doctor of letters, and Dr. John Harvey Kellogg, Battle Creek, Mich., Secretary of War Weeks and Secretary of the Treasury Mellon received the honorary degree of doctor of laws.

### GEORGIA

**Personal.**—Dr. Alfred F. White, Flovilla, has been elected president of the Georgia State Medical Board.—A dinner was given in honor of Dr. Albert B. Landrum, Columbus, Ohio, by the Alpha Kappa Kappa medical fraternity, at Atlanta, February 15. Dr. Landrum is grand secretary of the fraternity.—Dr. Henry Hanson, director of public health, Republic of Peru, gave an address on "Prophylaxis of Yellow Fever and Malaria in South America" before a special meeting of the Medical Association of Georgia, at Savannah, February 6.—Dr. Richard L. DeSaussure, Brunswick, has resigned as county health commissioner of Glynn County, to accept a similar position in Ohio.

### ILLINOIS

**Chiropractor Loses Malpractice Suit.**—In the case of Frank Scroggins against John DeBow, a chiropractor of Granite City, for alleged malpractice, the plaintiff was awarded \$4,000 damages. Scroggins claimed that following treatments given him by DeBow for goiter he was obliged to go to a hospital.

**Peoria Physicians' Fellowship Club.**—At a meeting, February 15, pending legislation affecting the profession was discussed. Addresses were delivered by Dr. Charles Humiston of Chicago, Dr. Edwin P. Sloan, Bloomington, president of the Illinois State Medical Society, Dr. John R. Neal, Springfield, legislative representative of the state medical society, and Dr. William D. Chapman, Silvis, secretary of the state society.

**Osteopathic Bill Introduced.**—A bill called the Osteopathic Practice Act has been introduced in the legislature. It would provide for the regular licensure of applicants to practice osteopathy provided such applicants demonstrate to the state department of registration and education well defined minimum educational qualifications, and provided they successfully pass examinations given by the department. The bill would make it unnecessary for the applicant to be examined on the subjects of materia medica, therapeutics, surgery, obstetrics and the theory of practice.

**Emergency Appropriation for Antitoxin.**—The state legislature has passed a deficiency bill making an emergency appropriation of \$35,000 to the state department of public health for the purchase of diphtheria antitoxin for free distribution. Funds provided by the previous general assembly for that purpose had been completely exhausted. The emergency appropriation funds have been placed to the credit of the department, and all needs of local physicians for antitoxin during the remainder of the fiscal year are assured. Physicians may obtain the free antitoxin in necessary quantities through the 434 distributing agents, at least one of which is located in every county seat. There are sixty-nine in Chicago.

### Chicago

**"Physiotherapist" Convicted.**—It is reported that "Dr." J. D. Levine, a physiotherapist, was found guilty, February 21, of practicing medicine without a license. One witness testified that Levine massaged her spine so severely that a rib was broken.

**Fraternity Banquet.**—The annual dinner of the Alpha Omega Alpha honorary fraternity, sponsored by the three Chicago chapters, will be held at the Auditorium Hotel, March 6, the second day of the conference on medical education. All members of the fraternity and their friends are urged to be present.

**Personal.**—Dr. B. Barker Beeson addressed the Allen County Medical Society at Fort Wayne, Ind., January 30, and the Woodbury County Medical Society at Sioux City, Iowa, February 17, on "The Diagnosis of the Commoner Skin Diseases."—Dr. Carl Beck, who recently returned from a six months' trip abroad, spoke on "The Surgical Methods Employed in European Clinics for the Treatment of Gastric and Duodenal Ulcer," before the Laboratory of Surgical Technique of Chicago, February 23.

**Society News.**—A dinner in honor of Dr. G. Edward de Schweinitz, Philadelphia, President of the American Medical Association, will be given by the Chicago Ophthalmol-



logical Society at the Hotel Sherman, March 6. The regular monthly meeting of the society will be held, March 7, in conjunction with the Chicago Medical Society, at which Dr. de Schweinitz will be the guest of honor.—Dr. William E. Grove, Milwaukee, will address the Chicago Laryngological and Otological Society, March 5, on the subject of "Parotid Fistulae in Mastoid Operations."—A dinner in honor of Dr. William W. Duke, Kansas City, Mo., was given at the Hamilton Club, February 28. Following the dinner, Dr. Duke read a paper on "Specific Hypersensitiveness as a Common Cause of Illness" before the Chicago Medical Society.

#### INDIANA

**Personal.**—Dr. Frank W. Foxworthy has returned to Indianapolis after several months spent in South America, where he served as a commissioner to the Brazilian Centennial Exposition in Rio de Janeiro.—Dr. Neil E. Fund, La Porte, has been appointed county physician to succeed Dr. George W. Kimball, who resigned recently.

**Beardsley Bill Passed.**—The Beardsley bill, which failed to pass at the third reading, February 8, on account of the absence of a constitutional majority, was passed by the Indiana senate, February 14, by a vote of 30 to 12. This bill, commits the state to cooperation with the federal government under the Sheppard-Towner Maternity Act.

**Lectures on Forensic Medicine.**—A series of clinical lectures on forensic medicine for law students, attorneys, and physicians, has been given at the Central Indiana Hospital for the Insane at Indianapolis. The subject of the sixth lecture, given February 15, was "Paranoia and Paranoid States of Epileptic, Toxic, Hysterical and Traumatic Insanities." An invitational lecture was given at the hospital, March 1, to lawyers on "Disposition of the Unfit."

#### IOWA

**Proposed Affiliation of Colleges with Nursing School.**—Dr. Charles S. Chase, professor of materia medica and pharmacology at the State University of Iowa College of Medicine, Iowa City, held conferences with the officials of Grinnell, Penn, and Central colleges, recently, regarding an affiliation with the school of nursing at the university, whereby the courses may be combined to offer to students a certificate as registered nurse.

#### KENTUCKY

**"Habit Clinic" Opened.**—The second habit clinic in the United States has been established by the Psychological Clinic in Louisville, under the supervision of the Louisville Society for Mental Hygiene. The first clinic was established in Boston in 1922. The clinic is for children of preschool age who show pernicious or persistent habits which if unchecked may become serious.

**Public Health News.**—At the annual meeting of the Kentucky State Board of Health, held in Louisville, recently, under the presidency of Dr. Lewis S. McMurtry, the following appointments were made: Dr. Philip E. Blackerby, assistant state health officer, was elected director of the bureau of country health work; Dr. Lillian H. South was appointed director of the bureau of bacteriology and epidemiology; Dr. John S. Lock, director of the bureau of tuberculosis; Dr. Annie Veech, director of the bureau of child hygiene; Dr. Jethra Hancock, director of the bureau of venereal disease; Dr. Charles B. Kobert, director of the bureau of trachoma and conservation of vision; Dr. Samuel W. Bates, superintendent of the State Tuberculosis Sanatorium, Hazelwood; Dr. Frank J. O'Brien, director of the bureau of mental hygiene, and Miss Williamson, director of the bureau of public nursing. Each of the terms are for four years.—A health exposition was held in Louisville, beginning February 14. The U. S. Public Health Service, by means of six lecturers, conducted a six-day course of instruction in urban and rural sanitation and disease prevention for health officers and public health nurses. Educational, scientific and health exhibits were displayed, under the direction of Dr. Irvin Lindenberger, county health officer.

#### LOUISIANA

**Honor for Dr. Matas.**—Dr. Rudolph Matas, New Orleans, has been elected a member of the Royal Academy of Barcelona, Spain, and a corresponding member of the Société de chirurgie at Paris.

**Narcotic Clinic Closed.**—The Shreveport narcotic clinic, known as the Public Health Hospital, was closed, February 10. It was the last of its kind in the United States. A decision to discontinue the clinic was reached at a conference at which were present a representative of the Treasury Department, U. S. District Attorney Mecom and Dr. Willis P. Butler, who had charge of the clinic.

#### MARYLAND

**Officers of County Association Elected.**—At the monthly meeting of the Baltimore County Medical Association, at Towson, February 21, Dr. Albert L. Wilkinson was elected president, and Dr. Robert H. Riley, secretary.

**British Ambassador Honored.**—Johns Hopkins University, Baltimore, has bestowed the honorary degree of doctor of laws on Sir Auckland Campbell Geddes, British ambassador at Washington. Dr. Geddes graduated from the University of Edinburgh, Scotland, in 1903.

**Joint Meeting of Medical Societies.**—The Baltimore City Medical Society was the guest of the District of Columbia Medical Society, February 21, at its new medical library in Washington. The program was as follows: "Cardiovascular Symptoms in Thyroid Disease," Maurice C. Pincoffs; "Some Ophthalmological Aspects of Tuberculosis," Harry Friendenwald; "What the Medical Profession Should Know and Do About Preventive Medicine and Surgery," Joseph C. Bloodgood.

#### MICHIGAN

**Toxin-Antitoxin Recalled.**—All diphtheria toxin-antitoxin which was shipped to distributing stations in the state during November and December, 1922, has been recalled by the state health department and replaced by a new supply. Much of that now being turned in was prepared in the spring and summer of 1921.

#### MINNESOTA

**Medical Bill Defeated.**—The medical bill before the Minnesota State Legislature, known as the Basic Science bill, was defeated in the committee and by the house recently. This bill, which was supported by the state medical association, required of all applicants for license to practice in Minnesota a knowledge of physiology, anatomy and pathology.

**County Society Reorganized.**—After several years of inactivity, the McLeod County Medical Society was revived at a meeting held in Hutchinson, January 25. Officers were elected as follows: president, Dr. W. R. Schmidt, Glencoe; vice president, Dr. P. E. Sheppard, Hutchinson, and secretary-treasurer, Dr. D. L. Axilrod, Hutchinson. The next meeting will be held in April.

**Quarantine for Social Diseases.**—Mayor Snively of Duluth appointed a committee recently to confer with the county board of commissioners regarding a temporary quarantine hospital in the city for patients suffering from venereal disease. It is proposed to establish a temporary hospital until the new jail is erected, when it is expected the old jail will be used as a permanent hospital for social diseases.

#### MISSOURI

**Dean Loeb Visits Orient.**—Dr. Hanau W. Loeb, dean of the St. Louis University School of Medicine, sailed from San Francisco, February 22, for a tour of the Orient. During his trip, Dr. Loeb will visit the medical schools of Japan, China and the Philippines.

**Professor Asher to Lecture.**—Dr. Leon Asher, professor of physiology at the University of Bern, Switzerland, will deliver a series of lectures on "The Physiology of the Lymphatics" at the St. Louis University School of Medicine, March 5-9, inclusive. The five lectures will be delivered in the university auditorium.

**Personal.**—Dr. James Moores Ball, St. Louis, will sail on the Cunarder *Andania*, April 14, to attend the annual meeting of the Ophthalmological Society of the United Kingdom, to be held in London, April 25.—Dr. Albert E. Holly, St. Joseph, has been appointed county physician to succeed Dr. Walter Hansen.—Dr. Horace W. Carle has been elected president of the board of health of St. Joseph, to succeed Dr. John M. Bell, who resigned recently.—Dr. Franklin E. Murphy, Kansas City, has resigned as a member of the state board of health.



## MONTANA

**Rocky Mountain Spotted Fever Investigation.**—Several distinguished scientists, including Dr. Simeon B. Wolbach of the Harvard Medical School, Boston, and Dr. Hideyo Noguchi of the Rockefeller Institute for Medical Research, New York, are at Hamilton, conducting research work on Rocky Mountain spotted fever. Their work will continue for several months.

## NEW MEXICO

**Appropriations for Health Work.**—An increase of \$11,000, or a total of \$38,000, is being asked by the New Mexico Bureau of Public Health for health work in the state. It is also asking the legislature for appropriations to assist counties in developing full-time county health departments. The state department of health has announced that it will lend state films, slides and card exhibits dealing with venereal disease and social hygiene to county and city health officers; also stereopticons, portable moving picture projectors and card exhibit frames. A few slides on the subjects of milk, food, teeth, adenoids and tonsils are available for loan.

## NEW YORK

**Memorial to Dr. Wyeth.**—A memorial service for Dr. John A. Wyeth, who died in May, 1922, was held at the New York Polyclinic Medical School and Hospital, February 27.

**Triplets Break Record.**—The superintendent of the Nursery and Child's Hospital reports that for the first time in the ninety-nine years of the institution's existence, triplets were born there, February 24.

**A New Name for Bedford Reformatory.**—Managers of the State Reformatory for Women at Bedford have applied to the legislature for permission to change the name of the institution to "Bedford Farms."

**Dinner for Dr. Jennings.**—Dr. Frank D. Jennings, past president of the Kings County Medical Society, was guest of honor at a dinner, February 17, in Brooklyn, as centenary president of the organization. Dr. William F. Campbell presided at the dinner, at which more than 200 borough physicians were present.

**Scholarships for Ophthalmologists.**—The Italian Medical Society of New York has been notified by the Department of Ophthalmology of the University of Rome that two assistantships without salary are offered to American medical graduates of Italian extraction. Further information with reference to these scholarships may be had by writing to the Societa Medica Italiana, 47 West Forty-Second Street, New York.

**Investigation of Narcotics Proposed.**—Assemblyman Maurice Bloch of New York, who recently introduced a bill into the legislature providing for the restoration of the old system of reinforcing the federal antidrug act by local authorities, has introduced a concurrent resolution providing for investigation of the drug evil by a commission composed of two senators, three assemblymen and three citizens, to be appointed by the governor. The resolution carried an appropriation of \$20,000 and gives the commission a year in which to complete the proposed inquiry.

**Personal.**—Dr. Paul W. Beavan, Rochester, spoke on "Hypertrophic Stenosis of the Pylorus," before the Rochester Pathological Society, January 18.—Dr. Maurice C. Ashley, for more than twenty years superintendent of the State Homeopathic Hospital, Middletown, has resigned, the resignation being effective May 1.—Dr. Francis E. Fronczak, health commissioner of Buffalo, was decorated with the Polish Cross of Valor at the Polish consul's office, February 16, for services rendered with the Polish army. This is the third decoration Dr. Fronczak has received from Poland.

**Physicians Organize to Fight Narcotics.**—Appointment of a committee of fourteen physicians to act in an advisory capacity to the Society for the Suppression of the Narcotic Drug Evil was announced by Dr. Copeland, February 14. Members of the committee are Royal S. Copeland, chairman; Wendell C. Phillips, trustee of the American Medical Association; Daniel S. Dougherty, secretary of the Medical Society of the County of New York; Carleton Simon, special deputy police commissioner in charge of narcotic work; Charles L. Dana, chairman of the public health committee of the New York Academy of Medicine; Arthur F. Chace, president of the county medical society; Antonio Stella, Harlow Brooks, Eugene H. Pool, Samuel J. Kopetsky, Charles H. Peck, Orrin S. Wightman, Frederick E. Sondern and John E. Wilson.

## New York City

**Schools Close on Account of Illness.**—The prevalence of colds, influenza and pneumonia led the board of education to grant a recess, February 22-26. February 19, there were 2,000 teachers absent from their classes, 800 of which had to be suspended.

**American College of Rehabilitation Organized.**—At a meeting held at the New York Academy of Medicine a company was organized for the establishment of an American College of Rehabilitation for training workers in the field of reconstruction of the wounded and crippled. The sponsors are Dr. Fred H. Albee, Mrs. Clarence Cary, Martin A. Metzner, W. J. Hoggson, R. Gradwell and Standish Chard.

**Acceptance of Rebates by Physicians Condemned.**—Resolutions were passed by the New York Academy of Medicine at a stated meeting held, February 15, setting forth that numerous instances had been brought to the attention of the Council and the Public Health Committee of the Academy of rebates being offered to, and accepted by, physicians from commercial laboratories, opticians, druggists and others to whom patients were referred. It was therefore resolved that "The New York Academy of Medicine condemns such practices on the part of those offering the rebates, as well as on the part of physicians accepting them, as being unethical and detrimental to the medical profession."

## NORTH CAROLINA

**Nurses' State Examining Board.**—The Quickle bill, which would have amended the organization of the state nurses' examining board, providing for representations on the board by the state hospital association, and the state medical association as well as the nursing association, was defeated at Raleigh, February 7. Following a hearing before the house committee, the bill was killed by unanimous vote. Contention was made by the nurses, supported by the Buncombe County Medical Society and others, that by reducing their representation on the examining board, nursing standards in the state would be lowered.

## OHIO

**State Medical Board Elects.**—At the regular quarterly meeting of the board in Columbus, January 2-3, the following officers were elected for the ensuing year: president, Dr. T. Addison McCann, Dayton; vice president, Dr. John K. Scudder, Cincinnati; treasurer, Dr. John H. J. Upham, Columbus, and secretary, Dr. Herbert M. Platter, Columbus.

**Medical Board Upheld.**—The right of the medical board to compel chiropractors to stop practicing unless they hold state licenses was affirmed by Common Pleas Judge Ahern, February 16, when he refused Herman J. Kroeger an injunction to restrain the state board from further interference with chiropractors. Reports state that Kroeger, a chiropractic patient, filed petition in the common pleas court to enjoin the state medical board from interfering with members of the chiropractic profession.

**Society News.**—A banquet in celebration of the fiftieth anniversary of the organization of the Mahoning County Medical Society was held at the Country Club, Youngstown, February 1. Dr. Charles D. Humes, Indianapolis, read a paper on "Traumatic Neuroses." Dr. Timothy Woodbridge was the first president, and Dr. William J. Whelan, the first secretary, of the society.—At a meeting, March 6, of the Summit County Medical Society at Akron, Mr. O. N. Harter, president of the Ohio Milk Distributors' Association, will give an address on "The Relation of the Milkman to the Medical Profession," and C. H. Case, a veterinary surgeon, will speak on "Tuberculosis in Cattle."

**Personal.**—Drs. Alfred G. Farmer and Jesse Grant Marthens were elected president and secretary, respectively, of the Dayton Academy of Medicine, January 12.—Prof. R. G. Hoskins, head of the department of physiology, Ohio State University College of Medicine, Columbus, has returned from a lecture tour on the Pacific coast.—Dr. Walter D. Hancock, Millville, aged 75, having retired after fifty years of medical practice, has gone on a three months' trip to South America.—Dr. James F. Baldwin, ex-president of the state medical society (1922) and formerly professor of surgery, Starling Medical College, Columbus, spoke on "Some Great Charlatans of History" before the Wayne County Medical Society at Detroit, February 19.—Dr. Paul W. Bailey, an ambulance surgeon of the General Hospital, Cincinnati, was seriously injured, January 31, when his ambulance collided with an automobile.—Dr. A. B. Denison, assistant superintendent



of the Lakeside Hospital, Cleveland, has been appointed superintendent to succeed Dr. Robert H. Bishop, Jr., who has been appointed secretary of the University Medical School group.

### PENNSYLVANIA Philadelphia

**Library Committee Issues Report.**—The library committee of the College of Physicians has issued its report for 1922. At this time, the library contains 136,489 volumes, 14,677 theses and 131,866 unbound pamphlets. During the year, 6,430 volumes, 11,418 pamphlets and 16,016 periodicals were received. The library has 10,505 portraits and 336 incunabula. It was used during the year by 8,296 persons.

**Society News.**—At the annual meeting of the Philadelphia Pediatric Society, Dr. Horace H. Jenks was elected president; Dr. A. Graeme Mitchell, vice president, and Dr. John P. Scott, secretary.—Drs. John H. Jopson and John S. Rodman were elected president and secretary, respectively, of the Philadelphia Academy of Surgery at the annual meeting, recently.—Dr. William H. Carpenter was elected president of the Medical Examiners' Association of Philadelphia for the ensuing year.

**University Day.**—Four hundred students of the University of Pennsylvania, members of the faculty and trustees, celebrated, February 22, the ninety-eighth annual "University Day," exercises in the Academy of Music. The meeting not only commemorated the birthday of Washington, who was a patron of the university, but was the occasion for conferring honorary degrees. The degree of doctor of science was conferred on Dr. Chevalier Jackson of the graduate school of the university.

**Site for College of Pharmacy Dedicated.**—The site at Woodland Avenue and Forty-Second Street, Philadelphia, for the new buildings of the Philadelphia College of Pharmacy and Science, was dedicated, February 23. Rear Admiral Braisted, former Surgeon-General of the Navy and president of the college, delivered the dedicatory address. It was announced that more than \$1,000,000 had been collected since last November in the campaign for \$2,000,000 for the erection of buildings. The college was founded by Benjamin Franklin.

### SOUTH CAROLINA

**Narcotic Bill Killed.**—State control of the sale of narcotics and other habit forming drugs was rejected by the house of representatives, February 7, when the Lewis bill, which would limit the sale of such preparations to licensed druggists, physicians, veterinary surgeons, trained nurses, dentists and hospitals, was killed.

### SOUTH DAKOTA

**Eyesight Conservation Campaign.**—The South Dakota State Medical Association is conducting a campaign throughout the state for the dissemination of information to the public on the care of the eyes. The state society is voluntarily paying for this work from its own funds, and Dr. Joseph G. Parson, Sioux Falls, chairman of the committee on conservation of vision for the state medical society, has been giving illustrated lectures on the care of the eyes to the various schools and college clubs in Sioux Falls and other towns.

### VIRGINIA

**Public Health Work in Virginia.**—At the annual conference of public health workers at Richmond in December, the progress of county health work in the state was outlined. In 1908 the state had no full-time county health workers; in 1912 the first full-time health officer went on duty; in 1917 five counties had full-time health officers, and in 1922 thirty-two counties employed full-time health workers.

### PHILIPPINE ISLANDS

**Physicians Elected to the Philippine Legislature.**—Dr. Tomas Gomez was elected a member of the senate, and Drs. Agapito Buenconsejo, Raymundo Camacho, Eliseo Limsiaco and Vicente E. Manapat were elected to the house of representatives.

**Lecture on Medical History.**—Lieut. Col. F. H. Garrison, Washington, D. C., U. S. Army Medical Department Research Board, gave a series of six lectures on the history of medicine before the faculty and student body of the College of Medicine and Surgery of the University of the Philippines, Manila, recently.

**Social Hygiene Association.**—The Philippine Island Social Hygiene Association applied for charter, January 1. The educational and religious leaders of Manila formed this organization to study and better social hygiene conditions in the islands. Activities already under way include a survey of vice conditions in Manila and its environs and of the sex educational literature used in the normal schools and colleges.

### CANADA

**Hospital News.**—The Hospitalieres Sisters, who have been conducting the Hotel Dieu in Quebec since the first days of the colony, will take charge of the new hospital to be erected on Ste. Foye Road. The new institution will be a general hospital.

**Canada Asks United States to Help in Drug Fight.**—Canadian officials of the dominion narcotics department will ask cooperation of the United States, it is stated, in a campaign against the international drug traffic. These officials will visit Washington to formulate some international plan. There are 15,000 known drug addicts in Canada, and evidence of the existence of an international "dope ring," with headquarters in Montreal and with operatives working in Chicago and New York, has been discovered.

**Personal.**—Prof. J. C. McLennan, professor of physics at the University of Toronto, has been granted leave of absence for the remainder of the school year. He will visit laboratories in Great Britain, France and Holland, and return in September.—Drs. Duncan N. MacLennan and William Lowry have been appointed assistant professors in ophthalmology in the University of Toronto.—Dr. Herbert A. Bruce, Toronto, addressed the Wayne County Medical Society, at Detroit, February 26, on "Some Observations on the Diseases of the Gallbladder and Pancreas."

**Epidemic Encephalitis in Winnipeg.**—Newspapers have carried exaggerated accounts of an epidemic of encephalitis said to have occurred in Winnipeg. THE JOURNAL, in order to present the facts, telegraphed to Dr. A. J. Douglas, health officer of Winnipeg, who replies: "The first case of encephalitis was notified January 12, and since then eighty-five cases have been reported. Eight of these came in from rural points. There have been seventeen deaths with the myoclonic form predominating. There seems to be no discoverable connection between any of the cases. During the past ten days the number of cases has been decreasing and the type is milder."

### GENERAL

**Postmaster General Work to Interior Department.**—It is announced that on March 4, Postmaster General Hubert Work, former president of the American Medical Association, will become Secretary of the Interior in the cabinet of President Harding, being succeeded by Senator New of Indiana as Postmaster General.

**Bill to Prohibit Interstate Commerce in Heroin.**—Interstate commerce in heroin (diacetylmorphin) is prohibited in a bill introduced in the Senate by Senator Ladd. Persons violating the proposed law shall be fined not less than \$1,000 or sentenced to one year's imprisonment. The measure was referred to the Committee on Interstate Commerce of the Senate.

**Sioux Valley Eye and Ear Academy.**—At the tenth annual meeting of the academy in Sioux City, January 24, the following officers were elected for the ensuing year: president, Dr. Jesse B. Naftzger, Sioux City, Iowa; vice president, Dr. Samuel A. Keller, Sioux Falls, S. D., and secretary, Dr. Lorenzo N. Grosvenor, Huron, S. D. The next meeting will be held at Omaha.

**Large Fund for Oriental Colleges.**—A campaign was opened in December in the United States to raise funds for the medical schools for women in India, China and Japan, which, if secured before January 1, would insure a gift of \$500,000 from John D. Rockefeller. Dr. Tehyi Hsieh, Dr. Ida Scudder, principal of the Women's Medical College, Vellore, India, and Dr. Mabel M. Manderson, former dean of the North China Medical College for Women, Peking, toured the United States lecturing for this movement. It was announced recently by the Woman's Foreign Missionary Society of the Methodist Episcopal Church that more than \$2,800,000 had been raised for the six oriental colleges for women.

**Eye Sight Conservation Council of America.**—The annual meeting of the council was held in New York, February 6,



at the Pennsylvania Hotel, under the presidency of L. W. Wallace, Washington, D. C. General Director Guy A. Henry presented the annual report, stating that more than 533,000 folders and pamphlets had been sent out during the year. Prof. F. C. Caldwell, Ohio State University, delivered an address on "Glare," and Dr. Homer E. Smith, New York, spoke on "The Marvels of Vision." The same officers were elected for the ensuing year, with the exception of the vice president. Bailey B. Burritt, New York, was elected to succeed Dr. Cassius D. Wescott of Chicago.

**Reunion of "The Blizzard Class."**—The class of 1888 of Bellevue Hospital Medical College, New York, will celebrate its thirty-fifth anniversary, March 12. Because of its graduation on the day of the most terrible blizzard New York ever experienced, the class was named by the late Professor Doremus "The Blizzard Class." Dr. D. Hunter McAlpin, the class president, has invited all the surviving members to be his guests at a dinner at the McAlpin Hotel on that date. Those of the class who have not been reached by direct invitation because of faulty or insufficient address will please communicate with the acting secretary, Dr. S. Adolphus Knopf, 16 West Ninety-Fifth Street, New York.

**Resolutions on Narcotics Favorably Reported.**—Feb. 23, 1923, the Committee on Foreign Affairs, after hearings, reported favorably the Porter resolutions on narcotics (*THE JOURNAL*, February 17, p. 488) to the House of Representatives. The report of the committee states, in part, that "notwithstanding that many nations have antinarcotic laws which impose heavy penalties for violation thereof, unlawful traffic in habit-forming narcotic drugs continues. In the United States, although our laws are designed to suppress illicit handling of these drugs, their use by addicts is constantly growing, and we are justified in the conclusion that radical and efficacious remedial action must be inaugurated and strictly enforced."

**Rockefeller Foundation Announcements.**—The Rockefeller Foundation has elected to its board of trustees Dr. Ray Lyman Wilbur, president of Stanford University, California, and William Allen White, editor, Emporia, Kan., and to membership on the International Health Board, Dr. David L. Edsall, dean of Harvard Medical School.—The foundation has authorized a system of fellowships in the biologic sciences, comparable to those now administered by the National Research Council, under foundation funds, in physics and chemistry and in the medical sciences.—Leave of absence has been granted to President George Vincent to enable him to go as a delegate of the United States to the Fifth Pan-American Congress, Santiago, Chile, during March and April. During his absence, the secretary, E. R. Embree, will perform the functions of president.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

Sisters of Charity, Richmond, Va., on the death of his widow, half of the \$6,000,000 estate of Major James H. Dooley, for the endowment of a hospital, and two orphanages for girls.

Reid Memorial Hospital, Richmond, Ind., \$100,000, by Daniel G. Reid of New York. Of this sum, \$50,000 is given outright, contingent on the city raising a like sum, for the purpose of enlarging the institution.

Portsmouth Hospital, Portsmouth, N. H., \$100,000 for the treatment of tuberculosis and for a contagious ward, by the will of Mrs. M. Jenness DeGarmendia, who died in Paris, France, January 9.

Nyack (N. Y.) Hospital, \$90,000, on the death of the beneficiaries, under the will of W. B. Conrad.

Norwood (Mass.) Hospital, \$60,000, in memory of her husband, by the will of Mrs. Alice H. Plimpton.

Norwich (N. Y.) Hospital, the greater part of a \$50,000 estate, under the will of Emery S. Reynolds.

Flushing (L. I.) Hospital, \$25,000, by the will of Mrs. A. M. Booth.

Rockingham Memorial Hospital, Harrisonburg, Va., \$10,000, by the will of Miss Clara Chaunceauline.

Roxbury (Mass.) Home for Aged Couples, \$5,000, and, after private bequests, the residue of the estate in equal shares to the Boston Floating Hospital, the Florence Crittenton League of Compassion, the Massachusetts Society for the Prevention of Cruelty to Children, the Industrial School for Crippled and Deformed Children, the Boston Nursery for Blind Babies, the Perkins Institution for the Blind, the Frances E. Willard Settlement and the Episcopal City Mission, by the will of Elizabeth Goldthwait Pierce of Newton, Mass. In each instance, a permanent fund, to be known as the "John Goldthwait Fund," is to be established, in memory of Mrs. Pierce's father.

St. Francis Hospital, Santa Barbara, Calif., \$5,000 by G. O. Knapp; \$1,000 anonymously, and \$500 by Mrs. Milton Robbins.

Barrett Hospital, Dillon, Mont., a  $7\frac{1}{4}$  acre site valued at \$2,000 by the State Bank of Dillon, and a large sum by Mrs. William Roe.

Chelsea (Mass.) Memorial Hospital and the Chelsea Day Nursery, each \$1,000, under the will of Edwin R. Hoag.

Beth Israel Hospital, New York, \$1,000, by the will of Israel W. Schenker.

Institute for Tuberculosis, Denver, and the Institute Maer Bell Hanes at Jerusalem, Palestine, each \$200, under the will of Dr. Adolph Harskovitz of Uniontown, Pa.

City Memorial Hospital, Winston-Salem, N. C., radium for the treatment of patients, by Bowman Gray of Winston-Salem.

## LATIN AMERICA

**New Argentine Hospitals.**—A new tuberculosis hospital was recently opened at Córdoba.—Work has already begun on the new hospital at Miramar.

**Funds for Brazilian Hospitals.**—An annual appropriation of 6,000 contos (more than \$700,000) was recently approved by the Brazilian Congress for maintenance of hospitals at Rio Janeiro. Repair and reequipment of several hospitals are already under way.

**Cuban Society Elects Officers.**—The Villalara Medical Society elected recently the following officers: president, Dr. Olivio Lubián; vice president, Dr. Tomás A. Etchandy; treasurer, Ramón Lorenzo; secretary, Oscar Esparza. Dr. Lubián, the president-elect, is also the editor of *Villalara Médica*.

**Mexican Welfare Society.**—This society has charge of funds in the federal district and twenty-two out of the twenty-eight states amounting to about 65,000,000 pesos. The income from these funds is used to support twenty-six homes, six foundling homes, three dispensaries, five old people's homes, ten schools, seventy-one hospitals, four insane asylums and fifty other institutions. The number of inmates is 15,698.

**Yearbook of a Child Welfare Association.**—El Patronato Oficial de la Infancia of Chile has published a most elaborate 250 page yearbook for 1923, reviewing its activities. Funds available in the fiscal year 1922 amounted to more than 613,000 pesos, and about 555,000 pesos was spent. The society supports eleven milk stations, a home for mothers, an infant clothing shop and a diet kitchen, and will support a maternity home (in construction). It has a capital of more than 1,400,000 pesos. The yearbook is a complete record as well as an entertaining volume. Besides descriptions, illustrations and personnel of all the hospitals and dispensaries at Santiago, the book contains material of general interest.

## FOREIGN

**International Congress on Comparative Pathology.**—Our foreign exchanges state that the second International Congress on Comparative Pathology is now definitely announced to meet at Rome, Oct. 7 to 14, 1923. Seventy communications have already been listed. Prof. E. Perroncito, 40 Corso Valentino, Turin, is in charge.

**Federation of Scientific Societies in Belgium.**—The *Liège médical* relates that delegates from all the chemical, medical, mathematical and other scientific societies of Belgium recently convened at Brussels. The president of the federation is Professor Stockis of Liège, and the secretary is Dr. Renaux of the Pasteur Institute of Brussels.

**Appeal for Candidates for Fellowships.**—The *Nederlandsch Tijdschrift* publishes an appeal for candidates for the fellowships offered by the scientific committee of the Netherlands-America Foundation. Netherlands university students or recent graduates who may wish to study for a year or less in the United States are asked to present their credentials to Prof. H. A. Brouwer at Delft. The number of scholarships is small.

**The League Against Syphilis.**—The first meeting of the international league against social disease was held in Paris, February 25, under the presidency of M. Barthou. The queen of Belgium, founder of the league, was represented by the Belgian ambassador. A world-wide campaign will be conducted against venereal disease in the near future, it was announced. The official title of the organization is the League Against Syphilis.

**Importation of Foreign Drugs Into Roumania Regulated.**—A recent order issued by the ministry of public welfare forbids the importation and sale of foreign drugs in Roumania except under the following conditions:

The manufacturers must apply in writing for a license and state the value, quality and quantity of their drugs.

Chemical analysis of the drug must be performed by a competent analyst, whose certificate must be attached to the letter of application, together with an official certificate to show that the sale of the drug is permitted in the country of its origin.

Every package must be labeled in Roumanian with the name and formula of the preparation, and each application must be accompanied by ten samples of the drug.

**Multiple Sclerosis in Switzerland.**—The neurologists of Switzerland, who have long been impressed with the prevalence of multiple sclerosis in that country, have induced the public health authorities to aid them in a collective inquiry on the subject. Questionnaires are to be sent to all practitioners of medicine for information as to the prevalence of



the various types of the disease, but especially the type suggesting spastic spinal paralysis, which is the most common form in Switzerland.

**No Reciprocity Between Hungary and Roumania.**—Roumania announced in 1922 that Hungarian medical diplomas would not be acknowledged in Roumanian territory, as a reprisal, for Hungary's long standing failure to recognize diplomas from the universities of Roumania. This has seriously affected hundreds of students in the newly acquired parts of Roumania. In the University of Cluj, where formerly the Hungarian language was used, the Roumanian language has been adopted. The advanced medical students, who could not learn Roumanian and carry on their studies at the same time, went to the University of Budapest to finish their education and obtain their medical diplomas. Now, on returning to their homes, they find themselves prohibited from practicing, although their own language is still spoken in Transylvania, where even the Hungarian laws are still in force.

**Russia's Biologic Crisis.**—In his report on "Epidemics in Russia Since 1912," Professor Tarashevich states that Russia will be fortunate if she emerges from the present crisis with the loss of only 20 per cent. of her population. The crisis is described as not only political and economic but also biologic, because of the disturbances which it has caused in the domain of human physiology and pathology. Not only are epidemic diseases, such as typhus, relapsing fever, intestinal infection, malaria and scurvy, which have always existed in Russia, aggravated both in prevalence and in virulence, but nearly all other epidemic infectious diseases have been greatly increased, hitherto unknown diseases have been observed, and there has been an extension of many noncontagious diseases, such as disorders of the nervous system and the heart, and general functional disorders. Behind all this stands the famine, which has caused millions of deaths, and has lowered the stamina and physical standards of the whole Russian race.

**Personal.**—Dr. Pasteur Vallery-Radot, grandson of Louis Pasteur, gave a lecture before the Royal Society, London, February 2, in connection with the Pasteur centenary. Dr. Vallery-Radot is touring England in commemoration of the centenary, under the supervision of the Alliance Française. —By resolution of the Royal College of Physicians, London, the name of Dr. David A. C. Pearce has been expunged from the list of licentiates. —Prof. Grafton E. Smith delivered the Montgomery Lecture before the Royal College of Surgeons of Ireland, January 29. —Dr. Leon Bernard of the University of Paris, secretary of the National Antituberculosis Association of France, arrived in America recently, to study American health methods. —Prof. Camillo Golgi has been given an honorary degree by the Paris medical faculty. —Prof. T. Weiss was recently presented with a souvenir tablet on the occasion of his retirement from the chair of clinical surgery at Nancy, having reached the age limit. —Dr. F. Ingerslev of Saxkøbing, Denmark, has been elected to membership in the Union internationale contre la tuberculose. —The Academia de Medicina at Madrid recently unveiled a tablet bearing a tribute to the efforts and long service of the librarian, Dr. Fernández Caro, senator and president of the Spanish Hygiene Society. —An album with more than 1,800 signatures was presented to Professor Recasens of Madrid, with an address expressing gratitude for his work as dean of the medical school. He is credited with having initiated the interchange of university professors and numerous improvements in technical equipment. —The *Medicina Ibera* relates that the city authorities of Zaragoza presented Dr. Martínez Vargas with a gold medal. He is professor of pediatrics at Barcelona, and a leader in welfare work for children. —Dr. Sieur, the medical inspector general of the French army and president of the medical consulting staff in the ministry of war, was given an ovation recently as he left the service, having reached the retiring age. Vincent is his successor.

#### Deaths in Other Countries

Dr. James Ritchie, Irvine professor of bacteriology at the University of Edinburgh, January 28. —Dr. Thomas Wood of Edinburgh, at Lisbon, Portugal, January 24. —Dr. J. W. Ballantyne, lecturer on midwifery and gynecology to the School of Medicine for Women, Edinburgh, past president of the Edinburgh Obstetrical Society, fellow of the American Association of Obstetricians and Gynecologists and honorary member of the American Child Hygiene Association. —Dr. Thomas Higgins was assassinated at his home at Mary-

borough, Ireland, February 12. —Dr. Oscar Freire, professor of legal medicine at Bahia, who has been giving a course of lectures in the S. Paulo medical school, died recently at S. Paulo, aged 42. He was the founder of the Sociedade de Medicina Legal at Bahia and a frequent contributor to scientific literature. —Dr. F. La Torre, professor emeritus of obstetrics at the University of Rome, author of several textbooks, founder and director for twenty-five years, of the *Clinica Ostetrica*, aged 76. —Dr. A. Testaz of Bex, Switzerland, aged 64. —Dr. A. Roskam of Liège, president of the Société médico-chirurgicale, and author of works on internal medicine and neurology. —Dr. Isidro Giol de Diego, at Madrid. —Dr. Ernesto B. Salvá of Santa Fe, Argentina, aged 58. —Dr. V. Chirivino, instructor in skin diseases and syphilis at the University of Naples, and a frequent contributor to the literature of these specialties, aged 53.

#### CORRECTION

**Expansion of New York Academy of Medicine.**—Dr. W. G. Thompson writes that the announcement made in a recent issue of THE JOURNAL under the heading "Expansion of Academy of Medicine" should be corrected to read as follows: "The Rockefeller Foundation has not contributed \$1,000,000 for the new building, but has given approximately that sum toward maintenance of the academy and expansion of its educational work. The Carnegie Corporation has contributed the cost of the new building to the extent of \$1,000,000. Thus the academy of medicine furnishes the land, the Carnegie Corporation the building, and the Rockefeller Foundation the endowment."

## Government Services

#### Aviation Examining Units Authorized

Pursuant to instructions of the Secretary of War, the organization of the following aviation physical examining units, organized reserves, has been authorized: Aviation Physical Examining Unit No. 6 (a New Jersey state unit); No. 7 (Tennessee), No. 10 (Iowa), No. 14 (Tennessee), No. 15 (Pennsylvania), No. 2 (California) and No. 5 (California).

#### Survey Vessels to Have Medical Officers

The House of Representatives acted favorably, February 19, on the bill providing medical and hospital supplies for the officers and seamen of the Coast and Geodetic Survey. By the terms of the bill, the U. S. Public Health Service is authorized to detail a medical officer on each of the vessels of the survey while at sea. The bill passed without a record vote, and went to the Senate.

#### First Class in Physiotherapy Graduates

The first class in physiotherapy at Walter Reed General Hospital, Washington, D. C., was graduated, February 7. Dr. Frank B. Granger, lieutenant colonel, M. O. R. C., Boston, spoke on the development of physiotherapy, emphasizing the effect the World War had in placing physiotherapy on a scientific basis. Surg. Gen. Merritte W. Ireland presented the certificates of proficiency. The graduates, with a single exception, have accepted appointments as reconstruction aides in U. S. Army hospitals.

#### Director of Veterans' Bureau Appointed

The President has nominated Brig. Gen. Frank T. Hines, U. S. Army, retired, Washington, D. C., director of the U. S. Veterans' Bureau, succeeding Col. Charles R. Forbes, who resigned recently. Brigadier General Hines was chief of the transportation service during the World War.

#### Additional Appropriation for Disabled Veterans

Representative Langley of Kentucky, chairman of the House Committee on Public Buildings and Grounds, announced this week that an additional \$5,000,000 would be necessary to provide adequate hospital facilities for dis-



abled war veterans. This statement was made after Chairman Langley had conferred with President Harding on the subject. The proposed \$5,000,000 appropriation is in addition to the \$17,000,000 recently carried in the so-called second Langley bill, which has already been expended or authorized to be expended for hospitals now under construction. An urgent need for more money exists, according to Congressman Langley, who indicated that the President had given his sanction to whatever additional appropriations are necessary.

## Foreign Letters

### PARIS

(From Our Regular Correspondent)

Feb. 2, 1923.

#### To What Extent the Sending of Pamphlets May Constitute Illegal Practice of Medicine

A Lyons herbalist became the proprietress of a botanical laboratory in which the medicinal decoctions (tisanes) of an abbé were manufactured. She solicited clients by means of circulars and advertisements in the public press, in which she advised patients suffering from any one of twenty diseases enumerated to begin the use, if they wished to recover, of the medicinal decoctions recommended in a pamphlet, giving twenty modes of treatment, of which the abbé was the author and which was furnished gratis to all persons requesting it. In response to letters, the herbalist sent out an advertising pamphlet, the cover of which bore a picture of the abbé, and the preface of which was signed by him as evidence of his endorsement. The results of a therapeutic method which consisted in the use of the medicinal decoctions of the abbé were set forth with extravagant praise. The cost of the various modes of treatment was plainly stated, and the treatment that should be followed in each type of disease was specified.

The profits realized from the sale of these medicinal decoctions amounted to about 150,000 francs a year. The abbé, who was not a doctor of medicine, had granted to the herbalist, in return for the payment of certain sums monthly, the right to use his name and also to prepare and sell the medicinal products that were manufactured according to his formulas. It was likewise with his authorization that the pamphlet had been edited, published and distributed. When the charge of practicing medicine illegally was brought against them, the abbé and the herbalist set up in their defense the facts that they had made no examination of their patients, and that no written prescription had been given in connection with the application of the appropriate treatment. The court of cassation (the highest court of France) refused to accept this interpretation of their acts, and set forth that the law does not state that examination of the patient and the mode of writing used in prescribing treatment are the pivotal considerations in respect to the charge of practicing medicine illegally. This court decided that a misdemeanor had been committed, since, with the foreknowledge of the abbé, the herbalist gave instructions to patients and participated habitually in the treatment of their diseases. While it is true that advice given in a general way, in a book or pamphlet, in regard to the care to be accorded patients, does not constitute in itself illegal practice of medicine, the case is different when certain care and treatment are prescribed for a patient individually and in a specific instance. The circumstance that made it possible for the court to uphold the charge that a misdemeanor existed is the fact that personal letters were addressed to the patients, in which the cost of treatment was stated and in which the treatment to be observed was specified.

#### Photogenic Properties of Cocain

Dr. G. Salles calls attention to a cause of cocainomania, which does not seem to have been pointed out heretofore; namely, the use of cocain by motion picture actors to increase the photogenic capacity of the eyes. The resulting increase of ocular tension and the dilatation of the pupil give to the eyes and to the face of the artist an expression of astonishment, depth and brilliance, and sometimes of wildness. It goes without saying that this use of cocain, instead of enhancing the gifts of the actor, soon develops a mania, and induces degradation of character and the loss of the fundamental qualities of an artist.

#### Voice of Opposition Against Secret Remedies

The Société de thérapeutique adopted recently the following resolution:

The Société de thérapeutique cannot preserve its character as a great scientific society unless it refuses to act in any way that seems to accord its patronage to private interests. Consequently, it has decided to return to the practice adopted previous to 1914, and henceforth it will not accept from its members, nor allow its members to present, any communications that deal with therapeutic products the chemical formula of which is unknown, or, in the case of galenicals, if the quantitative formula is not made public.

#### Protection of the Professional Reputation of a Physician

Suit was recently brought against an oculist of Dijon by the father of one of his patients to collect 100,000 francs damages for a grievous error, alleged to have been committed by the oculist, which resulted in the enucleation of the patient's eye. The medical experts, in their testimony, declared that there was no evidence that the oculist had neglected the dictates of common sense, but that, on the contrary, his actions were in conformity not only with prudence but also with the guiding principles of science: both as regards the establishment of the diagnosis and the application of treatment he had adopted a line of conduct that was absolutely normal and in accord with recognized medical standards. In view of this testimony, the plaintiff expressed a willingness to withdraw his complaint, but the oculist set up a cross-action against the plaintiff and demanded an award in his own favor. The court of Dijon approved the oculist's claim, and required his opponent to pay the physician, by way of damaged interests, the sum that he had demanded. The decision of the court was based on evidence that the plaintiff in the primary action had not confined his charges to the imputation that the physician was guilty of a characteristic professional error, but, without necessity, he had accused the defendant of "having carried out the examination of the patient with haste and an unjustifiable precipitation, of having committed a grave error, and of having been guilty of gross negligence, such as would constitute, aside from all questions of medical theory and method, evident incapacity and neglect of the rules of sound reasoning and prudence such as any ordinary human being is supposed to apply." The court regarded these affirmations as a malicious endeavor to injure the physician's reputation. To be sure, the law permits one to injure the reputation of others if it is done in the exercise of one's own individual rights. A patient is entitled to bring complaint against his physician; but, in defaming him without necessity, he exceeds his rights. The rights of the patient cease where the rights of the physician begin. The physician, too, is entitled to protection against imputations of such a nature as will reflect on his character as a professional man and will be certain to awaken a prejudice against him.

#### Propaganda for Remedies Against Tuberculosis

All physicians of Paris, and doubtless also those in the provinces, received recently a bulky package on which was inscribed in large letters: "The Fight Against Tuberculosis." Great was their disappointment when, on opening the package, they found only a stock of pamphlets vaunting the treatment



of tuberculosis with endotine, the "Gabrilovitch purified tuberculin," which, according to these brochures, was a "veritable specific remedy against tuberculosis." But what was more serious, in a daily paper there appeared a long article entitled, "A Light in the Darkness, Determining the Direction of the Fight Against Tuberculosis." This extolled the great merits of the Gabrilovitch tuberculin and tended to make the general public believe that this tuberculin is "at last a truly therapeutic and a truly specific remedy" against tuberculosis. And how could the general public refuse to believe these affirmations when there appeared, under the article in question, the signature of Prof. Gabriel Petit, of the Academy of Medicine. The public does not know that Gabriel Petit is a professor in a school of veterinary medicine.

#### MADRID

(From Our Regular Correspondent)

Jan. 18, 1923.

#### Epidemic Infantile Paralysis in Madrid Province

Dr. Lafora has published an article on an epidemic of infantile paralysis occurring not far from Madrid. So far no epidemics had been reported in Spain, although some small outbreaks, such as the one reported by Dr. Fernández Sanz at Manzanares, Ciudad Real, in the summer of 1917, had attracted attention. The outbreak now described is worthy of notice both because of its being so near Madrid and because of its continuing to spread. It began about three weeks ago among the children in Chinchón. Dr. Lafora has seen three cases personally, and has heard of six new cases in the last few days. No deaths have been reported, but the paralysis has persisted over twenty days in a number of cases. Dr. Lafora's article contains a brief account of the disease, symptoms and treatment, including Rosenow's advice as to the administration of immune horse serum. The authorities have heeded Dr. Lafora's report, and have adopted measures to prevent the spread of the disease.

#### Dr. Madinaveitia's Death

Dr. José Madinaveitia, noted for his constant efforts on behalf of labor, died recently, at Bilbao, his home town. He lost his immense practice in the Basque provinces on deserting the Basque nationalist party for international socialism. Even his own people repudiated him. He then closed his office and devoted his science, his money and all his energies to a medicosocial campaign among workers. At Eibar, he created a garden for convalescents, changing a barren hill into an inviting resort, and organized libraries, lecture halls and cooperative societies. When the famous mining strike took place at Vizcaya, Madinaveitia immediately began making provision for the strikers' children, that the parents might better stand the conflict. He took whole trainloads of children to Bilbao. The strikers, however, showed him no gratitude for this action. When his efforts at political reform failed, he went back to his practice, as he also went back to his former church, when about to die.

#### Increase of Students and Decrease of Professors in Spanish Schools

Dr. Eleicegui, editor of *España Médica*, has published an article protesting against the alleged greed of professors in medical schools. The number of medical students, already too large, continues to increase, and the school rooms are overcrowded. In some classes, the enrolment exceeds 600 or 700, and, to aggravate the situation, the teaching personnel is diminishing. The professors, taking advantage of a law intended for other government employees and aiming to exclude professors from its operation, have devised what is called "la martingala" or combination of chairs. When a vacancy occurs, instead of appointing a new professor, one

of the old incumbents is appointed, and he is thus entitled to receive a 50 per cent. salary increase for filling two chairs. Thus, through a false sense of economy, courses already inadequate through the lack of sufficient professors are poorly taught, as the one professor, who could not attend properly to one subject, attempts to present two.

The fault lies with the secretaries of education, who have shown lack of strength, in addition to favoritism, on such occasions. On the one hand, they have allowed their friends to occupy several chairs, so that they may collect several salaries; and, on the other hand, they have exempted students from compulsory attendance. There is no question that teaching in Spain has suffered a serious setback since examining boards have been discontinued and the passing marks left to the discretion of each professor. The result has been an enormous decrease in the number of failures, and a flood of brand new physicians pouring out every year. Thus, we are preparing a medical proletariat, really pitiable, because of both its incompetence and the hard struggle it must make to earn a living.

#### Neumann Discusses Tone and Rhythm

In an interesting lecture before the National Academy of Medicine, Neumann of Vienna recently discussed the physiologic relationship between the static and the acoustic portions of the internal ear, which, in his opinion, parallel the anatomic relationship. He tried to show that Ewald's muscular tonus property is under the influence of acoustic impressions. To prove it, he described rhythm and musical sensations in man, and explained through them why we derive different impressions on hearing music played either rapidly or slowly on an organ. The cause of both the psychic and the physical effect produced by music must be traced to the anatomic relation between the static and the acoustic labyrinth. There is as close a relationship between the nerves that traverse the two, as among their respective original nuclei. Tone, rhythm, harmony and melody were discussed by the lecturer. He charmed the audience with his description of how rhythm, by stirring the static labyrinth, favors muscular tonus. He recalled that even among the deaf, who receive only subjective sensations, muscular tonus is superior to that possessed by those who cannot hear any sound at all. The oldest musical instrument, the drum, according to Neumann, was originally just a mortar covered with skin, the rhythm of work fusing with the rhythm of music. At the beginning, music, song and dance were inseparable, their exciting influence being so marked that primitive races, and later savages, danced and sang to certain simple but rhythmic tunes exacting such muscular effort as to tire them out.

#### Spanish Universities Go on Strike

The Spanish universities have gone on a strike: an unprecedented event in Spain and perhaps in the whole world. The deans of the different faculties at meetings presided over by the university rectors decided to close the schools until the superior police chief resigned. Because of some disturbance created by the students, police forces were mobilized. The students from other schools invited their medical colleagues to join in the protests, but met with a refusal. It so happened that, at that very moment, through some blunder, the police charged the students, clearing out both those willing and those unwilling to attend school. On the next day, when a policeman passed the medical school in a street car, some students insulted him. The officer drew his revolver and wounded four students. On the ground that the policeman acted on orders from the chief of police, rectors, deans and professors decided to close the schools until the chief was dismissed. This happened three weeks afterward, when there was a change of administration and a new cabinet was appointed. The minister of education, who happened to be a



professor, struggling between his duty to enforce the law and his wish to stand with his school associates, solved the difficulty by extending the length of the course for as many days as the strike might continue.

## BERLIN

(From Our Regular Correspondent)

Feb. 3, 1923.

### Proposed Reforms in the Medical Curriculum

In 1918, a movement (to which I have frequently referred) was launched to bring about certain reforms in the medical curriculum in Germany. Through the transactions of the special commission appointed by the government, which met in Berlin the end of November, the movement has taken on a more tangible form and the problems have been brought nearer to a solution. The commission was composed of representatives of the medical faculties of the various German universities, the medical profession, medical students, medical societies and health insurance societies, together with delegates of the governments of the several states constituting the commonwealth. The results of the manifold deliberations of the commission may be summed up thus: The course of medical study shall be lengthened and shall comprise twelve semesters in place of ten. The "*praktische Jahr*" (the year devoted to the practical application of previously gained theoretical knowledge), which has been quite generally opposed by the medical faculties, is approved for continuance, since the majority of the representatives, in harmony with the views of all the representatives of the medical profession, held that the *praktische Jahr* afforded future medical practitioners the sole opportunity of developing independent initiative under conditions in which they were thrown on their own resources, a matter of great importance in the practical training of physicians. In further extension of the idea of practical training, it was definitely recommended that all medical students should serve for an uninterrupted period of six months as "famulus," or assistant. This period of assistantship must not interfere with clinical instruction. Considerable latitude should be left to the students as to the exact manner of satisfying this requirement, the sole restrictions being that the whole period of assistantship may not be served during vacations, and that it may not be served before the seventh semester of study. The period of assistantship shall be utilized for practical training in internal medicine, surgery, obstetrics, and gynecology in general. The *praktische Jahr* should follow the final medical examination. Training in internal medicine and in obstetrics is compulsory. The remainder of the *praktische Jahr*, however, shall be open to a wide range of choice; especially in view of the fact that many future medical practitioners intend to serve, for a time, in institutes devoted to scientific research, and likewise because there is a pressing demand from such institutes for more assistants. From one to two months of the time required for internal medicine may be spent on children's diseases. Only two examinations will be given, as heretofore, throughout the course: the premedical examination and the final medical examination at the end of university instruction. Five semesters of study shall precede the premedical examination, and the further requirement is set up that during the fifth semester certain propedeutic clinical subjects, such as pharmacology, general pathology or bacteriology, shall be studied, in preparation for the clinical subjects to follow. More thorough instruction in physiology seems eminently desirable, and a course in physiologic chemistry, including laboratory work, is recommended. A period of service, during the first semesters, as attendants on the sick, which was demanded from many quarters, was not approved, it being held that such training might better be reserved for the

period of assistantship during the later semesters. The proposal to divide the final medical examination into two parts, one bearing more particularly on the natural sciences and the other on anatomy and physiology, was rejected by the commission. Training in the mounting of anatomic specimens shall, as heretofore, be given in two semesters, and the time devoted to the refinements of the subject shall be further restricted. The suggestion that botany and zoology be combined into a biologic lecture course and a test in biology was rejected. As heretofore, in a number of important clinical lecture courses attendance shall be compulsory, and evidence of attendance must be furnished. Evidence of attendance on courses in social medicine and in legal medicine and medical jurisprudence must also be secured. Lecture courses in pathologic physiology, psychology and social hygiene should be added to the medical curriculum. In the future, the premedical examination and likewise the final medical examination may be tried by candidates only twice, and the second test must be held before a collegiate body. The length of the final medical examination should be considerably shortened.

Now that the government commission has reported its recommendations, the preliminary work toward the revision of the medical curriculum would seem to have been accomplished. The next step in the procedure will be for the ministry of the interior, as the competent board of control in this case, to draft a bill giving consideration to the changes proposed by the commission, which will be acted upon in turn by the *Reichsrat* (council of the empire or commonwealth), in collaboration with the representatives of the several federated states.

### Health Insurance

In the reichstag committee on social politics it was decided, January 18, to raise to 2,400,000 marks the fixed annual income below which all persons must secure health insurance in the health insurance societies. The health insurance societies of Berlin are so far in arrears in the payment of fees due to physicians that the fees for service rendered in October were paid only a few days ago. So far, the physicians have received only about 16 per cent. of their fees, and this occurs at a time when the sum received represents only a fraction of the buying power it had at the time the service was performed. It is stated that 440 million marks in fees due physicians are in arrears. It will be readily understood that, under such circumstances, many physicians state they have not the funds with which to buy the food their families need.

### Establishment of Prussian Subdepartment of Physical Education

In the Prussian ministry of public instruction a new subdepartment of physical education has just been established. The Prussian ministry of public welfare has also created a subdepartment of juvenile welfare, including physical training. A council on juvenile welfare and juvenile welfare movements, including physical training, has been formed, with six special committees to deal with the various phases of the work.

### Help for Tuberculous Children

Through the collection of a large sum of money in foreign countries, it has become possible to supply supplementary food to about 20,000 children who are either tuberculous themselves or are exposed to the disease through tuberculous members of the family. The selection of applicants and the distribution of food take place only through the municipal welfare station for the tuberculous, the Landesversicherungsanstalt of Berlin, and the welfare station for the tuberculous at the Charité Hospital. The administration of the welfare



work is in the hands of the *Hauptgesundheitsamt* (central public health office) and the *Jugendamt* (child welfare bureau) of the city of Berlin. In Norway a special fund has been raised for the purchase of cod liver oil, and the welfare stations for the tuberculous in Greater Berlin will soon be in a position to distribute this valuable gift.

### PRAGUE

(From Our Regular Correspondent)

Feb. 1, 1923.

#### Pasteur Centenary

January 18, the official celebration of Pasteur's centennial anniversary took place in Prague at the Charles University. The ceremony was opened by the rector of the faculty, Prof. C. Horacek, and by the dean of the medical faculty, Prof. C. Weigner, in the old university hall. The senior of the medical faculty, Prof. J. Hlava, afterward gave a lecture on the importance of Pasteur's discoveries in the development of the medical sciences. He is one of the few Czech scientists still living who knew Pasteur personally. The lecture of Prof. I. Honl followed, on the doctrine of Sacharow, who tries to defend the theory of spontaneous generation sixty years after Pasteur's discoveries. The ceremony was attended by the minister of public health, the Reverend Dr. Sramck, the French ambassador, representatives of other states, members of all the university faculties, and many students.

#### Health Magazine for Czechoslovakia

The Czechoslovak Red Cross is now issuing a popular health magazine under the name *Nation's Health*, beginning with the year 1923. This magazine developed from the health leaflet which accompanied the *Red Cross Monthly News* and which enjoyed a considerable popularity. The magazine is of limited size and is sold at a low price in order to make it accessible to the largest possible circle of readers. The magazine will be published monthly, and is to be edited by Dr. C. Driml. It is intended primarily for the rural population. It is hoped that this magazine will at least partly satisfy the desire for public health education, which has become apparent in the country in the course of the last few years.

#### Rural Hygiene Demonstration

The rural hygiene demonstration that was started in Kvasice Moravia under the auspices of the ministry of health, with the financial assistance of the International Health Board of the Rockefeller Foundation, is already bearing fruit. The Czechoslovak Red Cross is about to start a similar demonstration at Lany, the residence of the president of the republic. This demonstration will be gradually extended to include the whole district of Slany, where the community is located. The demonstration in the district, which includes a population of about 50,000, will be supported by the national council of social hygiene, which is a federation of all important private health and social agencies in the republic. Both the ministry of health and the ministry of social welfare will be asked to concentrate their efforts on this district for some time. The district is located near Prague, and it is intended to use it as a place for field education of the public health and social personnel that is to be trained in the school of hygiene now under construction. The district is well suited for this purpose, because it contains industrial as well as purely rural sections.

#### Milk Supply of Prague

The division for study and reform of public health activities is undertaking a study of the milk supply for the city of Prague, under Dr. J. Jurena, who has recently returned to this country from his studies in the United States. The milk

situation during the war was appalling, and control of the milk supply was virtually suspended because the city authorities were glad to see milk coming to Prague no matter how bad it was. During the two years that have elapsed since the close of the war, the supply of the city has again become normal, but the adulteration of the milk, to which the dealers had become accustomed, apparently continued. The two laboratories for the control of food inspected all the stores where milk was sold, in July, 1922, and found the milk adulterated in about three fourths of them. When inspections were made the second and third times, the number of cases in which the milk was found below the standards admitted by the food laboratory fell to 4 per cent. Nevertheless, the situation cannot be considered satisfactory, because the standards which the laboratory for food control recognizes are altogether too low. No bacteriologic examination of the milk is made, purely chemical analyses being depended on. The lowest percentage of fat that is accepted by the food laboratory is 2.8, which is undoubtedly too low. It is the purpose of the study now under way to determine the fat content of the milk as it is produced in the country, and to ascertain the hygienic conditions under which the milk is being produced and transported to the city. Bacteriologic control of the milk will be largely depended on in judging these conditions.

#### Examinations for Health Officers

The ministry of health is proceeding to the reorganization of the education of public health officers. Till now, all the medical men who served in the state health service have had to undergo an examination before a board nominated for this purpose by the minister of health. Two years of practice in a general hospital were required before the candidate was admitted to the examination. No regular courses were prescribed prior to the examination, but it became the custom for candidates to pass courses of three months' duration given at the university before they appeared before the examining board. The recent law on the nationalization of health services brought in many local health officers who were formerly accepted without the examination. All those who have been serving for less than five years will have to undergo this examination. The ministry intends to institute a regular course for the candidates of the state public health service in the institute of hygiene that is being built. This is being opposed by the medical faculties, which assert that they perform this function for them. The solution will probably be a compromise between the medical faculties and the institute of hygiene to the effect that some of the lectures in the course will be given by the university professors, and the rest by the members of the institute.

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## Marriages

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LELAND GILLELAND HEDGES, Chicago, to Miss Ethelyn Blanche McMillan of Rochester, N. Y., January 10.

ROBERT HALL HARRINGTON to Miss Ruth Ione Hanmoud, both of Richmond, Va., December 23.

HENRY TAYLOR COMPTON to Miss Sarah Millburn Walthour, both of Savannah, Ga., January 24.

ERASTUS L. MILLER, Crossett, Ark., to Miss Fannie C. Spurluck of Lake Village, February 13.

WILLIAM HENRY WASHBURN to Mrs. Elizabeth D. Shrer, both of Milwaukee, February 3.

LEVER F. STEWART to Mrs. Elizabeth Eyster, both of Clearfield, Pa., January 25.

FRED W. HARK, Iowa City, to Dr. FLORENCE E. WHITE of Des Moines, recently.

ARTHUR E. BENGE to Miss Clara Beard, both of Iowa City, recently.



## Deaths

**Julius Parker Sedgwick** ☉ professor of pediatrics and chief of the department of pediatrics at the University of Minnesota Medical School since 1915, and professor of pediatrics at the University of Minnesota Graduate School of Medicine, Minneapolis; died, February 25, at his home in Minneapolis, following a prolonged illness. Dr. Sedgwick was born in Wrightstown, Wis., in 1876. He received the degree of bachelor of science from the University of Nebraska in 1896 and of doctor of medicine from Rush Medical College, Chicago, in 1899. Following his graduation he served as intern at Alexian Brothers' Hospital, Chicago, and later was made assistant physician at the Fabiola Hospital, Eveleth, Minn. During the World War, Dr. Sedgwick was commissioned a major in the Medical Reserve Corps and served in France with the American Red Cross by which he was appointed to work out a health program for children and mothers who had lived in the war zone for three years. On his return to America in 1918 he was named consulting hygienist on pediatrics to the Surgeon General, U. S. Public Health Service. At the same time he also was engaged in an investigation of the relative merits of natural and artificial infant feeding in connection with clinical work at the University of Minnesota. Dr. Sedgwick was a member of the American Pediatric Society, the Chicago Pediatric Society and the Central States Pediatric Society. He was a contributor to American and European journals on diseases of children and recently edited a translation of Feer's "Text Book of Pediatrics."

**George Albert Hayes Smith**, Freeport, N. Y.; Long Island College Hospital, Brooklyn, 1898; member of the Medical Society of the State of New York; formerly assistant professor of diseases of the eye at his alma mater; at one time on the staff of the Brooklyn Eye and Ear Hospital, Brooklyn; aged 46; died, February 10, at the Post-Graduate Hospital, New York, from pneumonia, following an operation for biliary calculi.

**Alfred Nathan Strouse** ☉ New York; Medical Department of Columbia College, New York, 1885; member of the American Academy of Ophthalmology and Oto-Laryngology, and the New York Academy of Medicine; on the staff of the City Hospital and of the Asylum of St. Vincent de Paul; aged 59; died, February 12, following an operation for strangulated hernia.

**Israel J. Desroches**, Montreal, Que., Canada; University of Montreal Faculty of Medicine, Montreal, 1877; at one time president of the Medical Society of Montreal, and corresponding member of the Société des sciences physiques, naturelles et climatologiques d'Alger, and the Société française d'hygiène de Paris; died recently, aged 72.

**Louis Henry Jacob** ☉ Philadelphia; Medico-Chirurgical College of Philadelphia, 1901; member of the American Urological Association and the Philadelphia Genito-Urinary Society; on the staffs of the Jewish and Polyclinic hospitals; aged 43; died, January 8, from appendicitis.

**Daniel Louis Humfreville**, Pasadena, Calif.; Rush Medical College, Chicago, 1896; member of the Medical Society of the State of California; formerly professor of physiology at the Ensworth Medical College, St. Joseph, Mo.; aged 48; died, February 8, from heart disease.

**Elmor E. Morris**, New Haven, Ind.; Eclectic Medical Institute, Cincinnati, 1902; member of the Indiana State Medical Association; aged 54; was instantly killed, February 4, when the automobile in which he was driving was struck by an interurban car.

**John Weldon**, Willimantic, Conn.; New York University Medical College, New York, 1883; at one time member of the faculty of Fordham University, New York, and president of St. Joseph's Hospital; aged 64; died, February 18, from pneumonia.

**Douglas Adair White**, Syracuse, N. Y.; College of Physicians and Surgeons, Baltimore, 1887; member of the Medical Society of the State of New York; formerly superintendent of the Hospital of the Good Shepherd; aged 62; died, February 1.

**Louis Nishawitz**, Hackensack, N. J.; Long Island College Hospital, Brooklyn, 1922; intern at the Hackensack Hospital;

aged 24; was instantly killed, February 16, when the ambulance in which he was riding was struck by a train.

**Frank B. Morgan**, Huntington, Ind.; Medical College of Indiana, Indianapolis, 1897; member of the Indiana State Medical Association; for fifteen years county coroner; aged 53; died suddenly, February 5, from heart disease.

**Theodore Carroll Griest** ☉ Put-in-Bay, Ohio; Starling-Ohio Medical College, Columbus, 1913; aged 33; was drowned, February 17, when the automobile in which he was driving fell through the ice on Lake Erie.

**Henry Latimer Rudolph** ☉ Gainesville, Ga.; University of Maryland School of Medicine, Baltimore, 1902; served in the M. C., U. S. Army, with the rank of captain; aged 43; died, January 28, from pneumonia.

**Carl John Larson** ☉ Negaunee, Mich.; University of Michigan Medical School, Ann Arbor, 1904; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 41; died, January 11, from urcemia.

**Cora B. Murdock Palmer** ☉ Logansport, Ind.; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1906; member of the American Psychiatric Association; aged 37; died, January 26, from pernicious anemia.

**James R. Scott**, Edgewood, Ill.; Cincinnati College of Medicine and Surgery, 1863; Civil War veteran; practitioner of Edgewood for more than half a century; aged 82; died, February 8, from senility.

**Albert I. Lawbaugh** ☉ Calumet, Mich.; Long Island College Hospital, Brooklyn, 1870; president of the Michigan State Medical Society, 1908-1909; aged 78; died, February 15, from carcinoma.

**Thomas J. Kennedy**, Coolidge, Ga.; Memphis Hospital Medical College, Memphis, Tenn., 1887; member of the Medical Association of Georgia; aged 60; died, February 8, from heart disease.

**Oscar Von Barandy**, South Bend, Ind.; University of Budapest, Hungary, 1900; member of the Indiana State Medical Association; aged 45; died, February 8, from cerebral hemorrhage.

**George H. Wuchter**, Wadsworth, Ohio; University of Pennsylvania School of Medicine, Philadelphia, 1880; veteran of the Spanish-American War; aged 63; died, February 3, of chronic nephritis.

**George Snow Fortier**, Chicago; College of Physicians and Surgeons, Chicago, 1907; member of the Illinois State Medical Society; aged 51; died, February 20, from pneumonia.

**Alfred O. Strout**, Parkersburg, Iowa; Chicago Medical College, Chicago, 1875; member of the Iowa State Medical Society; aged 73; died, February 13, from pneumonia.

**William Henry Nusbaum**, Indianapolis; Miami Medical College, Cincinnati, 1881; formerly state senator; aged 66; died, February 8, following a long illness.

**Carl Frederick Bachmann**, Neillsville, Wis.; Jefferson Medical College of Philadelphia, 1896; also a druggist; aged 48; died suddenly, February 2.

**Wilfrid Henry Chevette**, Holyoke, Mass.; University of Montreal Faculty of Medicine, Montreal, Que., Canada, 1903; aged 44; died, January 26.

**Cassius W. Gould**, Chicago; University of Buffalo (N. Y.) Department of Medicine, 1872; aged 72; died, February 20, from pneumonia.

**Joseph Oliver Balcar** ☉ West Franklin, Ill.; Rush Medical College, Chicago, 1918; aged 30; died, February 12, from appendicitis.

**Thomas J. Shuell** ☉ Cedar Rapids, Iowa; State University of Iowa College of Medicine, Iowa City, 1880; aged 69; died, February 15.

**A. Minnie Russell**, Speer, Ill.; Woman's Medical College of Baltimore, 1896; aged 58; died, February 6, from pneumonia.

**Leota S. Cunningham**, Tulsa, Okla.; Hahnemann Medical College and Hospital of Chicago, 1907; aged 48; died, February 7.

**William Eben Ireland** ☉ Washington C. H., Ohio; Starling Medical College, Columbus, 1882; aged 70; died, February 8.

**Charles Summer Judy** ☉ Miamisburg, Ohio; Medical College of Ohio, Cincinnati, 1887; aged 61; died, February 5.

**Franklin Pierce Tyler**, Galesburg, Ill.; Rush Medical College, Chicago, 1885; aged 68; died, February 7.



## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

### MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

**Vita Oil.**—Loring J. Barker of Berkeley, Calif., who did business as the Vita Oil Co., shipped in August, 1917, a quantity of this product from California to Indiana which was misbranded. The Bureau of Chemistry analyzed this preparation and reported that it consisted essentially of non-volatile vegetable oil, mineral oil and volatile oils, including turpentine, clove, and cinnamon oils with extractives of red pepper and pepper. The product, which was labeled in part "Dr. Smith's Caloric Vita Oil," was falsely and fraudulently represented as an effective treatment, remedy and cure for diphtheria, pneumonia, croup, rheumatism, weak joints, colic, lumbago, earache, painful menstruation, caked breasts, diarrhea, lockjaw, itch, spinal meningitis and many other conditions. In September, 1920, Loring J. Barker pleaded guilty and was fined \$100.—[Notice of Judgment No. 10940; issued Jan. 4, 1923.]

**Gold Medal Brand Sexual Pills.**—The S. Pfeiffer Mfg. Co., St. Louis, Mo., shipped in October, 1920, a quantity of this preparation that was misbranded. The federal chemists reported that analysis showed the pills to contain phosphorus and extracts of damiana and nux vomica. The statements regarding the curative effects of the pills appearing on the labels of the boxes and cartons were false and fraudulent, as the preparation contained no ingredient or combination of ingredients capable of producing the effect claimed. In May, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[Notice of Judgment No. 10864; issued January, 1923.]

**Lovett's Pills.**—A quantity of "Dr. Lovett's Pills" invoiced by Dr. Lovett Medicine Co., New York City, were shipped from New York to Los Angeles in November, 1921. The Bureau of Chemistry reported that analysis showed the pills to contain iron sodium, and potassium carbonates and sulphates with traces of plant extractives. Among the claims made on or in the trade package for this preparation were:

"This . . . purifier of the blood is . . . the only infallible specific to cure radically and permanently general debility . . . headache, rheumatism, sexual debility, sterility, malarial fevers, diseases of the liver, syphilis, scrofula," etc.

These and a number of equally wild claims were declared false and fraudulent and in June, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be disposed of in accordance with the provision of the Food and Drugs Act.—[Notice of Judgment No. 10869; issued January, 1923.]

**Savanol.**—G. P. Steyh, St. Louis, Mo., shipped in May, 1921, from Missouri to California a quantity of "Savanol" which was misbranded. The federal chemists reported that analysis showed Savanol to consist of capsules containing a saponifiable oil with traces of savin oil, apiol and aloin. The claims made on the trade package for this preparation were to the effect that it was an emmenagogue. These claims were declared false and fraudulent and in April, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be disposed of according to law.—[Notice of Judgment No. 10872; issued January, 1923.]

**Locock's Cough Elixir.**—A quantity of "Dr. Locock's Cough Elixir," alleged to have been shipped in interstate commerce by I. L. Lyons & Co., Ltd., New Orleans, in August, 1919,

was declared misbranded. The federal chemists reported that analysis of a sample showed it to consist essentially of extracts of plant drugs, including ipecac and squill, small amounts of morphin and acetic acid, sugar and water. The trade package contained statements to the effect that the product was recommended as hastening a cure for incipient consumption, pneumonia, whooping cough, asthma, pains in the joints, bones and muscles, etc. These claims were declared false and fraudulent and in May, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[Notice of Judgment No. 11024; issued January, 1923.]

**Sex-Co Restorative Tablets.**—The Clyde Collins Co., Memphis, Tenn., shipped in April, 1921, a quantity of Sex-Co Restorative Tablets that were misbranded. The federal chemists reported the analysis showed the tablets to contain strychnin, extract of damiana, iron and a phosphorus compound. The tablets were recommended as an aphrodisiac and for "Bad Blood, Sexual Weakness, Loss of Appetite, Wasting Diseases and Nervous Conditions of all Kinds." Since the tablets contained no ingredient or combination of ingredients capable of producing the effects claimed, the claims were declared false and fraudulent. In June, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[Notice of Judgment No. 10760; issued Dec., 1922.]

**Compound Tansy, Pennyroyal and Cotton Root Pills.**—The Allan-Pfeiffer Chemical Co., of St. Louis, Mo., shipped in June, 1920, a quantity of these pills which were misbranded. The federal chemists reported that they consisted essentially of iron sulphate, aloes and oil of pennyroyal. They were recommended as a "Safe and Effectual Remedy in Suppressed or Painful Menstruation." As the claim was false and fraudulent, the product was declared misbranded and in May, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[Notice of Judgment No. 10822; issued Dec. 23, 1922.]

## Correspondence

### MILK GOATS AND MALTA FEVER

*To the Editor:*—It is now well known that many dairy cows are tuberculous, and that a high percentage of bone, joint, gland and abdominal tuberculosis is due to tubercle bacilli of the bovine type. In order to avoid this source of infection many physicians have interested themselves in the Swiss milk goat whose high degree of immunity to tuberculosis has been well known in Europe for many years.

It has been known for a long time that goats are susceptible to a disease known as Malta fever and that this disease may be transmitted to man through the agency of goat's milk.

In January, 1911, I located in the hill country of southwest Texas to secure the advantages of its excellent climate. I met here an able physician, London trained and a keen observer. This physician, who had been doing an extensive practice over one of the largest mohair goat raising sections of the country for twenty years, had made a clinical diagnosis of Malta fever on several occasions.

In the spring of 1911, Dr. Joseph Walkup, Captain, M. C., U. S. Army, visited me at Kerrville, Texas; his attention was called to the fact that cases presenting clinical symptoms of Malta fever were occasionally seen in Edwards County and near the Mexican border. Dr. Walkup said that he would bring the matter to the attention of the proper army officers, and suggest laboratory tests. In the fall of 1911, Gentry and Ferenbough of the U. S. Army made their investigations and report on Malta fever in Edwards County, Texas, and along the Mexican border.



Kerrville is a leading center of the Angora goat industry, and millions of pounds of mohair pass through its warehouses each year. I have been in charge of a general hospital in Kerrville for twelve years. We are surrounded by goats—mohair goats for their hair, Mexican goats for meat, and Swiss goats for milk.

During the last twelve years just two cases of Malta fever have been noted by us in this vast territory, and not a single case has been admitted to the hospital. As we have a well trained pathologist, it would be difficult for a suspicious case to escape identification.

The Swiss milk goat is in America to stay. The milk goat industry bids fair to become one of the most important branches of our live stock industry. The U. S. Department of Agriculture and the departments of agriculture of several states maintain herds of milk goats for study and experiment.

Malta fever in goats is easily determined by serologic test. My observation leads me to believe that infected herds in the United States can trace the infection to infected herds in Mexico. And while the menace of Malta fever from goat's milk is infinitesimal as compared to the menace of tuberculosis from the milk of tuberculous cows, we as physicians should fight for an absolutely clean milk supply. Every cow and every goat used in a commercial dairy should be required to show a clean bill of health, and the same rule should apply to each employee who handles the milk until it reaches the consumer.

There are many competent physicians and hundreds of parents who have seen goat's milk succeed when modified cow's milk and patent baby foods absolutely failed. To them goat's milk probably seems quite indispensable.

Its superiority is generally admitted by those who have used it, and it offers us as physicians a safe, clean source of raw milk supply. Eliminate Malta fever by serologic test, and we can recommend goat's milk to our patients as far superior to cow's milk chemically, physically and bacteriologically.

The combined efforts of physicians, parents and men of wide business experience have robbed the back alley of its threadbare joke and forced the admission of her aristocratic Swiss cousin into the most select circles of our pure bred live stock families. Let us use our influence in keeping her free from disease and supporting her in the exalted position she now occupies—the savior of the babies.

WILLIAM LEE SECOR, M.D., Kerrville, Texas.

#### CONSTIPATION—TUBERCULOSIS—HYDROTHORAX

*To the Editor:*—Constipation is generally considered to be due to sluggish bowels. All our numerous attempts at treatment are based on the notion of sluggish bowels. Has it ever been shown that the bowels are ever unduly sluggish? Is it not a fact that the rectum and not the intestine is loaded in constipation?

H. A. Kelly (Medical Gynecology, 1908, p. 191) conceives constipation to be an inertia of the defecation reflex, a conception that is in harmony with all clinical data. It explains the correlation of constipation with neurasthenia, and also the paradox that while we have numerous cathartics we have no cure for constipation. A simple motor function reacts to any change in the environment, while a depressed reflex is out of the range of our materia medica, which contains no analeptics, no sensory stimulants, and no drug or combination of drugs that might affect simultaneously all the elements of a reflex.

Incipient apical tuberculosis is looked for in adult life but never found. Then it is already—whether active or extinct—fairly advanced, having had its opportunity for spreading the

disease. The period of life of the second dentition, because of a lull in the cases of clinical tuberculosis, is looked on with equanimity. But does not the fact that the tuberculin positive test keeps on rising, reaching its maximum with the end of this period, signify that tuberculosis in later life had its incipency at this period? As to the portals of entrance, can we conceive of more ideal ones than the lacerated gums picked at with fomites by the insanitary child who is mostly at large and exposed? By taking better care of children at this age, cannot we hope to increase the proportion of extinct cases?

The greater frequency of dextral hydrothorax is generally attributed to the compression of the azygos veins. Cannot this condition be accounted for by the more direct back pressure on the mouth of the lymphatic duct and pleural sac of the right side than on that of the left?

JACOB LANSKI, M.D., Chicago.

### Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

#### THE WIDAL TEST

*To the Editor:*—We have been advised of a test that differentiates between a positive Widal reaction due to a previous vaccination against typhoid, and a reaction due to the disease itself. If this test is reliable, please give the technic.

MEDICO.

ANSWER.—The only reliable method for confirming a clinical diagnosis of typhoid fever in a previously vaccinated person is blood culture. However, during the World War, in vaccinated patients suffering from a continued fever clinically like typhoid, a progressive rise and fall in the agglutination curve was considered diagnostic of typhoid fever. Brösamlen observed a steep rise in the agglutination curve in 53 per cent. of thirty-two vaccinated typhoid patients. Hergt reported similar findings, adding that the curve was less abrupt when vaccination had been performed two years or more before the disease was acquired. The value of such findings is impaired, however, when it is considered that many other diseases may temporarily increase the agglutinative power in previously vaccinated persons. In a case of pneumonia, for example, on the first and third days, Rist found the agglutination test negative, whereas on the fifth day a titer of 100 was found, and later a titer of 300. Somewhat similar results were obtained in rheumatic fever, amebic liver abscess, tonsillitis, laryngitis and simple diarrhea. In fact, only one disease is known which, instead of increasing or leaving unimpaired the agglutinative power of vaccinated patients, causes it temporarily to disappear. This interesting exception is measles. Rist performed more than 11,000 agglutination tests on vaccinated and unvaccinated fever patients. He concluded that the agglutination titer is not distinguishable from the same titer in vaccinated persons suffering from any other disease, that the value of the agglutination test in vaccinated persons to determine whether or not they have typhoid fever is absolutely nil, and that "No caution, no niceties of technic, no careful consideration of titer or of the behavior of curves are of any avail whatever."

#### ELECTRICITY IN HYPERTENSION

*To the Editor:*—What is the present status of the use of electricity in the reduction of hypertension.

J. W. STOFER, M.D., Gallup, N. M.

ANSWER.—Wilfred Harris, in his book on Electric Treatment, states that beneficial results follow the use of high frequency currents in high blood pressure, whether applied by autoconduction or local application. He maintains that these results are quite permanent. On the other hand, W. J. Turrell, in his Principles of Electrotherapy, warns one of the danger of static electricity in hypertension. Others are of the opinion that, while the high frequency current will reduce high blood pressure by dilation of the capillary vessels, the result is not permanent.



## XANTHINURIA

*To the Editor:*—I have a patient who has been suffering from bilateral nephrolithiasis in a severe form for four or five years. He has been in a number of hospitals in this state and in Atlanta. There are xanthin crystals present in the urine, which is said to be uncommon. It is reasonable to presume that the calculi in this case are composed of the same substance, although no analysis of a passed stone has ever been made. In view of the presence in the urine of these crystalloids, is there any rational therapeutic procedure that may be undertaken to prevent the formation of further calculi? Please omit my name.  
H. S. G., Kissimmee, Fla.

**ANSWER.**—Renal calculi composed of xanthin are extremely rare, only a few specimens having been reported in the literature. Xanthin is a purin base that is normally converted into uric acid by the action of an enzyme that is apparently secreted in the liver. Defective xanthin metabolism is therefore closely related to gout. Purin bases, in general, are derived from the catabolism of nucleic acid, which is partly endogenous, or derived from the destruction of the body cells, and partly exogenous, or taken in with the food. The former fraction is not subject to modification, but the latter can be regulated by proper selection of food materials. In general, it may be said that the principal foods with high purin content are meats (especially sweetbreads and liver), fish, peas, beans, asparagus, onions, tea, coffee and chocolate. Eggs, butter, milk and cheese contain no purin bodies. It seems rational to consider that the regulation of the diet in an effort to meet this condition and the principles to be followed are similar to those in gout. The purin content of the blood should be determined, and the rapidity with which this becomes reduced on a purin-free diet to that of endogenous origin (normally about 0.5 mg. a day) should be studied in order to determine the functional capacity of the body to deal with these substances. Additions may then be made in accord with this capacity. Further details are given in the standard textbooks on dietaries, such as that of Friedenwald and Ruhrah, or that of Carter, Howe and Mason.

## Medical Education, Registration and Hospital Service

### COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vighne, Juneau.  
IDAHO: Boise, April 4. Dir., Mr. Harry L. Fisher, Boise.  
IOWA: Des Moines, March 8-10. Sec., Dr. Rodney P. Fagen, State House, Des Moines.  
MAINE: Portland, March 13-14. Act. Sec., Dr. Adam P. Leighton, 192 State St., Portland.  
MONTANA: Helena, April 3. Sec., Dr. S. A. Cooney, Power Bldg., Helena.  
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.

### District of Columbia October Examination

Dr. Edgar P. Copeland, secretary, Board of Medical Supervisors of the District of Columbia, reports the oral and written examination held at Washington, Oct. 10-12, 1922. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Nine candidates were examined, all of whom passed. Five candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University	.....	(1921)	88.8, 89.5
George Washington University	(1916)	85.1, (1922)	76.3, 82.8, 82.9, 84.1, 86
Howard University	.....	(1922)	75

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Coll. of P. and S., Baltimore	.....	(1896)	W. Virginia
Johns Hopkins University	.....	(1911)	Minnesota
Maryland Medical College	.....	(1904)	Maryland
Univ. of W. Tenn.	.....	(1914)	Missouri, (1915) Tennessee

### New Jersey October Examination

Dr. Alexander MacAlister, secretary, New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, Oct. 17-18, 1922. The examination covered 9 subjects and included 90 questions. An average

of 75 per cent. was required to pass. Of the 12 candidates examined, 6 passed and 6 failed. Forty-four candidates were licensed by reciprocity, and 2 candidates received osteopathic licenses by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Harvard University	.....	(1921)	83.8, 86
Tufts College Medical School	.....	(1921)	77
Woman's Med. College of Pennsylvania	.....	(1921)	84
Queen's University, Kingston, Ont.	.....	(1921)	83.1
University of Berne, Switzerland	.....	(1916)*	75.1

College	FAILED	Year Grad.	Per Cent.
University of Budapest, Hungary	.....	(1914)*	68.6
University of Catania, Italy	.....	(1915)*	72
University of Naples, Italy	(1903)* 72.6, (1916)* 70.1, (1919)* 69.1		
University of Valencia, Spain	.....	(1915)*	66.6

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Georgia	.....	(1906)	Georgia
Chicago College of Medicine and Surgery	.....	(1917)	Illinois
Rush Medical College	.....	(1895)	New York
Tulane University	.....	(1921)	New York
Johns Hopkins University	.....	(1907)	Maryland
Maryland Medical College	.....	(1912)	W. Virginia
University of Maryland	.....	(1921)	Maryland
University of Michigan Medical School	.....	(1912)	Michigan
Washington University	.....	(1918)	Maryland
Columbia University	.....	(1913), (1918), (1921, 3)	New York
Fordham University	.....	(1920), (1921, 6)	New York
Long Island College Hospital	.....	(1904)	New York
N. Y. Homeo. Med. Coll. and Flower Hospital	.....	(1901)	New York
Univ. and Bellevue Hosp. Medical College	.....	(1921, 3)	New York
Jefferson Medical College	(1896), (1907) Pennsylv.		
Medico-Chirurgical College of Philadelphia	.....	(1910)	Penna.
Temple University	.....	(1908)	Penna.
Univ. of Pa.	.....	(1894), (1907), Penna., (1921)	New York
University of Tennessee	.....	(1918)	Tennessee
Baylor University	.....	(1921)	New York
University of Vermont	.....	(1919), (1921)	Vermont
University of Virginia	.....	(1921)	New York
McGill University	.....	(1920)	Michigan
Queen's University	.....	(1914)	New York
University of Munich, Germany	.....	(1911)*	Texas
University of Naples, Italy	.....	(1916)*	New York
Osteopaths	.....	Missouri, Pennsylvania	

\* Graduation not verified.

### Porto Rico October Examination

Dr. M. Quevedo Baez, secretary, Porto Rico Board of Examiners, reports the written and practical examination held at San Juan, Oct. 3-7, 1922. The examination covered 9 subjects and included 75 questions. An average of 75 per cent. was required to pass. Of the 10 candidates examined, 9 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University	.....	(1922)	75.4
Rush Medical College	.....	(1922)	77.7
University of Mich. Med. School	.....	(1921)	82.1, 88.6
St. Louis University School of Medicine	.....	(1922)	85
Syracuse University	.....	(1921)	82, 87
Jefferson Medical College	.....	(1920)	83.7
Medical College of Virginia	.....	(1921)	83.8

College	FAILED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	.....	(1916)	69.7

### Kentucky December Examination

Dr. A. T. McCormack, secretary, Kentucky State Board of Health, reports the oral, written and practical examination held at Louisville, Dec. 5, 1922. The examination covered 11 subjects and included 110 questions. An average of 70 per cent. was required to pass. Of the 8 candidates examined, 7 passed and 1 failed. One candidate was licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Hospital College of Medicine, Louisville	.....	(1906)	80
Kansas City University of Physicians and Surgeons	.....	(1921)	80
St. Louis College of Physicians and Surgeons	.....	(1922)	78
Eclectic Medical College	.....	(1922)	88
Meharry Medical College	.....	(1921)	73
University of Virginia	.....	(1919)	92
University of Jurjev, Russia	.....	(1894)*	76

College	FAILED	Year Grad.	Per Cent.
Meharry Medical College	.....	(1918)	66

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Meharry Medical College	.....	(1917)	Tennessee

\* Graduation not verified.



## Medical Economics

### CONFERENCE ON NEW YORK STATE MEDICAL PROBLEMS

Governor Alfred E. Smith of New York held a conference in the capitol at Albany, February 26, with representatives of the Medical Society of the State of New York and others, to discuss some of the medical problems of the state.

#### RURAL MEDICAL PROBLEMS

The state commissioner of health, Dr. Herman E. Biggs, called attention to the small number of physicians now locating in rural districts, and to the difficulty residents of those sections have in obtaining medical aid. The situation is likely to grow worse, rather than better, in Commissioner Biggs' opinion, unless action is taken, but establishment of health centers to relieve the situation, as proposed by the state department of health as a way out, proved unacceptable to the medical profession. There seems to be a need, Dr. Biggs said, for establishment of hospitals of a proper type—possibly cottage hospitals such as exist in England, acting as feeders to the larger hospitals in metropolitan centers—and rural ambulance service is essential. The people of the sections where these facilities are most needed cannot provide them for themselves. Looking on the protection of health and the relief of sickness as fundamental functions of the state, Commissioner Biggs thought that government aid should be provided in time to prevent serious consequences from the present trend of affairs.

Dr. Arthur W. Booth, president of the state medical society, did not look on the situation as so serious as pictured by Dr. Biggs. If adequate hospital and laboratory facilities are provided, young physicians will, he believed, go into rural communities to practice; and if such communities fail to provide the necessary facilities for medical service, they should not blame physicians for not coming to them, or blame the state for not providing them. Dr. Booth and other speakers emphasized the fact that so-called rural communities were in numerous instances solving the problem for themselves by providing hospital service, and called attention to the number of instances in which they had done so.

Dr. Walter E. Kidder of Oswego suggested the advisability of the establishment by the state of scholarships in medical schools, to be awarded to students who will obligate themselves to practice in rural communities for a certain number of years after graduation, but it was suggested that such scholarships would have to be filled by young men from the country, since it would be found practically impossible to make a country doctor out of a city bred youth. Emphasis was laid on the seasonal character of the problem, there being no difficulty in obtaining medical service during the warmer portions of the year, when the roads were open. Farmers in their automobiles pass the offices of nearby physicians during the warmer periods of the year, to avail themselves of the services of supposedly better physicians in nearby cities and towns, but are dissatisfied because they do not have local physicians at their beck and call during the winter months. Physicians who locate in the country sooner or later tire of this condition, and move to the cities and towns. Young physicians were deterred from entering country practice, it was said, because of the small fees charged by the older local practitioners, fixed on a scale that was reasonable enough when they began practice, but not in keeping with the present cost of medical education or the expenses of medical practice. Dr. Booth suggested that persons living in sparsely settled country districts must learn that the day is gone when a doctor can properly treat them in their own homes, winter and summer, day and night, and that they must provide hospital and ambulance facilities to enable their sick to be cared for in proper local hospitals. The cottage hospital idea, except in extreme and difficult situations, met with no general approval, the opinion being apparently that a three or four bed hospital, in which only minor surgery could be done and with limited laboratory facilities, would not be sufficiently attractive to aid in bring-

ing competent practitioners into the communities so equipped. Hospital facilities, laboratory facilities, and a certain amount of competition were essential, Dr. Booth said, to make a place an attractive location for a physician.

#### THE NARCOTIC DRUG PROBLEM

The narcotic drug problem was discussed by Drs. Haven Emerson, Harlow Brooks, Walter Timme, Carleton Simon, and Amos O. Squire. There was a general sentiment in favor of the principles embodied in the Harrison Narcotic Law, and of having state narcotic legislation conform to it. The Harrison law, it was generally agreed, is adequate so far as the medical profession is concerned. What is needed is better law to deal with the smuggler, the narcotic drug pedler, and the addict of criminal type. Dr. Emerson and Dr. Brooks agreed that narcotic drug addiction is not a disease. Dr. Simon, special deputy police commissioner, in charge of the antinarcotic work of the New York City Police Department, emphasized the distinction between addicts who constitute medical problems and those who are essentially police problems. Out of 6,235 drug addicts arrested in New York City in the last two years, only 2 per cent. attributed their drug addictions to treatment by physicians for disease or bodily infirmities. The remainder became drug addicts through vice and evil companionship. The addicts who in their addiction constitute true medical cases constitute a small part of the entire group and can obtain adequate treatment, Dr. Simon thought, but the rest should be handled by the police. Dr. Squire confirmed the general belief that narcotic drug addiction is on the increase, basing his statement on the increase during recent years in the number of drug addicts among prisoners committed to Sing Sing. He concurred in the opinion that drug addiction is due oftener to evil associations than to medical treatment, and called attention to the temptations by drug pedlers, who give prospective victims opportunities to test drugs, thus creating addicts. Only a small percentage of addicts, he thought, are ever permanently cured, although all are eager to be treated and are grateful patients.

#### MEDICAL EDUCATION

Dr. William Darrach, dean of the Columbia University College of Physicians and Surgeons, urged that there be no letting down in the standard of medical education. He suggested the possibility of a revision of the standard medical curriculum of today so as to make each graduate essentially a general practitioner, leaving the development of specialists in any line to those willing to supplement the standard four year course of training by additional study. As one factor calculated to influence young men in entering the medical profession, he urged the fixing of a single standard by the government for all who desire to enter upon the treatment of disease and injury. To require of a physician the equivalent of two years of college work, four years of study in a medical school, and one or two years in a hospital, before allowing him to practice, while at the same time allowing an irregular practitioner of healing to assume substantially the same responsibilities with respect to human life and public health as is assumed by physicians, but requiring of such irregular healer no fixed amount of preliminary education and only eighteen months of medical training, is hardly a rational or a fair procedure. Dr. W. D. Cutter, secretary of the state board of medical examiners, urged the need of better provision for the enforcement of the medical practice act in New York State, endorsing legislation vesting in the attorney general certain authority with respect thereto, supplementing, but not diminishing, the authority of local district attorneys to prosecute on the basis of information furnished by county medical societies. Dr. Simon Flexner of the Rockefeller Institute urged that nothing be done that would hamper or prevent medical research, and spoke particularly of the danger inherent in a bill now before the legislature, which, under the guise of preventing "experimentation" on children, would prevent the use of a new remedy for disease or injury.

At the close of the meeting, a committee was appointed to formulate the principles agreed on and to cooperate with the governor in carrying such principles into effect as circumstances indicate.



## Book Notices

STUDIEN ZUR ANATOMIE UND KLINIK DER PROSTATAHYPERTROPHIE. Von Julius Tandler. O. Ö. Professor, Vorstand des Anatom. Institutes an der Universität Wien, and Otto Zuckerkindl, A. O. Professor der Chirurgie an der Universität Wien. Paper. Price, \$3.60. Pp. 130, with 121 illustrations. Berlin: Julius Springer, 1922.

This is the product of one of the most fruitful combinations in medical work, the collaboration of the theoretical scientist with the clinician. In the introductory chapter the authors analyze the older theories concerning the nature and causes of prostatic hypertrophy; they deny the rationality of the term prostatism, refute the interpretation of prostatic hypertrophy as a compensatory or inflammatory reaction, and assert that the type of this tumefaction is glandular, and that this glandular hyperplasia originates in rudimentary glands. Hyperplasia is the primary factor; the changes in the fibrous skeleton are secondary. The variations in the microscopic pictures are explained by the fact that in this neoplasm of the prostate new formation of tissue and regressive metamorphosis occur simultaneously. It is declared to be still an open question whether prostatic hypertrophy is to be considered a true neoplasm or a hyperplasia. Tandler and Zuckerkindl have proved that prostatic hypertrophy is always confined to a well circumscribed area of the prostate, and that in growing it begins at the urethra, pushes aside the prostatic gland and finally compresses it, so that the tumefaction forms the nucleus of a prostate that was transformed into a capsule by stretching. The authors recede now from their original statement that the median lobe is the exclusive seat of prostatic hypertrophy. They are now convinced that the adenomatous intumescence originates in rudimentary glands pertaining to the upper part of the prostatic urethra. They distinguish two main types of prostatic hypertrophy. The general character of the first type is based on the fact that the vesical urethral opening is changed in a characteristic way by the prostatic tumor, which protrudes into the cavity of the viscus. The internal urethral orifice is no longer flush with the vesical floor, but is either located on top of the prostatic protrusion or is to be seen somewhere on the dependent side of this pathologic hillock. Thirty-two illustrations show all the variations of this type, and histories of clinical cases are given. The second type is represented by the cases in which the whole tumor is located subvesically. The basis of the bladder is dislocated upward, but the internal urethral orifice and its relation to the muscular apparatus remains unchanged. There is no recessus retroprostaticus inside the bladder, and the urethral orifice is on the same plane with the surrounding structure. The hypertrophy is limited to the upper part of the prostatic urethra, and the tumor mass surrounds the urethra like a ring. If this subvesical tumor is enucleated, it shows the form of a globe or of an ovoid. The fourth subdivision deals with tumefactions around the vesical opening that cannot be classified as true prostatic hypertrophy, for instance, endovesical myoma, and a submucous myoma. Next follows a chapter describing the secondary changes in the bladder and its appendages due to the stagnation of the urine produced by prostatic hypertrophy. In discussing cancer of the prostate, the authors are inclined to believe that the malignant degeneration is secondary to the hypertrophy in most cases. They also believe that secondary prostatic cancer almost never produces metastases, while primary carcinoma, the so-called Recklinghausen tumor, shows an inclination toward metastasis in the bones. An interesting chapter deals with the fate of the wound cavity after prostatectomy. The simultaneous occurrence of diverticula and prostatic hypertrophy is also discussed as to diagnosis, complications and operative results. In regard to true relapses after prostatectomy, the authors maintain that they may originate only in parts of the mucosa of the upper prostatic urethra that were left by the operation. The concluding chapter elaborates on the details of diagnosing prostatic hypertrophy with all the possible complications. Cystoscopic pictures of striking beauty accompanying the text. This book is a worthy document for the scientific thoroughness of the

authors, one of whom, unfortunately, died before the work was published.

LATERAL CURVATURE OF THE SPINE AND ROUND SHOULDERS. By Robert W. Lovett, M.D., Sc.D., John B. and Buckminster Brown Professor of Orthopedic Surgery, Harvard University. Fourth edition. Cloth. Price, \$2.50. Pp. 217, with 172 illustrations. Philadelphia: P. Blakiston's Son & Co., 1922.

This edition is of the high character of the previous editions. It furnishes an excellent guide for the general practitioner and specialist who wish to study this most difficult subject. Referring to the matter of faulty attitudes in school and elsewhere the author says that in his opinion it is not likely that they are the causes of moderate and severe structural scoliosis. Regarding the Abbott method of treatment, he says, "The method is evidently no cure-all, and his claims have apparently not been substantiated by others." Operative procedures are still held sub judice, sufficient time not having elapsed since their introduction to allow a proper estimate of their value. Lovett strongly emphasizes the necessity of mobilizing spines in order to obtain the greatest correction, and the need of much gymnastic work in the follow-up care after forcible correction in casts and jackets. The legends of Figures 96 and 97 are reversed; and in the chapter on occurrence, in referring to the occasional appearance of scoliosis in fowls, after ruling out several mentioned causes as not acting in the given cases, the author makes the rather startling physiologic observation that "we must attribute the cause either to intra-uterine pressure or to purely static causes arising late in life." Since this comment has appeared in the preceding editions, it suggests that some parts of the text have not had very careful reading either by the author or by his students, who could hardly fail to notice the anomaly of intra-uterine pressure in the domestic fowl.

TRAITÉ DE PATHOLOGIE MÉDICALE ET DE THÉRAPEUTIQUE APPLIQUÉE. Publié sous la Direction de Émile Sergent, Professeur de Clinique médicale propédeutique, L. Ribadeau-Dumas, Médecin de la Maternité, et L. Babonneix, Médecin de la Charité. Tome X: Sang, Organes Hématopoïétiques Rate, Os. Par Pr. Bezançon, Le Sourd, Agasse-Lafont, Pagniez, Hazard, Sainton, Apert. Paper. Price, 25 francs. Pp. 544, with 71 illustrations. Paris: A. Maloine et Fils, 1922.

The tenth volume of the treatise on medical pathology and applied therapeutics of Sergent, Ribadeau-Dumas and Babonneix covers diseases of the blood and hematopoietic organs, spleen and bones. Following an introduction by Bezançon and Le Sourd, pointing out the value and importance of a study of hematology, the book is divided into three sections. Part 1, by Pagniez and Agasse-Lafont, deals with the diseases of the blood and hematopoietic organs, and includes a section by Hazard on the physical and chemical examination of the blood. Part 2, by Agasse-Lafont, treats of diseases of the spleen. Part 3, by Sainton, has to do with diseases of the bones, and includes a chapter on rickets, by Apert. Each of the sections is written in a clear and concise manner, the subject matter being well selected and, in the main, adequate, although none of the discussions seem as comprehensive as would be expected from the character of the work. In the chapter dealing with the chemical examination of the blood, little or no attention is paid to the work of our American investigators, who have done so much to advance this field of clinical diagnosis, and no mention is made of the study or determination of the hydrogen ion concentration of the blood. The purely clinical part of the work follows the usual discussions of the subjects treated, and offers little or nothing that is new. However, there is much of value in the work for the general student and practitioner.

DIE RÖNTGENDIAGNOSTIK DER MAGEN- UND DARMKRANKHEITEN. Von Dr. Emmo Schlesinger, Spezialarzt für Magen- und Darmkrankheiten in Berlin. Second edition. Paper. Price, 1,530 marks. Pp. 402, with 236 illustrations. Berlin: Urban & Schwarzenberg, 1922.

The author professes that his aim in writing this book was to furnish a reliable guide for beginners, to be of help to practicing roentgenologists, and to point out to the men who engage in roentgen-ray research work the questions that are still open, in order to stimulate progressive investigation. The author has succeeded in this self-imposed task. Although



an enthusiastic roentgenologist, he insists that roentgen-ray diagnosis never should be used independently, but should be employed in cooperation with all other diagnostic means. He concedes to the surgeons that they were the initiators of roentgen-ray diagnosis, as they recognized its importance prior to the internists. After discussing the technology, the author presents and interprets pictures of the normal organs, and brings the visible changes due to functional activities into comparison with the outlines of the quiescent organs. Pathologic conditions and their expressions in the roentgenogram and in the fluoroscopic picture are taken up, special stress being laid on differential diagnosis and possible sources of error. The surgical pathologic conditions and the resulting indications are particularly well worked out in detail. This chapter is very instructive because a large number of the cases reported and illustrated were controlled either by midoperative or postmortem observations. In this way, roentgenologic findings may be compared with the findings during operations, as in resections and entero-anastomoses, while postoperative pictures confirm or disprove the results. The author devised a method of roentgenologic determination of the acidity of the stomachic secretion without use of the stomach tube. He describes minutely its execution. The details of this book cannot be the subject of a review: they have to be studied as they are presented. There are a multitude of excellent pictures covering our knowledge of the diagnosis of diseases of the digestive tract. The explanatory text covers in a perspicuous, concise way all that a scientific interpretation demands.

ENCYCLOPÉDIE FRANÇAISE D'UROLOGIE. Publiée sous la direction de MM. A. Pousson, Professeur à la Faculté de médecine de Bordeaux, et E. Desnos, Ancien interne des Hôpitaux de Paris. Volume IV. Maladies de la Vessie. Par MM. O. Pasteau, Arcelin, Rouvillois et Ferron, Heitz-Boyer, H. Minet, Ertzbischoff, Verhoogen, Malherbe et Pasquereau, Nicaise, Gaucher et Druelle, Estor et Vialleton, E. Forgue, A. Pousson, Courtade, Paul Delbet, Genouville et Boeckel, Desnos. Paper. Price, 60 francs. Pp. 1154, with 517 illustrations. Paris: Gaston Doin, 1921.

The fourth volume of this huge encyclopedia of urology is devoted to diseases of the bladder. The subject matter is divided into two parts, one embracing methods of examination and the other devoted to the well defined clinicopathologic entities. The various chapters are written by men whose names stand high in modern urologic thought and accomplishment. The clinical diagnostic methods of examining the bladder are described by Dr. Pasteau. The second chapter elucidates roentgenographic diagnosis of bladder lesions. Traumatic lesions of the bladder are thoroughly discussed. Those parts dealing with the pathologic physiology and mechanism of the lesion may serve as an example in completeness. A chapter on cystitis by Heitz-Boyer occupies ninety well written pages, illustrated by colored plates and by numerous half-tones of gross pathologic lesions. The chapter on bladder stone by Drs. Desnos and Minet is exceptional in its completeness and beauty of illustration. There is an entire chapter on syphilis of the bladder; one on acquired bladder fistulas, and a splendid section on functional disturbances.

PRINCIPLES AND PRACTICE OF INFANT FEEDING. By Julius H. Hess, M.D., Professor and Head of the Department of Pediatrics, University of Illinois College of Medicine. Third edition. Cloth. Price, \$4 net. Pp. 496, with 34 illustrations. Philadelphia: F. A. Davis Company, 1922.

This book has made a place for itself as a textbook of recognized merit, and as a convenient guide for the practitioner in the problems associated with the successful care and feeding of infants. In the preparation of the third edition the chapters on vomiting, colic, constipation and abnormal stools have been completely rewritten. New chapters dealing with rickets, scurvy, spasmophilia, acidosis and anemia have been added, and all of the chapters on the nutritional disturbances have been revised and brought up to date. In order to accommodate this additional material, the form of the book has been changed to a larger page size. With the additions the book is an up-to-date, practical reference work on the care and feeding of the infant.

## Miscellany

### AMEBIC DYSENTERY: ITS PREVALENCE, DIAGNOSIS AND TREATMENT

The study of dysentery from an etiologic point of view, as Kilpatrick<sup>1</sup> points out, has received more scientific attention during the last twenty years than ever before, because of the increasing importance given to tropical medicine in our own country and, especially, in England. "Dysentery," as the term is used today by many physicians, simply signifies a symptom-complex of frequent bowel movements with pain, tenesmus, and blood in the dejecta. In this sense, according to Reed<sup>2</sup> it may be purely symptomatic; it may be due to bacterial infection, tuberculosis, syphilis, poisoning with mercury or arsenic, mechanical irritation, animal parasites, kala-azar, pernicious malaria and trematodes, infection with ciliate and flagellate parasites, and *Endameba histolytica*.

The common belief used to be that amebic dysentery was a purely tropical and subtropical disease. Data based on improved methods of examining stools and on controlled clinical observations of men under orders during the war, and of various classes of civilians since the war, show that the disease is fairly common in temperate climates also.

The British suffered heavy casualties from amebic dysentery in the Gallipoli campaign. They therefore gave a number of their protozoologists intensive training, and placed in their hands large numbers of men suffering from chronic dysentery, concentrating them in special hospitals. Allan,<sup>3</sup> in summing up the literature of the last few years on this subject, gives some interesting statistics tabulated from reports of Archibald, Hadfield, Logan, and Campbell,<sup>4</sup> of the Royal Army Medical Corps. Of 31,000 British troops returned from the Near East, 9.8 per cent. were carriers of *Endameba histolytica*. Of 7,000 troops and civilians without any history of bowel trouble, examined in the eastern Mediterranean area, 10.5 per cent. were infected; and of 5,000 troops and civilians examined on the western front, 8.9 per cent. were carriers.

Kofoed found by subjecting 2,300 of our troops in New York, just returning from France, to one examination that 12.8 per cent. were infected with *Endameba histolytica*. One examination has been found to uncover only from one-third to one-half the actual number infected, or the number that six examinations will uncover. Hence the actual number affected would probably be from 24 to 36 per cent. The United States Public Health Service was urged to take effective measures to detect and rid our returned soldiers of the infection. Under the direction of the service, Stiles<sup>5</sup> reports that a fairly comprehensive investigation was made to corroborate if possible Kofoed's findings before any expensive and far-reaching measures were decided on, and that the results indicate the prevalence of the disease in this country in general.

Amebic dysentery manifests itself clinically in temperate zones most frequently in the chronic form or in the carrier state, which differs from the former only in degree. The symptoms of chronic amebiasis are, as Reed, Stiles and others point out, bizarre: intercurrent attacks of diarrhea alternating with constipation, neurasthenia, loss of weight, anemia, amenorrhea and a variety of other complaints. Such patients should have repeated stool examinations; on the discovery of the cysts, proper treatment should be instituted. A carrier of cysts may not only develop acute, distressing and dangerous symptoms at any time, as well as liver abscess, but is continually a source of danger to his fellow men. Hogan<sup>6</sup> and a few others have reported cases of appendicitis

1. Kilpatrick, S. C.: Prevalence of Entamebic Disease: Diagnosis and Treatment, South. M. J. **15**: 275-280 (April) 1922.

2. Reed, A. C.: Diagnosis and Treatment of Amebic Colitis, Am. J. M. S. **164**: 587 (Oct.) 1922.

3. Allan, William: A Review of the Recent Work on Amebic Dysentery, Boston M. & S. J. **183**: 545-548 (Nov. 4) 1920.

4. Archibald, R. G.; Hadfield, G.; Logan, W., and Campbell, W.: J. R. A. M. C. **26**: 675, 1916.

5. Stiles, C. W.: The Public Health Status of Amebic Dysentery in the United States as Potentially Influenced by the World War, Boston M. & S. J. **186**: 377 (March 23) 1922.

6. Hogan, E. P.: Appendicitis Caused by Entameba Histolytica with Postoperative Amebic Ulcer Perforation of Cecum, J. Trop. Med. **24**: 259, 1921.



due to an undetected amebic dysentery, and occurring synchronously with it.

The vegetative, freely moving, form seems to develop only in the intestine, and, when conditions there are favorable, it is present in large numbers, bringing on what is recognized as an acute attack. It is then easily discovered in the blood-streaked mucus of the stool. This form must be differentiated from that of *Endameba coli*, which is nonpathogenic. The nuclear material of *Endameba histolytica* is coarsely granular, with the ectoplasm clear and more refractile than that of other large cells in the stool, making the detection of the ameba with the low power comparatively easy. It frequently contains vacuoles, and ingests red blood cells with ease. Only the ectoplasm is actively motile; the endoplasm seems to flow passively along as the ectoplasmic pseudopodia propel it. Movements cease if the specimen is allowed to cool off for any length of time. It then becomes more spherical, and the margin of the ectoplasm appears as a highly refractile ring. There is no sharp dividing line between the endoplasm and ectoplasm of *Endameba coli*. Both seem to extend out into the pseudopodia. It very rarely ingests red blood cells.

Only in chronic cases and in carriers, as a rule, can cysts be found. Cysts develop when conditions for growth become unfavorable. Invasion is believed to be accomplished by the encysted form through contaminated food, fruit or water. The cysts live for a long time in water. They pass through the intestine of flies unchanged and are present in fly droppings. In the intestine of man the cysts are converted into vegetative forms producing undermined ulcers in the cecum and large intestine—ulcers that appear to be secondary to a gelatinous necrosis in which the amebas are found. After specific treatment, and sometimes without this, conditions for its development in time become unfavorable, and the vegetative forms disappear from the stool; but numerous cysts may still be found in solid portions of it. The disease has then become chronic with less acute symptoms, or the patient has become a carrier with practically no symptoms, but with cysts in the stool. This condition is nearly always the result of insufficient or bad treatment.

An absolute diagnosis can be arrived at only on identifying the vegetative, motile form of *Endameba histolytica* or its cyst. The cyst of *Endameba histolytica* must be differentiated from those of *Endameba coli* and *Endameba nana*. The latter is also nonpathogenic. It was first described by Wenyon and O'Connor.<sup>7</sup> It is called *Endolimax nana* by Dobell.<sup>8</sup> *Endameba histolytica* cysts are round, rather small, and have four nuclei. *Endameba coli* cysts are larger, frequently not round, and have eight nuclei. *Endameba nana* cysts have four nuclei. A solid portion of stool mixed with an equal amount of Donaldson's iodine eosin stain brings out the nuclei sharply in cysts. They appear dark brown, the rest of the cyst yellow, and the background pink. A saline purge given carriers of *Endameba histolytica* frequently brings out motile forms.

Emetin, first used by Rogers in 1912, given hypodermically 1 grain (0.065 gm.) a day to an adult, for from ten to twelve days, usually kills off all vegetative forms. But it seems to have little if any effect on the cysts. In 1915 DuMez suggested the use of emetin-bismuth-iodid in these cases. A year later the British began using it, and they have demonstrated its value. It is given by mouth in tablets coated with phenyl salicylate or keratin, 1 grain two or three times a day for twelve days. Frequently after two or three days the number of cysts have markedly diminished. A few persons seem to derive no benefit from emetin or emetin-bismuth-iodid, but reports from a large number of men in the tropics show that the vast majority of cases are cured by it. The usual way of treating acute attacks of amebic dysentery today is to follow the course of emetin with a course of emetin-bismuth-iodid by mouth. In chronic cases, repeated courses may be required. Dobell found that 90 per cent. of relapses in treated carriers occurred within three weeks; but they may occur later. Ditlevsen, Dobell, Allen and many others who have had considerable experience with this disease emphasize the importance of repeated examinations of carriers who have apparently been cured.

## Medicolegal

### Notice Required in Actions for Malpractice—Not Liable for Failure to Treat Eyes

(*Shovers v. Hahn* (Wis.), 190 N. W. R. 432)

The Supreme Court of Wisconsin says that the plaintiff brought this action to recover damages for loss of services of his daughter alleged to have resulted from the failure of the defendant to treat her eyes at birth with a 1 per cent. solution of nitrate of silver, as required by Section 1409a-1, Wisconsin Statutes of 1921. The daughter was born in December, 1918, and this action was begun in September, 1921. No notice of injury was served before the commencement of the action. At the close of the plaintiff's testimony, the trial court granted the defendant's motion for a nonsuit, on the ground that the statutes of limitation of Wisconsin had run on the cause of action, and also on the ground that the plaintiff's evidence failed to show that the injury to the daughter's eye was due to the defendant's failure to administer the nitrate of silver solution; and the judgment of the trial court for the defendant is here affirmed.

It was established in the case of *Frechette v. Ravn*, 145 Wis. 589, that in an action by the person injured for malpractice founded on tort the notice required by Section 4222 (5), Statutes of 1921, was necessary, because it was an action for an injury to the person, and in *Klingbeil v. Saucermann*, 165 Wis. 60, 160 N. W. 1051, it was held that the notice was necessary in an action by the person injured for malpractice founded on contract. It is therefore settled that, were this an action by the person injured, it could not be maintained without the notice.

It was contended by the plaintiff that, since this was an action by the father for loss of service, it was not an action for injury to the person, and the case of *Wysocki v. Wisconsin Lakes I. & C. Co.*, 125 Wis. 638, 104 N. W. 707, was relied on to sustain the claim; and the case squarely sustained it. That case was brought by a father for loss of service, medical expenses, and nursing, caused by a personal injury to his minor son, and the court held that no notice was necessary, because it was not an action to recover damages for injuries to the person, but to recover for loss of service, etc. The fault in the reasoning in that case was that actions were classified, not on the basis of the delict or breach of duty, but on the basis of the kind of damages recoverable. An injured minor may recover several kinds of damages. He may recover for pain and suffering, for disfigurement, for the shame and humiliation caused thereby, for loss of earning capacity after minority, and perhaps punitive damages; but he has but one cause of action; namely, for personal injury. If the rights of others are invaded, the action is none the less one for a personal injury. The Wisconsin statute provides that the party damaged, not necessarily the party injured, shall give notice. It is the delict or breach of duty that characterizes the action, and not the kind of damages recovered. It was the legislative intent to give a person guilty of a personal injury to another timely notice that damages were claimed therefor, to the end that he might protect his interests by seasonably gathering and preserving the requisite evidence available. Under the construction given the statute in the *Wysocki* case, a minor might receive an injury, not serious so far as his cause of action was concerned, but quite serious as to the father's cause of action. The minor had to give the notice, but the father did not. Wherefore, that case, so far as it relates to the giving of notice of injury, is overruled.

The court overrules the *Wysocki* case the more readily now because it is convinced that the plaintiff in the present case had no cause of action, because the evidence was so vague that no verdict based on the theory that the injury to the daughter's eye was the result of the failure of the physician to administer the nitrate of silver solution could stand. It would be a pure guess, and contrary to the reasonable probabilities shown by the evidence; namely, that her eyes were diseased before birth, and that no treatment would have availed.

7. Wenyon, C. M., and O'Connor, F. W.: Human Intestinal Protozoa in the Near East, 1917.

8. Dobell, E.: The Amebae Living in Man, 1919.



**Superintendent Employing Physician for Plantation***(Howison v. Nicholson (Ala.), 93 So. R. 373)*

The Court of Appeals of Alabama, in affirming a judgment in favor of the plaintiff, says that he brought suit on an account for medical services rendered and medicine furnished during the year 1920 to the tenants of the defendant. There was no denial of the fact that the services were rendered, and medicine and drugs furnished, and that the account was true and correct. The only question was the liability of the defendant. The plaintiff testified that the only contract he had for the services performed and medicine furnished was made with the defendant's superintendent; that it was the custom on the defendant's farm, and had been for several years, for the superintendent or general manager to employ a physician for the laborers, and to see that the hands on the farm had medical attention, a custom which was known to the plaintiff when he contracted with the superintendent; and that it was the custom of the defendant to pay in the latter part of the year whatever physician rendered the medical services under orders from the superintendent. The defendant denied that the superintendent had any authority to employ the plaintiff, or to make any contract that would bind the defendant without first submitting it to him for his approval, and he testified that the only way he paid for medical attention to any of his hands was in case they had money due them in the fall of the year, which was not the case that year with reference to any of the persons named in the plaintiff's account. But from the testimony of the plaintiff, it was clear that the general manager or superintendent, who was expected to make provision for the health of the laborers, not only was following the custom of the plantation, but also was well within his authority as a general superintendent in contracting with the plaintiff to give medical attention to the defendant's laborers. The plaintiff, as a third party, was no doubt relying on a custom that had prevailed, according to his and a former superintendent's testimony, on this plantation for some years; and it mattered nothing if the defendant did forbid employment for medical services, except in the manner indicated by his testimony. He could have no private agreement with his agent which would prevail, if the plaintiff knew nothing of it but relied on the custom stated. The fact, if it was a fact, that the superintendent profited by such an agreement with the plaintiff, could not, in the light of his authority to make the contract, be any reason for casting it aside, nor any reason for questioning the good faith of the plaintiff in making the contract with the superintendent. It clearly appeared that, while the evidence was in conflict, there was sufficient evidence to support the judgment rendered.

**Statute of Limitations and Expert Testimony in Malpractice Case***(Carson v. Jackson (D. C.), 281 Fed. R. 411)*

The Court of Appeals of the District of Columbia, in affirming a judgment in favor of the plaintiff without stating the amount, says that the plaintiff alleged that she was suffering from osteomyelitis of the radius of the left arm, but that the defendant through negligence at first treated her arm as if it were not so afflicted, and, after he discovered the disease, negligently and unskillfully treated it, causing much pain and a deformity. The plaintiff was a minor, and the defendant contended that, under the statute providing that such actions must be brought within three years but allowing a minor three years after arriving at his majority to institute such an action, if a minor brings the action during his minority he must do so within three years from its accrual, and that because the plaintiff did not so bring her action within three years it was barred. The court however holds otherwise, being of the opinion that under the statute a minor has the entire period of his minority and three years thereafter in which to institute the action.

On the testimony of laymen relative to the condition of the child's arm and to the treatment given by the defendant, surgeons were asked a hypothetical question, which concluded with the words: "In your opinion, would you say that the physician had given the case the care and attention which

a physician and surgeon of ordinary skill and ability practicing in the District of Columbia would have given under all the circumstances as related?" The court sees no reason why the testimony of laymen concerning the treatment given by the defendant to the child's arm was not a sufficient basis for the hypothetical question. The defendant did not contend that the testimony was improperly admitted. Besides, it was open to him to show that the testimony did not correctly describe the treatment or condition of the child, and, if he had satisfied the jury that it did not, the answer of the surgeons, based on it, would necessarily have failed of effect.

Was the question objectionable as invading the province of the jury? By the question, the witness was not asked to say whether or not the defendant had been guilty of negligence or malpractice, although probably that was the effect of the question. In order that the plaintiff might make out her case, it was necessary for her to show to the satisfaction of the jury that the defendant had not given her the care and attention that a physician and surgeon of ordinary skill and ability practicing in the District of Columbia would have given under the circumstances related. She could not prove it, except by surgeons who knew what care and attention such surgeons would have given. Laymen would have been incompetent to testify on the subject. The jurors knew nothing about it. It was quite different from an ordinary case of negligence, in which the jury is able to solve the question by applying thereto their own experiences. In such a case, the test is: How would a reasonably prudent man have acted under the circumstances? There is no room for expert testimony in a case like that. But here it was necessary that the experts should tell the jury the essential thing, namely, whether or not the defendant's treatment of the plaintiff satisfied the standards of care observed by surgeons of ordinary skill in the District. If they simply answered that the treatment was improper or unskillful, that would not have gone far enough. The jury would still be in the dark as to whether or not the treatment was in accordance with the standards just mentioned. Light on that subject could be given only by an answer to a question such as the one propounded.

With respect to whether the question was leading, perhaps it would have been better if the expert had been asked whether in his opinion the treatment was in accordance with the standards mentioned. However, the question propounded could not have prejudiced the defendant. The court assumes that the expert well knew, before the question was asked, what answer was expected of him, and he was not, therefore, influenced by the form of the interrogatory.

What were the circumstances of the case, or what was the treatment given, the court does not state.

**No One Pronounced Insane for Religious Belief***(West et al. v. Iowa Seventh Day Adventist Ass'n, Inc. (Ia.), 189 N. W. R. 765)*

The Supreme Court of Iowa, in reversing a decree that set aside certain deeds made to the defendant association by a Mrs. Smith, states that a volume of opinionated testimony was offered to prove that she was insane on the subject of the Seventh Day Adventist religion. But this court is bound to say that the law pronounces no one insane or unsound of mind on account of mere religious belief, no matter how unreasonable it may appear to a judge or any one else. A belief in the doctrines maintained by any of the religious denominations would not establish insanity or unsoundness of mind. Still, a person might be a monomaniac as to any form of religion. However, this court is not prepared to say that Mrs. Smith was a monomaniac as to her religion. She was greatly wrapped up and absorbed, and an unceasing worker in her church, and implicitly believed in the efficacy of prayer, and that her prayers were answered, and probably when she spoke of being commanded by God to do certain things, she meant that her prayers were answered. This court can hardly reason that she was insane on that account. Many people so believe. People whose sanity is not questioned claim to converse with people of the spirit world. It is not for this court to pronounce judicially whether they do or not.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Physiology, Baltimore

January, 1923, 65, No. 2

- \*Retinal Reflex in Frogs. V. H. K. Moorhouse, Winnipeg.—p. 177.
- \*Examination of Certain Proposed Tests for Fatigue. F. S. Lee and J. D. Van Buskirk, New York.—p. 185.
- \*Mechanism of Sterilization of Female by Spermatotoxin. J. L. McCartney, Chicago.—p. 207.
- \*Studies of Thyroid Apparatus. IX. Effects of Loss of Thyroid and Parathyroid Glands at 100 Days Age on Growth in Body Length, Body Weight and Tail Length of Male and Female Albino Rats. F. S. Hammett, Philadelphia.—p. 218.
- Changes in Organ Weights of Guinea-Pig During Experimental Scurvy. D. H. Bessesen, Minneapolis.—p. 245.
- \*Acetonitril Test for Thyroid and Some Alterations of Metabolism. R. Hunt, Boston.—p. 257.
- Distribution of Vagus Nerves to Sino-Auricular Junction of Mammalian Heart. G. Bachmann, Atlanta, Ga.—p. 300.
- Studies in Fatigue. XIII. Staircase Phenomenon in Mammalian Skeletal Muscle. C. M. Gruber, St. Louis.—p. 338.
- Ash of Human Sweat Produced by Heat and Work. G. A. Talbert, Chicago.—p. 350.
- Inadequacy of Our Present Blood Volume Methods. P. D. Lamson and S. M. Rosenthal, Baltimore.—p. 358.
- \*Shape of Glomeruli and Bowman's Capsules in Active and Inactive Kidney. W. N. F. Woodland, London.—p. 368.
- Resistance of Fish to Salts and Alkalinity. R. T. Young, University, N. D.—p. 373.

**Retinal Reflex in Frogs.**—An investigation of the parts of the central nervous system involved in transmitting the "retinal reflex" impulse is reported on by Moorhouse. Removal of the cerebral hemispheres appears to shorten the average reaction time of the retinal reflex, and to make the response more active. The area of the frog's brain which is most important in forwarding the impulse is the optic tectum, especially the anterior portion.

**Results of Proposed Tests for Fatigue.**—Lee and Van Buskirk examined experimentally a considerable number of physical tests which either have been proposed, or might be employed, as indicators of fatigue in human beings. They failed to find in any of the tests a reliable criterion of the daily physical fatigue of the individual from such physical exertion as a walk of 14 miles.

**Mechanism of Sterilization of Female by Spermatotoxin.**—McCartney asserts that female rats may be sterilized for a period of from two to twenty-two weeks by subcutaneous injections of spermatozoa, or testis extract (confirming the work of Guyer and Dittler on rabbits). Subcutaneous injections of other organ extracts do not cause sterility. The sterility seems to be due to the presence of spermatotoxins in the vaginal and uterine secretions of the immunized animal. These spermatotoxins immobilize and agglutinate the spermatozoa. Within limits, the degree of immunity appears to be proportional to the amount of the antigen injected. Immunization with spermatozoa does not affect the sexual cycle (ovulation and rut) of the female (confirming the work of Dittler). Subcutaneous injection of spermatozoa into adult male rats tends to cause destruction of the spermatozoa and atrophy of the testes (confirming the work of De Leslie on rats and Guyer on rabbits). This effect may be only temporary. Subcutaneous injection of sperm suspension from a rooster into egg laying hens, does not influence the rate of egg production, but renders the eggs infertile for a period of from twelve to sixty-seven days. Injection of chicken liver extract does not produce infertility of the eggs.

**Effects of Loss of Thyroid and Parathyroid Glands.**—Hammett has made an examination of the effects on the growth in body length, body weight and tail length of male and female albino rats deprived of the thyroid and parathyroid, or of the parathyroid glands alone at 100 days of age and then allowed to grow until 150 days of age. The response was a retardation in growth of the parts measured. From the quantitative standpoint the growth of the females was retarded or obstructed to a greater degree by the experi-

mental procedures than was that of the males. It would appear from this that the female rat is more dependent on the stabilizing influence of the thyroid and parathyroid glands in growth than are the males.

**Acetonitril Test for Thyroid.**—The acetonitril test was developed primarily in connection with a study of thyroid which was to be administered as a drug by mouth. It has served a useful purpose in various ways. Hunt's experiments confirm and extend the work previously reported as to the marked effects of diet on the resistance of mice to acetonitril; they also indicate that vitamins may be concerned in this action. Earlier work showing a very close parallel between the physiologic activity of thyroid (as determined by the acetonitril test) and the iodine content is fully confirmed; this has been found to be true for the thyroids of a number of species of animals and for thyroids with extreme ranges in iodine content; for the thyroid in exophthalmic goiter (with one exception); for thyroid iodized in vivo and for fetal thyroids (with the exception of one abnormal gland). The physiologic activity of thyroxine, both by feeding and by intravenous injection, is (expressed in terms of iodine content) less than that of thyroid. No evidence of the presence of physiologically inactive iodine in the thyroid was found (except in the case of two abnormal glands). Additional experiments are reported showing that the blood in certain pathologic conditions (especially those in which the thyroid is involved, but also in nephritis) contains unknown, or unidentified, substances which markedly increase the resistance of mice to acetonitril.

**Condition of Glomerulus During Renal Secretion.**—The results of Woodland's experiments are reported completely to disprove the statement of Brodie and Mackenzie that during normal diuresis fluid is contained in the capsule, and to invalidate their conclusion that the glomerular epithelium secretes urine. The only alternative suppositions are that the glomerulus either filters urine or has nothing whatever to do with the actual production of urine. Woodland believes that the whole of the urine is secreted by the tubular epithelium; the encapsulated glomerulus acts solely to reduce pressure and retard current while maintaining volume (in other words, it has the same effect on the blood stream as a waterfall has on a river) and is a device necessitated by the proximity of the kidneys to the aorta—the seat of maximum arterial pressure.

#### American Journal of Public Health, Detroit

January, 1923, 13, No. 1

- Health Officer's Challenge to General Practitioner. J. D. Robertson, Chicago.—p. 1.
- Channel and Some Shoals in Municipal and State Child Hygiene Administration. M. E. Champion.—p. 6.
- Important Considerations in Relation of Food to Disease. J. C. Geiger, Chicago.—p. 10.
- Tuberculosis Demonstration Plans of Milbank Memorial Fund. D. B. Armstrong.—p. 14.
- Place of Proteins in Diet in Light of Newer Knowledge of Nutrition. H. H. Mitchell.—p. 17.
- Control of Diphtheria. W. H. Park, M. C. Schroeder and A. Zingher, New York.—p. 23.
- Importance of Epidemiology as Function of Health Departments. W. H. Frost, Baltimore.—p. 33.
- Service. B. L. Arms.—p. 37.

#### American Journal of Roentgenology and Radium Therapy, New York

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- Newer Investigations of Problem of Roentgen-Ray Dosage. O. Glasser, Baltimore.—p. 1.
- Problem of Roentgen-Ray Dosage. W. Friedrich, Freiburg, Germany.—p. 6.
- Intestinal Reaction to Erythema Dose. C. L. Martin and F. T. Rogers, Dallas, Tex.—p. 11.
- Important Points in Technic of Roentgenologic Examinations of Urinary Tract. B. H. Nichols, Cleveland.—p. 19.
- \*New Light on Gastric Peristalsis. W. C. Alvarez, San Francisco.—p. 31.
- \*Bone Lesions of Smallpox; Report of Cases. F. B. Sheldon, Fresno, Calif.—p. 35.
- Diagnosis and Treatment of Bone Lesions. J. C. Bloodgood, Baltimore.—p. 42.
- Ionization Measurements. G. Failla, New York.—p. 48.
- Comparative Measurements Between Radium and Roentgen-Rays Concerning Energy Absorbed at Depth. H. R. Gaylord and K. W. Stenstrom, Buffalo, New York.—p. 56.



Results and Technic in Treatment of Carcinoma of Breast by Radiation. B. J. Lee, New York.—p. 62.  
Automatic Switch for Bucky Diaphragms. E. V. Powell, New York.—p. 67.  
Use of Bucky-Potter Diaphragm with Fluoroscope. W. C. Alvarez, San Francisco, Calif.—p. 69.  
Effect of War on Development of Roentgenology. P. M. Hickey, Ann Arbor, Mich.—p. 70.

**Gastric Peristalsis.**—Alvarez says that new evidence has been obtained as to the location and behavior of the gastric pacemaker. Stomach blocks and dissociations have been observed. Cole's discovery of gastric systoles has been confirmed. Several peculiar types of peristalsis are described, and some contractions are shown which might perhaps be called, by analogy, pyloric extrasystoles. Two or three different types of contraction can take place simultaneously in one segment of the stomach much as they do in one segment of bowel. There is a close relation between the activities of the pyloric end of the stomach and the duodenum.

**Bone Lesions of Smallpox.**—In one of the cases reported by Sheldon, the woman, a Chinese, had had smallpox when 3 or 4 years of age. At the time she was seen she had deformities of both wrists and shortening of the right humerus and the bones of the right forearm. The ulna in each forearm appeared to be longer than the corresponding radius, causing deformities of the wrists. The second patient, a Chinese, aged 67, entered the hospital for pains in the feet. Roentgenograms showed fusion of the distal extremities of the tibia and fibula. These also were fused with the astragalus. The first and fifth metatarsals of both feet showed shortening. Under the fluoroscope, deformities of the hands and right elbow were noted. Films of the right elbow show complete absence of articulation, and complete fusion of all bones. So complete is this fusion that the medullary canal of the humerus can be followed directly into that of the radius and that of the ulna. The left hand showed marked shortening of the fifth metacarpal, and also a smaller shaft than the right fifth metacarpal. The right hand showed shortening of the first, second, and fifth metacarpals. Of these short metacarpals, only one has a smaller shaft than normal. The history of this man showed no bone injury, no evidence of inflammatory troubles, and no pains or aches until within the last six months, but there was a history of smallpox sixty-four years previously. Both patients being Chinese, Sheldon asks: "Is the particular variola of the Orient different from that of the Occident, or are we simply not recognizing these cases?"

### Annals of Surgery, Philadelphia

January, 1923, 77, No. 1

- \*Cancer of Larynx: Is It Preceded by Recognizable Precancerous Condition? C. Jackson, Philadelphia.—p. 1.
- \*Arterial Decortication. C. L. Callander, San Francisco.—p. 15.
- \*Peri-Arterial Sympathectomy. E. P. Lehman, St. Louis.—p. 30.
- Aluminum-Potassium Nitrate in Treatment of Suppurative Conditions. Particularly Osteomyelitis. M. Thorek, Chicago.—p. 38.
- Cholecystostomy Versus Cholecystectomy. J. C. O'Day, Honolulu, Hawaii.—p. 48.
- Cholelithiasis, Cholecystitis and Cholangitis. A. B. Keyes, Chicago.—p. 52.
- Certain Aspects of Surgery of Gallbladder. O. F. Lamson, Seattle.—p. 64.
- Case of Retention Cyst from Liver; Review of Literature. J. F. X. Jones, Philadelphia.—p. 68.
- \*Colloid Carcinoma. D. Parham, Rochester, Minn.—p. 90.
- Bone Tumors. Metastasis to Lungs from a Pure Myxoma. J. C. Bloodgood, Baltimore.—p. 106.

**Precancerous Stage of Cancer of Larynx.**—If it is admitted that certain curable laryngeal conditions are in some cases the sequential predecessors of incurable cancer, Jackson says, it is clearly the duty of the physician not only to eradicate those curable precancerous conditions, but to contribute to their early recognition by applying to them the term "precancerous," however faulty such a word may be from a purely scientific, histologic point of view. From a clinical point of view, continual laryngeal irritation from any cause in a person of cancerous age, may be regarded as clinically precancerous, in the sense that these conditions may be contributory factors in the etiology of cancer, and as such should be cured, surgically or otherwise.

**Results of Arterial Decortication.**—Ten arterial decortications were performed by Callander on six patients. For one of these patients three arteries were decorticated for disease of three extremities, while for another patient the operation was performed on two arteries for trouble in two extremities. In the spastic group of three cases no improvement can be recorded. In the three cases in which an obliterative arteritis seemed to play the predominant rôle, one definite cure is recorded. In one of these cases no improvement followed the operation, and the patient died later from an ascending gangrene of the extremity. In the third case, no improvement followed the operation, and the gangrene remained as before intervention. In a case of pain in the thumb, the pain disappeared following the operation, but for it there was substituted another pain in the flexor group of muscles. This pain later likewise disappeared, and there has been no recurrence of the symptoms.

**Perivascular Sympathectomy.**—Lehman concludes that the "perivascular sympathectomy" of Leriche in the dog does not result experimentally in the physiologic changes in the extremity which he described in clinical cases, and the vasodilation from proved total sympathectomy does not affect wound healing.

**Colloid Carcinoma.**—Two hundred and three cases of colloid carcinoma of the gastro-intestinal tract are analyzed by Parham. Colloid carcinomas occurred in the stomach (6.5 per cent.), cecum (22.2 per cent.), appendix (7.0 per cent.), transverse colon (7.3 per cent.), sigmoid (4.3 per cent.), rectum (5.5 per cent.), pancreas (two cases), gallbladder (8 per cent.), salivary glands (one case), bladder (2.5 per cent.), prostate (one case), kidney (one case), ovary (1.1 per cent.) and breast (1.12 per cent.). Peritoneal carcinomas occurred in 16 per cent. of all cases. Colloid carcinoma is usually slow of growth and late to metastasize to glands and other organs. It often grows by permeation and may cause extensive thickening of the wall of the affected organ. Local glands are often involved long before metastasis has reached distant glands. Though histologically less malignant on account of permeation of adjacent tissues, it is particularly difficult to eradicate. Death is often delayed, but the eventual mortality is greater than in other types of carcinoma. Recurrence is often entirely localized to the site of origin. Many patients with colloid carcinoma respond remarkably well to treatment by roentgen ray and radium.

### Archives of Internal Medicine, Chicago

January, 1923, 31, No. 1

- \*Carbon Dioxid and Oxygen Content of Stomach Gas in Normal Persons. A. D. Dunn and W. Thompson, Omaha.—p. 1.
- \*Chemotherapy of Bacterial Infections. II. Chemotherapy of Experimental Localized Bacterial Infections with Special Reference to Pleuritis. J. A. Kolmer, Philadelphia.—p. 9.
- \*Experimental and Clinical Study of Quinidin Sulphate: I. Experimental. H. M. Korns, Cleveland.—p. 15.
- \*Experimental and Clinical Study of Quinidin Sulphate: II. Clinical. H. M. Korns, Cleveland.—p. 36.
- Technic of Determination of Velocity of Arterial Pulse Wave. C. Lundsgaard and O. Beyerholm, Copenhagen, Denmark.—p. 56.
- \*Relation Between Ingested Fat and Lipemia of Diabetes Mellitus. P. L. Marsh and H. G. Waller, Ann Arbor, Mich.—p. 63.
- \*Defects in Membranous Bones, Diabetes Insipidus, and Exophthalmus; Report of Case. L. C. Grosh and J. L. Stifel, Toledo, Ohio.—p. 76.
- \*Orthopnea. C. D. Christie and A. J. Beams, Cleveland.—p. 85.
- \*Effect of Olive Oil on Gastric Function as Measured by Fractional Analysis. B. C. Lockwood and H. G. Chamberlin, Detroit.—p. 96.
- \*Basal Metabolism in Dementia Praecox and Manic-Depressive Psychoses. C. E. Gibbs and D. Lemcke, New York.—p. 102.
- \*Hippuric Acid Synthesis as Test of Renal Function. S. Morgulis, G. P. Pratt and H. M. Jahr, Omaha.—p. 116.
- \*Edema Associated with Moderate Bicarbonate Administration During Convalescence from Pneumonia. C. A. L. Binger, A. B. Hastings and J. M. Neill, New York.—p. 145.

**Carbon Dioxid and Oxygen Content of Normal Stomach Gas.**—Evidence was obtained by Dunn and Thompson that atmospheric air introduced into the stomach tends to come into equilibrium with the blood gases within one hour in the case of carbon dioxid, and considerably later, if at all, in the case of oxygen. All the carbon dioxid found in the stomach gas of normal persons, whether fasting or after a full meal, can be accounted for by secretion or diffusion from the gastric mucosa. In the study of stomach gas occurring in pathologic



conditions, an upper normal limit of at least 9 per cent. carbon dioxid tension must be postulated.

**Chemotherapy of Bacterial Infections.**—Studies with ethyl-hydrocuprein hydrochlorid (optochin) in the treatment of experimental pneumococcus pleuritis and meningitis, Kolmer states, have indicated that in chemotherapeutic investigations in bacterial infections, localized infections of serous cavities offer a more favorable means for eliciting therapeutic effects of a medicament than do generalized infections and bacteremias. In localized infections of serous cavities it is possible to inject into the sacs sufficient amounts of medicament to render the contents bactericidal and curative. These amounts may be at least one half the maximum tolerated doses. In rapidly fatal generalized infections with bacteremias, however, the intravenous injection of one half the maximum tolerated dose may be without therapeutic effects. Localized bacterial infections of serous cavities would appear to be especially useful for chemotherapeutic studies with medicaments possessing high toxicity when the margin between dosis tolerata and dosis curativa is small. In the production of localized infections of such serous cavities as the subarachnoid space, pleural sacs and pericardium, test animals possessing some natural immunity to the test bacterium should be chosen, like the guinea-pig for pneumococcus pleuritis and pericarditis, the cat or dog for pneumococcus meningitis and the dog or rat for tuberculous pleuritis. The test micro-organism should be of moderate rather than extreme virulence, in order to reduce the invasiveness or aggressiveness of the bacteria for the blood and other organs.

**Experimental Study of Quinidin Sulphate.**—Korns reports in detail the results of experiments made for the purpose of studying some of the effects of quinidin on the normal dog and guinea-pig heart.

**Clinical Study of Quinidin Sulphate.**—Detailed reports are made by Korns of seven successful and six unsuccessful cases of auricular fibrillation treated with quinidin sulphate. The result attained by the use of quinidin in a case of ventricular paroxysmal tachycardia is also described. Clinical evidence is presented which lends support to the theory that the action of quinidin in abolishing circus movement is not conditioned by the type of cardiac lesion, degree of decompensation, duration of fibrillation, etc., but is essentially related to the pathologic physiology of the auricular muscle. The most important contribution of quinidin to clinical cardiology is that it provides a means by which the rôle of auricular fibrillation in myocardial failure may be quantitatively estimated. Quinidin is universally a heart muscle poison. In each patient an estimate of this effect must be weighed carefully against the expectation of benefit to be derived from restoration of normal sinus mechanism. Indications for the use of digitalis and quinidin are entirely separate and clearly defined. Electrocardiograms made before and after resumption of normal rhythm are analyzed.

**Relation Between Ingested Fat and Lipemia of Diabetes Mellitus.**—March and Waller noted the effect on the lipoidemia of diabetic patients of the high fat, low protein, low carbohydrate diets described by Newburgh and Marsh. The patients selected for this study represented a number of different types of diabetes mellitus, varying in age, severity of the disease, duration of diabetic symptoms, previous treatment, degree of acidosis. From an examination of the records of these patients it is apparent that there was no increase in the lipid content of the blood during the periods of observation, and, of much greater significance, that in the patients in whom a hyperlipoidemia existed when they first came under observation, the total fat fell to approximately normal levels. It is regarded by Marsh and Waller as being very strong evidence that the prevalent assumption which postulates that diabetic hyperlipoidemia is dependent on the excessive ingestion of fat is unwarranted. The explanation of this phenomenon must be sought in some other unusual feature of the diabetic state.

**Membranous Bone Defects, Diabetes Insipidus and Exophthalmos.**—A case is reported by Grosh and Stifel exhibiting some degree of dwarfism, diabetes insipidus, defects in the membranous bones of the skull and pelvis, and exophthalmos.

Pituitary extract, administered hypodermically, controlled the polyuria temporarily. After a time the effect of pituitary extract diminished. It had no effect on the bone defects.

**Orthopnea.**—Christie and Beams divide orthopnea into (1) orthopnea of necessity and (2) orthopnea of choice. Orthopnea cannot exist without reduction of the vital capacity. If the original loss from disease is great and the patient loses an addition amount on lying down, there will be "orthopnea of necessity." "Orthopnea of choice" is more common and exists when the original loss from disease is smaller or the percentile loss, as a result of posture, is not so great. Some patients with as great reduction in their vital capacity from disease as is seen in "orthopnea of necessity" do not become orthopneic.

**Effect of Olive Oil on Gastric Function.**—The experiments made by Lockwood and Chamberlin demonstrate that olive oil, given before meals, as is usually done clinically, reduces the average total acidity about 12 per cent., and lowers the high point of the curve about the same degree. It causes a marked delay of the test meal in the stomach and the oil is the last portion of the meal to be evacuated. When oil is given, regurgitation of bile is five times as frequent as without it.

**Basal Metabolism in Psychoses.**—Definitely abnormal basal rates were found by Gibbs and Lemcke in psychotic patients in the more acute phases of their psychosis. The variations from normal were greater in dementia praecox patients than in cases of manic-depressive insanity. The patients did not show sufficient evidence to explain satisfactorily the findings in terms of thyroid or pituitary disorder. Several of the dementia praecox patients did show some evidence of disturbed growth, including incomplete sex maturity. Thyroid by mouth raised the rate to normal in two cases of manic-depressive depression, but did not do so in a case with more marked constitutional psychopathic features. No immediate mental improvement followed thyroid in these three cases.

**Hippuric Acid Synthesis as Test of Renal Function.**—In normal persons benzoic acid, administered either as the acid or its salt is completely synthesized to hippuric acid and the kidney is stimulated to enhanced activity. In nephritic and cardiorenal patients the synthesis is never complete and the kidney is apparently fatigued by the excessive exertion. The benzoic acid passing in the urine is not all conjugated with glycol to form hippuric acid. A variable portion appears as the uncombined acid or as its salts. The unconjugated part of the benzoic acid can be reduced to an entirely negligible amount on a diet of milk and toast. Following the ingestion of a large dose of benzoic acid or sodium benzoate the free benzoic acid in the urine invariably increases though to a very variable degree in different individuals. The increase is particularly great in patients with definite kidney affection. In all the patients whom Morgulis and his associates examined the amount of hippuric acid synthesized in twenty-four hours, following the ingestion of a standard dose of benzoic acid or sodium benzoate, ranged from 53 to 95 per cent., while from 59 to 100 per cent. of the benzoic acid administered could be recovered in the urine. In one group of patients, the recovery of benzoic acid has been almost the same as in normal subjects, but the hippuric acid synthesis was less than in the normal owing to the fact that a large amount of the benzoic acid was excreted in unconjugated form. In another group of patients both the elimination of total benzoic and of hippuric acid falls much below that in the normal subject. The free benzoic acid in the urine following a dose of the acid is apparently greater in the nephritic than in the cardiorenal cases. Clinically, the method will in all probability not find extensive application or favor because it involves much work, and in order to secure reliable results the patient's regimen must be supervised very closely.

**Edema Associated with Bicarbonate Administration in Pneumonia.**—The case studied by Binger and others was one of lobar pneumonia, in which an average of 5.7 gm. sodium bicarbonate had been given for a period of thirty-five days prior to admission to the hospital. The patient showed intense cyanosis with marked oxygen unsaturation of the arterial blood, rapid breathing, anasarca and hydrothorax,



and evidence of alkalosis (blood  $p_{H}$  7.55). Oxygen therapy largely relieved cyanosis and dyspnea. Immediately thereafter the patient began to excrete retained bases and water. Diminution of edema was accompanied by gradually increasing lung volume and return to normal type of respiration. No definite impairment of kidney function could be established. At the time of discharge from the hospital, the patient's blood oxygen, carbon dioxide content, and  $p_{H}$  were normal, the urine  $p_{H}$  was normal, and the urine was free from albumin and casts. The case is reported to show that definite untoward results may follow the administration of sodium bicarbonate, and to point out the character of certain of these untoward results.

### Boston Medical and Surgical Journal

Feb 1, 1923, 188, No. 3

- Basal Metabolism of Young Girls. F. G. Benedict, Boston.—p. 127.  
Pasteur—Scientist, Believer, Democrat. C. W. Eliot.—p. 138.  
Nicolaas Tulp and Rembrandt's Painting, "Anatomical Demonstration by Tulpus." C. G. Cumston, Geneva, Switzerland.—p. 143.

### Bulletin Lying-In Hospital of City of New York

January, 1923, 12, No. 3

- \*Fundamental Cause of Splanchnoptosis. Abdominal Incompetence: A Developmental Factor. II. Study of Certain Details of Prenatal Evolution of Abdomen: With Special Reference to Status at Term. A. C. Viator, Boston.—p. 139.  
\*Treatment of Cardiac Failure During Pregnancy. H. E. B. Pardee, New York.—p. 207.  
Analysis of Cases of Bacteriemia Occurring at Lying-In Hospital. M. Rosensohn, New York.—p. 214.

**Cause of Splanchnoptosis.**—Viator endeavors to demonstrate anatomically and experimentally that the fundamental cause of visceral ptosis is abdominal incompetence and that this is a developmental factor; that, consequently, the retention of the viscera in their normal positions depends on the development of normal competence of the abdomen; and that failures in the normal development of this abdominal competence and visceral retention are correlated with the development of certain departures from the normal body form—the most constant of these departures being the retracted lower thorax.

**Cardiac Failure During Pregnancy.**—The important feature of heart disease during pregnancy, Pardee says, is the degree of cardiac failure. If this is slight the disease is of little importance. Even with a moderate degree of failure it will be possible for the child to be born if the mother is allowed to take a risk which is not so great as sometimes stated. The first attack of severe decompensation can usually be recovered from with proper treatment, unless the attack should occur during labor. With proper observation and prompt operation, severe decompensation should not occur during labor. Abdominal section is the operation of choice in the emergency, provided a low forceps delivery cannot be done. Ether anesthesia, started by chloroform, is a better anesthetic for these patients than gas oxygen. Oxygen inhalations from a mask are helpful to clear up persistent cyanosis. Without severe cardiac failure or after recovery from it, most patients can be carried through to term or to an induced labor during the eighth month. During labor, the attendant should watch for a pulse over 95 or respiration over 25 per minute, precordial discomfort, dyspnea, cough, and should not allow these small signs to become big before he puts an end to the labor. In treating lesser grades of failure during pregnancy, the patient must rest enough to spare the heart from overstrain, but this may not necessitate rest in bed for more than a short time. Digitalis should be given in doses sufficient to insure effect. With this treatment Pardee feels sure it will be possible to diminish the present mortality of about 25 per cent. for severe cases and 10 per cent. for all cases to a figure which is less disquieting.

### Endocrinology, Los Angeles

November, 1922, 6, No. 6

- Invitations to Research in Endocrinology. W. B. Cannon, Boston.—p. 745.  
Glandular Status of Brown Multilocular Adipose Tissue. A. T. Rasmussen, Minneapolis.—p. 760.  
Present Position of Testicle Transplantation in Surgical Practice: Preliminary Report of New Method. M. Thorek, Chicago.—p. 771.

- Steinach Operation: Report of Twenty-Two Cases with Endocrine Interpretation. H. Benjamin, New York.—p. 776.  
\*Analysis of One Thousand Testicular Substance Implantations. L. L. Stanley, San Quentin, Calif.—p. 787.  
Pathogenesis of Thyrotoxicosis. Part 2. N. W. Janney, Los Angeles.—p. 795.  
\*Positive Achievements of Endocrinology. A. S. Blumgarten, New York.—p. 811.

**Results of Testicle Substance Implantation.**—The results of 1,000 implantations of animal testicular substance in 656 human subjects, including seven females, are reported by Stanley. The greater number of subjects received only one injection, although some received as many as seven injections. Striking objective improvement was seen in numerous cases of general asthenia, acne vulgaris, asthma and senility. Subjective or objective improvement was seen in various cases of rheumatism, neurasthenia, poor vision and a few other conditions. The results, as a whole, are tabulated. In general, testicular substance seems often to have a beneficial effect in relieving pain of obscure origin and in the promotion of bodily well being. The operation is practically painless and harmless. The testicular substance was cut into strips with a knife or cork-borer, in sizes suitable for filling the pressure syringe. This instrument is similar to the one devised by Beck for paraffin injection. By means of a dental syringe with a No. 16 needle, 3½ inches long, the semisolid testicular substance was injected underneath the skin of the abdomen. There were comparatively few sloughs, and the patient was not subjected to a week's hospital inconvenience. The testicles of goats, rams, boars and deer have been used. So far as can be determined, there is very little difference in the effects produced by testicular material obtained from the different animals.

**Positive Achievements of Endocrinology.**—The progress in endocrinology is divided into several categories by Blumgarten: (1) progress in the well established syndromes of the various ductless glands; (2) contributions of endocrinology toward various nonspecific branches of medicine; (3) contributions to therapy, and (4) contributions to public health. Each item is discussed. The progress made in the treatment of endocrinopathies and in organotherapy, in general, is reviewed from the standpoint of what has been established, in other words, the actual accomplishments. Of the pharmaceutical products obtained from the ductless glands only specific substances are mentioned. Speaking of pluriglandular therapy, Blumgarten says: "It seems to me highly unscientific to prepare shotgun combinations of gland substances in the hope that the body will extract from these combinations those that it needs. The only way progress will ever be made in rational organotherapy is to be able to recognize specific deficiencies and to supply effective substances for these deficiencies. If more than one deficiency is present they should be individually recognized and two or more corresponding substances given."

### Georgia Medical Association Journal, Atlanta

January, 1923, 12, No. 1

- Overmedication in Infants and Children. B. Bashinski, Macon.—p. 1.  
Complemental Breast Feeding. L. Gerdine, Athens.—p. 4.  
Antitoxin and Intubation in Diphtheria. W. N. Adkins, Atlanta.—p. 8.  
Control of Common Contagious Diseases. J. A. Wood, Atlanta.—p. 12.  
Importance of State Pediatric Society as Component Part of State Medical Association. W. A. Mulherin, Augusta.—p. 19.  
Treatment of Congenital Syphilis in Children. J. Yampolsky, Atlanta.—p. 23.  
Complete versus Subtotal Hysterectomy. G. W. Quillian, Atlanta.—p. 26.  
Asthma. A. H. Bunce, Atlanta.—p. 29.  
Report of 1,000 Obstetric Cases in Private Practice. J. T. Benson, Atlanta.—p. 31.

### Iowa State Medical Society Journal, Des Moines

January, 1923, 13, No. 1

- Control of Circulation. G. Kessel, Cresco.—p. 1.  
Tumors of Breast. W. Jepson, Sioux City.—p. 5.  
Surgery of Thyroid. P. A. White, Davenport.—p. 11.  
Obstetric Problems Involved in Stillbirths and Deaths of New-Born Infants. C. S. Bacon, Chicago.—p. 15.  
Recent Progress in Treatment of Chronic Empyema. C. A. Hedblom, Rochester, Minn.—p. 21.  
Newer Aspects of Urinary Surgery. D. N. Eisendrath, Chicago.—p. 25.



**Journal of Cancer Research, Baltimore**

April, 1922, 7, No. 2

- \*Biologic Evidence for Inheritability of Cancer in Man. XVIII. M. Slye, Chicago.—p. 107.  
Acidosis, Alkalosis and Tumor Growth. William H. Woglom, New York.—p. 149.  
Fibrosarcoma of Skin in a Gold Fish (*Carassus Auratus*). J. F. Schamberg and B. Lucke, Philadelphia.—p. 151.  
Action of Buried Tubes of Radium Emanation on Neoplasias in Plants. I. Levin and M. Levine, New York.—p. 163.  
Rôle of Neoplasia in Parasitic Diseases of Plants. I. Levin and M. Levine, New York.—p. 171.

**Inheritability of Cancer in Man.**—Cancer and noncancer tendencies segregate out and are transmitted as such, therefore, Slye maintains, they are unit characters. A specificity of tissue type in specific organs from ancestor to offspring segregates out and is transmitted as such. It is, therefore, a unit character. Since these things are unit characters, it is possible to manipulate them by selective breeding and thereby to implant them indelibly in any species, or to eliminate them permanently and completely from any species. Cancer and noncancer behave like the absence and presence, respectively, of a mechanism fitted to control proliferation and differentiation in regenerative processes, and an animal either has this mechanism or lacks it, no matter to what species he may belong. There is, therefore, a ready and certain genetic method of escape from cancer for the individual and for the race. The demonstration of the inheritability of cancer and noncancer tendencies in mice, Slye believes, is a demonstration of the inheritability of these tendencies in man and in all other species which show cancer, if the theory of evolution is to be maintained and the existence of a biologic law is admitted. From the procedure of analyzing stock into its unit characters in order to manipulate the cancer tendency, there has emerged the fundamental law of heredity—"What goes into the germ plasm must come out in the offspring."

**Journal of Pharmacology and Experimental Therapeutics, Baltimore**

January, 1923, 20, No. 6

- Importance of Suprarenal Glands in Action of Pilocarpin, Physostigmin and Strychnin. C. W. Edmunds, Ann Arbor, Mich.—p. 405.  
\*Investigation into Chemotherapy of Acridine Dyes in Experimental Tuberculosis. M. I. Smith, Washington, D. C.—p. 419.  
Toxicity and Actions of Normal Butylamines. P. J. Hanzlik, San Francisco.—p. 435.  
Pharmacologic Properties of Some Iso-Urea Derivatives. S. Basterfield, Saskatchewan, Canada.—p. 451.  
Comparative Stimulant Efficiency of Some Local and Systemic Agents on Normal and Depressed Respiration and Irritant Efficiency of Some Agents. P. J. Hanzlik, San Francisco.—p. 463.  
\*Studies on Pharmacology of Sodium Citrate. I. Influence of Sodium Citrate on Respiration and Circulation. W. Salant and N. Kleitman, Augusta, Ga.—p. 481.

**Chemotherapy of Acridin Dyes in Experimental Tuberculosis.**—The acridin derivatives, acriflavine, proflavine, and their silver compounds, acridinium yellow, and acridin orange, Smith finds, possess a high degree of inhibition on the growth of the tubercle bacillus in vitro. These substances do not alter the pathogenicity of the tubercle bacillus when exposed to their action at 38 C. for forty-eight hours. Experiments made to determine whether the serum of animals treated with proflavine would show inhibiting or bactericidal properties for the tubercle bacillus yielded negative results. Proflavine, acriflavine and the silver compound of the latter were applied in the treatment of experimental tuberculosis in the guinea-pig and in the rabbit. No effect on the tuberculous process was noted.

**Influence of Sodium Citrate on Respiration and Circulation.**—The results presented by Salant and Kleitman show that sodium citrate may be both a stimulant and a depressant. Small and medium doses of sodium citrate stimulated respiration in dogs, cats and rabbits under urethane anesthesia. Such doses may cause stimulation or depression of respiration in dogs anesthetized with chlorotone. Small and medium doses given to dogs, when morphin-ether narcosis was employed, were without any effect on respiration in some experiments, while in others the action was the same as under chlorotone anesthesia. Respiration was depressed or paralyzed by large doses of citrate even when injected slowly into the circulation, and by medium doses when repeated at

short intervals. Transitory acceleration of respiration occurred when large doses of citrate were injected intramuscularly in unanesthetized animals; also when injected subcutaneously into decerebrated and into unanesthetized animals. Respiration was only slightly accelerated or was slowed by citrate given after double vagotomy. Small and medium doses of citrate were without effect or produced only a slight fall of blood pressure in dogs under chlorotone or urethane anesthesia. A fall or a rise of blood pressure may occur when citrate is given to dogs under morphin-ether narcosis. Small and medium doses of citrate given intravenously to cats under urethane anesthesia produced a fall of blood pressure of from 30 to 60 per cent.

**Journal of Radiology, Omaha**

January, 1923, 4, No. 1

- Bone Cysts (Ostitis Fibrosa): Variety—Polycystic Ostitis Fibrosa. J. C. Bloodgood, Baltimore.—p. 1.  
Principles of Stereovision. J. B. Wantz, Chicago.—p. 9.  
Weight Development in White Rats as Influenced by Roentgen-Ray Exposure. S. E. Sanderson, Detroit.—p. 13.  
Problem of High Potential Measurement as Associated with Deep Therapy at High Voltages. F. Rieber, San Francisco.—p. 15.

**Kansas Medical Society Journal, Topeka**

January, 1923, 23, No. 1

- Organic vs. Functional Disease. G. E. Paine, Hutchinson.—p. 1.  
Visual Field in Functional Nerve Diseases. H. L. Scales, Hutchinson.—p. 2.  
Kahn Precipitation Test for Syphilis. W. Levin.—p. 4.  
Heredity. T. A. Stevens, Caney.—p. 6.  
Focal Infections. B. P. Smith, Neodesha.—p. 9.

**Maine Medical Association Journal, Portland**

January, 1923, 13, No. 6

- Treatment of Essential Hypertension. M. C. Webber, Portland.—p. 147.  
Surgical Strategy as an Adjunct to Local Anesthesia in Abdominal Surgery. R. E. Farr, Minneapolis.—p. 156.

**Military Surgeon, Washington, D. C.**

January, 1923, 52, No. 1

- Safety in Aviation. W. H. Wilmer.—p. 1.  
Progress in Aviation Medicine During 1921. L. H. Bauer.—p. 9.  
Further Observations on Cardiovascular Physical Fitness Test. E. C. Schneider.—p. 18.  
Oxygen Exhaustion of Blood as Factor in Flight Limitations. C. W. Greene and C. H. Greene.—p. 28.  
Experimental Analysis of Cause of Occasional Fainting and Collapse in Official Air Service Test. C. W. Greene and N. C. Gilbert.—p. 31.  
Eye in Aviation—Some Experience in Work of Department of Ophthalmology, Medical Research Laboratory, Third Aviation Instruction Center, A. E. F., France. C. Berens, Jr.—p. 35.  
Aviation Problems in Navy. V. S. Armstrong.—p. 49.  
Selection of Aviation Personnel. P. O. Northington.—p. 53.  
Medical Aspects of Naval Gas Warfare. G. H. Mankin.—p. 60.  
Medicine in Revolt of Sixteenth Century—Historical Sketch. H. M. Brown.—p. 65.  
I. Determination of Specific Preventive Immune Bodies Produced in Blood as Result of Preventive Typhoid and Paratyphoid B Inoculations. II. Notes on Relation Between Preventive Inoculations and Status Lymphaticus. B. Tanabe.—p. 83.  
Reminiscence of Battle of Borodino. W. W. Keen.—p. 97.  
Fleet Surgeon—Some Thoughts on His Official Relationship and Opportunities for Useful Service. W. H. Bell.—p. 98.

**New Jersey Medical Society Journal, Orange**

January, 1923, 20, No. 1

- Present Status of Diabetic Treatment. F. M. Allen, Morristown.—p. 1.  
Foreign Bodies in Air and Food Passages. H. B. Orton, Newark.—p. 15.  
Reasons for New Higher Voltage Shorter Wave Length Roentgenotherapy. J. T. Stevens, Montclair.—p. 19.  
Subacute Bacterial Endocarditis in a Boy Fifteen Years Old. F. C. Johnson, New Brunswick.—p. 23.

**Oklahoma State Medical Association Journal, Muskogee**

January, 1923, 16, No. 1

- Appendicitis and Appendiceal Colic. R. D. Long, Oklahoma City.—p. 1.  
Acute Appendicitis. A. S. Risser, Blackwell, Okla.—p. 5.  
Acute Appendicitis in Children. M. E. Stout, Oklahoma City.—p. 11.  
Cardiospasm. J. C. Braswell, Tulsa.—p. 15.  
Bone Manifestations in Early Syphilis. C. B. Taylor, Oklahoma City.—p. 17.  
Case of Foreign Body (Chewing Gum) in Bladder—Removed by Lithotrite. J. C. Mraz, Oklahoma City.—p. 23.



## FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

## British Medical Journal, London

Jan. 20, 1923, 1, No. 3238

- Practical Difficulties in Obstetrics and Gynecology. C. Berkeley.—p. 89.  
 Diagnosis of Indefinite Masses in Breast. D. C. L. Fitzwilliams.—p. 94.  
 Minor Traumatic Disabilities of Upper Limb. P. J. Verrall.—p. 97.  
 Dosage of Radium. D. Turner.—p. 100.  
 \*Function of Suprarenal Glands and Relation to Concentration of Hydrogen-Ions. R. McCarrison.—p. 101.  
 \*Embolism of Right Brachial Artery as Complication of Lobar Pneumonia. A. H. D. Smith.—p. 103.  
 \*Blood as Guide to Early Diagnosis in Lead Poisoning. R. Craik.—p. 103.

**State of Suprarenal Glands in Inanition.**—The observations recorded by McCarrison are said to provide evidence that: (a) the enlargement—with increased epinephrin content—of the suprarenal glands in inanition and in avitaminosis may be correlated with the acidosis which is associated with these states. Its occurrence during the terminal phases of avitaminosis, its association with marked respiratory disturbances, with falling body temperature, and with interference with oxygenation, and its rapid disappearance on the provision of the missing vitamins, suggest that it is an emergency effort on the part of the suprarenal glands. (b) The attempted exercises of emergency function by the suprarenal glands may be expected to occur in all conditions of alkalosis or of acidosis.

**Embolism of Right Brachial Artery as Complication of Lobar Pneumonia.**—The crisis in Smith's case came on the ninth day. Convalescence was uneventful until the fourth day, when symptoms of acute tuberculous infection of the right lung were manifested. About ten days later, during the night, the patient was seized with very acute pain in the right arm. Examination of that arm showed no apparent difference from the other. There was, however, severe pain with paresis of the muscles. The hyperesthesia extended from the wrist to the shoulder. There was almost complete anesthesia in the tips of the thumb and fingers. The right radial pulse was absent both to the finger and to the stethoscope. Following the course of the radial upward no pulsation could be felt in the antecubital fossa. At the level of the posterior wall of the axilla, in the line of the vessel, a very tender lump about the size of a small hazelnut could be felt. Above this level the vessel could be felt pulsating strongly. The radial pulse in the left side was present and bounding in type. The appearance of the arm did not change. The patient was profoundly intoxicated, delirium became marked, and night sweats became very heavy. The cough was lessened, but the physical signs in the lung were still those of acute phthisis. In a few days definite signs of endocarditis were present. The diagnosis was septic endocarditis following lobar pneumonia, with embolism of the brachial artery as a complication.

**Blood as Guide to Early Diagnosis in Lead Poisoning.**—In the absence of serious anemia, Craik says that punctate basophilia is more likely to be caused by lead than by anything else. Basophilia is pathologic, and demands investigation. So long as it is present something is acting injuriously on the marrow; if this is lead, the urine will contain a trace of the metal even in the absence of other symptoms. Craik suggests that a diagnosis of lead poisoning should depend, not on gross signs but on appreciation of suspicious symptoms and on an investigation of the blood and urine.

Jan. 27, 1923, 1, No. 3239

- Some Problems of Prostatectomy. J. T. Walker.—p. 133.  
 Surgical Treatment in Cases of Pulmonary Tuberculosis. H. M. Davies.—p. 138.  
 Damaged Lungs and Bronchiectasis. C. Riviere.—p. 141.  
 \*Unusual Case of Typhoid Spine with Symptoms of Spinal Cord Affection. H. Turner.—p. 142.  
 Treatment by Diathermy. W. J. Turrell.—p. 143.  
 The Posthippocratic Schools of Medicine. R. O. Moon.—p. 145.

**Unusual Case of Typhoid Spine with Symptoms of Spinal Cord Affection.**—In November, 1919, Turner's patient developed typhoid. In February, 1920, he began to suffer from pains in the back. In December, 1920, he went through an

attack of recurrent fever. He began to lose power in his legs in March, 1921. Standing or walking were impossible. There were distinct signs of partial spinal cord compression in the form of ankle and patella clonus; Babinski signs; rigidity of muscles and weakness of the lower limbs; loss of sense of position in the toes; hyperalgesia at the level of the seventh to eighth dorsal segments, and hyperesthesia of all kinds below; ataxic paresis of the lower limbs; no disturbance of the bladder or rectum. Examination of the spine showed an ill defined swelling between the shoulder blades between the fifth and seventh dorsal spinous processes. The integument in the same region was edematous and reddened. Fluctuation was distinct. Palpation of the spine inflicted great pain, especially in the lateral parts of the vertebrae. On opening the abscess, slightly odorous grey-green pus was found, from which a pure culture of typhoid bacillus was obtained. The cavity of the abscess was located to the right of the spinous processes, and led deeply toward the corresponding laminae. The subsequent course of the case was favorable, although the spinal cord symptoms subsided very slowly. Turner asserts that this is the only positive case of typhoid spondylitis complicated by suppuration.

## Journal of Tropical Medicine and Hygiene, London

Jan. 1, 1923, 26, No. 1

- Castellani's Bronchomoniliasis; Report of Case with Pneumonic Onset and Peculiar Clinical Course. N. Farah.—p. 1.  
 Preliminary Training for Colonial Medical Services. E. P. Minett.—p. 5.  
 Case of Combined Pellagra and Beriberi. R. W. Mendelson.—p. 6.  
 \*Treatment of Leprosy by Intravenous Injection of Chaulmoogra Oil. P. Harper.—p. 7.

Jan. 15, 1923, 26, No. 2

- Tonsillomycoses. A. Castellani, M. Douglas and T. Thomson.—p. 19.  
 Researches on Rickettsias and Etiology of Typhus Fever. J. De Sousa and A. Guimaraes.—p. 24.  
 Dengue vs. Malaria. R. E. Ingram-Johnson.—p. 27.

**Treatment of Leprosy by Injection of Chaulmoogra Oil.**—Altogether 265 cases of leprosy at Makogai (Fiji) are, or have been, under treatment by the intravenous injection of chaulmoogra oil for periods of from a few weeks to two years. Forty thousand intravenous injections of the oil have been given without any serious mishap. The results reported by Harper are: dead, 11 patients, of whom 5 were very aged; improved, 28, including 15 discharged from the asylum; unchanged, 195; worse, 31. Of other attempts at specific treatment, Harper says: Intravenous injection of tartar emetic is useless for leprosy. Of four cases treated by sodium hydnocarpate, two have become worse and two have remained unchanged. Of eight cases treated by sodium morrhuate, none showed any improvement and one became worse. Moogrol was used intravenously and intramuscularly on ten patients, of whom four became worse and six remained unchanged. Harper is now trying tuberculin. So far he believes it to be useless, as no patient has yet shown signs of improvement. Harper's conclusion is that treatment by intravenous injection of chaulmoogra oil is of value in early cases, and is preferable to treatment by sodium gynocardate, sodium hydnocarpate, or sodium morrhuate. The moogrol brand of ethyl esters of chaulmoogra oil is too painful for intramuscular use, but is much more easily borne intravenously (in doses of 10 minims daily) than the crude oil. Whether the esters are as potent for good as the crude oil is not yet certain. He gives from 5 to 10 minims of the crude chaulmoogra oil, sterilized by heat, without the addition of any other drugs, daily, except Sunday, for three weeks at a time; this is followed by a rest for two weeks. Iritis, laryngitis and acute tuberculosis are indications for caution.

## Lancet, London

Jan. 20, 1923, 1, No. 5186

- \*Achlorhydria: Its Relation to Pernicious Anemia and Other Diseases. A. F. Hurst.—p. 111.  
 Deep Roentgen-Ray Therapy. W. Pilger.—p. 115.  
 Results of Deep Roentgen-Ray Therapy. R. Morton and H. B. Lee.—p. 117.  
 \*Atavistic Degenerative Diathesis of Tuberculosis. W. C. Rivers.—p. 120.  
 \*Wassermann and Flocculation Tests Compared. A. L. Urquhart.—p. 125.



\*Syphilis Transmitted to Third Generation. C. F. T. East.—p. 128.  
Technic of Spinal Analgesia for Laparotomy. S. A. Lane.—p. 129.

**Relation of Achlorhydria to Pernicious Anemia.**—From observations of cases, Hurst says, it is obvious, that anemia does not cause achlorhydria. The achlorhydria is present when the anemia is not. The achlorhydria is not of specific type, but, whatever its origin, it predisposes to the development of pernicious anemia. The history in most cases points to the achlorhydria being of primary or constitutional form. This is undoubtedly the inherited factor in the cases of familial pernicious anemia which have been recorded with increasing frequency in the last few years. In one of Hurst's cases the achlorhydria was due to alcoholic gastritis, in another it resulted from gastro-enterostomy for ulcer, and—conclusive proof that the achlorhydria is primary and not secondary—in at least five cases, pernicious anemia followed artificial achylia produced by total gastrectomy for cancer.

**Atavistic Degenerative Diathesis of Tuberculosis.**—Rivers believes that the so-called stigmata of tuberculous predisposition are nothing but signs of an already present infection. In Rivers' opinion, atavistic reversion to a primitive susceptibility to tuberculosis (seen in uncivilized races) needs mention, while race mixture can hardly be held universally responsible for tuberculous predisposition. Of 175 juvenile consumptives, twenty-two showed either squint, ichthyosis, red hair or persistent lanugo. In these twenty-two there was one miscegenate (mixed race) to every seven; but in the remainder only one miscegenate to every seventeen.

**Wassermann and Flocculation Tests Compared.**—Urquhart contends that the flocculation test gives as reliable results as the Wassermann reaction; and that the flocculation test is preferable on account of its greater simplicity.

**Transmission of Syphilis to Third Generation.**—The case described by East is said strongly to support evidence that congenital syphilis can be transmitted to the second generation. A young woman, aged 23, had syphilitic iritis. The Wassermann reaction in her blood was strongly positive. The father showed no trace of syphilitic lesion; nor was there anything in his history to suggest that he had ever had syphilis. His Wassermann reaction was negative. The patient's mother said that she had never had a miscarriage. The cornea of her left eye had unmistakable scars of an old interstitial keratitis. She had an external strabismus in this eye. In other respects her eyes were normal. Her teeth were typically hutchinsonian. The arch of the palate was high. The Wassermann reaction was strongly positive. She was an only child; her father had been a soldier on foreign service, who died of "senile decay" at the age of 71. East says that one may suspect that the soldier grandfather, who had seen much foreign service, originally introduced the syphilis into the family.

Jan. 27, 1923, 1, No. 5187

Need for Research in Framing Tuberculosis Schemes. S. L. Cummins.—p. 165.

Relationship of Medicine and Toxicology. W. Willcox.—p. 167.

\*Diastase in Blood and Urine as Measure of Renal Efficiency. G. A. Harrison and R. D. Lawrence.—p. 169.

\*Glucose Tolerance in Chronic Arthritis and Allied Conditions. G. L. K. Pringle and S. Miller.—p. 171.

Asthma in Childhood. A. D. Fordyce.—p. 175.

Indications and Results of Myomectomy for Uterine Fibroids. A. E. Giles.—p. 178.

\*Survival of a Premature Infant Under Artificial Feeding. P. T. O'Farrell.—p. 181.

Postoperative Mania. W. J. Tyson.—p. 182.

Unusual Case of Drug Susceptibility. H. H. Mills.—p. 182.

**Results of Blood Diastase Tests.**—The blood diastase of twenty-four healthy active persons was investigated by Harrison and Lawrence. It varied between 3 and 7 units, with a mean of 4.4. The index of twenty-three convalescent hospital patients, confined to bed for the greater part of the day (excluding diabetics and cases recovering from diseases of the pancreas, liver, or kidney), varied between 3 and 10 units, with a mean of 6.5. A blood diastase above 10 or below 3 may, therefore, be regarded as abnormal. The results of tests in forty-three cases of kidney disease showed, in comparison with the urea and other tests of renal efficiency, that diastase retention only occurs when at least three quarters of the total kidney substance has been thrown out of action.

In one case the diastase tests failed to reveal very extensive renal damage. The patient died from uremia twenty-four hours after prostatectomy. His diastase in both blood and urine was normal, but the urea concentration test gave 1.55 per cent. While estimations of diastase in both blood and urine are of value in confirmation of other renal efficiency tests, the authors would not rely on an estimation confined to the urine.

**Glucose Tolerance in Arthritis.**—In general, the findings of Pemberton have been corroborated by Pringle and Miller. A lowered glucose tolerance was found in a large proportion of cases of arthritis and muscular fibrositis. This lowered tolerance was specially marked in the great majority of the severe infective cases as well as in the cases of periarticular and muscular fibrositis. The degree of intolerance was roughly proportional to the activity of the arthritic process. The glucose toleration reaction tended to return to normal with convalescence and recovery. The return to normal, was usually most rapid when the infective foci were removed. The estimation of glucose tolerance, in conjunction with the other clinical signs and symptoms, was found to be of assistance in the classification as well as in the prognosis of cases of arthritis. It is stated that in cases with markedly low glucose tolerance, and in which the focus of infection cannot be found nor removed, the prognosis is bad.

**Survival of a Premature Infant Under Artificial Feeding.**—The case reported by O'Farrell is of interest because the infant weighed 35½ ounces at birth, and was born during a malarial paroxysm, and also because she progressed under artificial feeding.

### South African Medical Record, Capetown

Dec. 23, 1922, 20, No. 24

Incidence of Undulant Fever in South Africa. Is It a Menace to Urban Communities? A. Gow.—p. 475.

Pneumoperitoneum. C. F. Beyers.—p. 479.

\*How to Apply Medicines to Skin. C. Pijper.—p. 483.

Case of Chronic Stenosis of Common Bile Duct Treated by Opothepy. C. Lundie.—p. 487.

**Nongreasy Base for Ointments.**—The preparation used by Pijper as a basis for ointments is the "bassorin" or "cremor exsiccans" of the English Pharmaceutical Codex, the "linimentum exsiccans" of some continental codexes, which is prepared from tragacanth, 4 parts; glycerin, 2 parts, and water, 94 parts. It is never used pure, and only as a basis, for the incorporation of medicaments: zinc (up to 10 per cent.); phenol (up to 1 per cent.); salicylic acid (up to 5 per cent.); chrysarobin (up to 5 per cent.), and tar (up to 5 per cent.).

### Archives Internationales de Laryngologie, Paris

November, 1922, N. S., 1, No. 1

\*Maxillary Sinusitis in the New-Born. F. J. Collet.—p. 1041.

Roentgen Study of Ear Development in the Fetus. Ferreri.—p. 1051.

**Maxillary Sinusitis in the New-Born.**—Collet reports a case of maxillary sinusitis in a month old baby. He was able to find only six similar cases in the literature in infants ranging in age from 3 days to 5 weeks. The prognosis is grave. Suppuration may last several months, notwithstanding repeated intervention and prolonged nasal wash. In two cases, at least, death occurred with abscess of the lung, or, as in one of his own cases, with abscess of the brain. The pathogenesis of this maxillary sinusitis is different from that of the adult. In the fetus the sinus is connected with the nasal fossa by a large orifice and its cavity is small. These make it improbable that it is due to an infection of nasal origin. Osteitis of the superior maxilla is the dominant factor. Collet considers it a general infection localized in the maxilla and consecutively in the sinus.

### Archives Médicales Belges, Liège

October, 1922, 75, No. 10

Foreign Bodies in the Digestive Tract. E. Henrard.—p. 977.

\*Immediate Repair of Perineum Torn in Delivery. F. Leynen.—p. 983.

Sanitary Conditions in Eastern Europe. L. van Boeckel.—p. 987.

**Immediate Repair of Perineum Torn During Delivery.**—The levator ani muscles support the intrapelvic organs and protect the perineum. Leynen states that in rupture of the



perineum the levator ani muscles must be brought together and the whole muscular floor must be strengthened by methodical movements which he calls "perineal gymnastics." To bring the levator ani together, a strong catgut thread is passed around the two segments and tied. The suture of the other perineal tissues is of secondary importance. The "perineal gymnastics" consist of contraction of the sphincter of the anus. On account of the connection between this muscle and the internal segment of the levator ani, the sphincter contracts at the same time as the levator. This is easily confirmed by palpation through the vagina. This exercise is practiced after every delivery especially when the perineum is soft but not torn. The movements are made daily about twenty times during the first fifteen days. This strengthens the muscular floor of the perineum and pelvis.

### Bulletin Médical, Paris

Dec. 23, 1922, 36, No. 52

\*Morbid Syndrome Due to Nervous Shock Before Sleep. A. Hanns.—p. 1051.

Nephritis Due to Bismuth. C. Simon.—p. 1052.

**Nervous Spasms on Retiring.**—The man of 36 suffered from spasmodic attacks of nervous jerking as soon as he lay down to sleep. Hanns studied the case for six months, but was unable to explain the spasms until a second similar case in a somewhat older man allowed him to conclude that the syndrome was due to slight disturbance in the spinal cord or brain, from fatigue, general debility or slight uremic intoxication. Under sedatives, rest and strict hygiene, the spasms disappeared completely. The reclining position seemed to be an essential factor in these *secousses nerveuses pré-somniques*, as he calls them.

### Néoplasmes, Paris

November-December, 1922, 1, No. 6

\*Refractometric Tests with Cancer. A. Knipfer.—p. 177.

Experimental Epithelial Tumors in Mice. U. Parodi.—p. 188.

**Refractometric Tests of Serum of Patients with Cancer.**—Knipfer made parallel tests with Freund-Kaminer's and Abderhalden's methods. Deep treatment with roentgen rays increased the cytolytic power of cancer serum, while healthy serum sometimes lost this power. Abderhalden ferments also increased after this treatment in cancer, while they were never present in health. He hopes that this reaction to roentgen rays will improve the serologic diagnosis of cancer.

### Presse Médicale, Paris

Dec. 20, 1922, 30, No. 101

\*Meningitis with Lymphocytosis. E. Apert and R. Broca.—p. 1093.

\*Sulphur in External Dermatotherapy. R. Sabouraud.—p. 1094.

\*Action of Chlorids on Gastric Secretion. A. Frouin.—p. 1096.

**Curable Meningitis with Lymphocytosis.**—Apert and Broca publish two cases of meningitis with marked lymphocytosis in the cerebrospinal fluid, and no polymorphonuclears. One case was due to *Spirochaeta icterohemorrhagiae*, the other gave negative reactions. Both children recovered completely. They point out that the lymphocytosis was too absolute for tuberculosis.

**Sulphur in External Dermatotherapy.**—Sabouraud reviews the uses of preparations of sulphur and concludes that they are excellent in all affections of the follicles or localized around the hair follicles.

**Action of Chlorids on Gastric Secretion.**—Frouin found in experiments on dogs that a salt-free diet inhibits within a short time (about eight days) completely the gastric secretion. Ingestion of salt increases the secretion, as also salt given intravenously. Yet the direct application of salt to the mucosa of the stomach gives better results. Chlorids of calcium and magnesium have the same action as sodium chlorid on the stomach secretion.

Dec. 23, 1922, 30, No. 102

\*Periarterial Sympathectomy. R. Leriche.—p. 1105.

Topography of Nerves of the Brachial Plexus. E. Olivier.—p. 1108.

\*External Secretion of Pancreas in Asystolia. Garofeano.—p. 1109.

Elimination of Albumin in Chronic Nephritis. A. Hanns.—p. 1110.

\*Epileptic Attacks Due to Cerebral Inhibitions. P. Hartenberg.—p. 1111.

Drugs Antagonistic to Quinidin. L. Cheinisse.—p. 1113.

**Periarterial Sympathectomy.**—Leriche gives the bibliography and technic of his operation. Experiments on animals cannot refute his findings since it seems that the typical changes (contraction of the artery by irritation and a subsequent vasodilation) occur only in man. The periarterial (or arterial) sympathectomy is different from Jaboulay's denudation of arteries with tearing of the nerves. Jaboulay would certainly have noticed the contraction of the artery during the operation if it had occurred with his method, as it does with Leriche's. He publishes a case of severe arteriosclerosis in which the carotid tore during the operation. Caution is therefore necessary in senile gangrene, and injections of alcohol into the arterial sheath might sometimes be preferable to block the nerve fibers. The operation causes a better peripheral circulation with elevation of arterial pressure and local temperature. It is indicated with impaired peripheral nutrition not of central nervous, vascular or blood origin. The beginning stages of chronic arthritis of peripheral joints might be improved by it, and, indirectly, the functioning of the endocrine glands might be favorably influenced. [A recent article on Leriche's periarterial sympathectomy was published in THE JOURNAL, page 173.]

**Functional Value of External Secretion of Pancreas in Asystolia.**—Garofeano studied the pancreatic secretion of trypsin and amylase in cases of decompensated heart. Both ferments were present in larger amounts than normal, especially when the gastric secretion was impaired.

**Epileptic Attacks Due to Cerebral Inhibition.**—Hartenberg attributes severe epileptic attacks to an inhibition of cortical centers, and not to excitation. He considers minor attacks and epileptic equivalents from the same point of view.

### Schweizerische medizinische Wochenschrift, Basel

Dec. 21, 1922, 52, No. 48

\*Exfoliative Dermatitis. E. Wieland.—p. 1165.

Benign Albuminuria in Children. P. Lauener.—p. 1170.

Volume of Blood in Pregnant Women. E. Gueissaz and F. Wanner.—p. 1173. Cont'd.

\*Injury of the Retina by the Sun. J. Strebel.—p. 1177.

Therapeutic Increase of the Blood Coagulability. P. F. Nigst.—p. 1178. Cont'n.

Folklore on Erysipelas. A. Martin.—p. 1183.

**Exfoliative Dermatitis.**—Wieland observed an epidemic of twelve cases of pemphigus neonatorum at the same time as twenty-one cases of pemphigus in the maternity hospital. The cases in the adults were light and the epidemic stopped after sterilization of the clothes. The infants presented all forms from an abortive pemphigus to the most severe and fatal type. In seven infants *Staphylococcus aureus* was cultivated from the blisters and from the blood in two cases.

**Injury of the Retina by the Sun in Spite of Protective Glasses.**—Strebel's patient observed the eclipse of the sun through deep blue glasses, and did not recover from the injury to the macula lutea. Blue glasses do not protect and should not be used.

### Policlinico, Rome

Dec. 18, 1922, 29, No. 51

\*Substances with Incomplete Vitamin Action. M. Pantaleoni.—p. 1653.

Painful Cavernoma in the Lumbar Muscles. L. Cevario.—p. 1654.

\*Activation of Malaria Parasites. I. di Pace.—p. 1658.

\*Breeding of Oysters and Hygiene. M. Gioseffi.—p. 1660.

**Substances with Incomplete Vitamin Action.**—Pantaleoni investigated the action of different substances in polyneuritic pigeons and animals. He confirmed the partially curative action of ammonia, but not of its salts.

**Activation of Malaria Parasites by Different Methods.**—Di Pace compared the effects of different substances on the activation of latent malaria. Injections of strychnin nitrate were best. Epinephrin, pituitary extract, milk, and cold baths were a little less effective.

**Hygiene in the Breeding of Oysters.**—Gioseffi discusses the difficulties of hygienic supervision of oyster breeding. Local interests interfere with the requirements. He quotes an example in which the sanitary authorities had to admit for sale oysters from a port which served as a cesspool for 30,000 inhabitants. He recommends special laws.



## Riforma Medica, Naples

Dec. 18, 1922, 38, No. 51

- \*Intravenously Injected Gases in Peritoneal Cavity. L. Torraca.—p. 1205.
- \*Breathing Gymnastics in Treatment of Adenoids. P. Brisotto.—p. 1206.
- Origin of Peritoneal Pseudomyxoma. S. G. Giardina.—p. 1209.
- Pathogenesis of Herpes Zoster. M. G. Marinesco.—p. 1211.
- Recent Literature on Thymus Hyperplasia. L. Torraca.—p. 1214.

**Accumulation of Intravenously Injected Gases in the Peritoneal Cavity.**—Torraca found that not only oxygen, but nitrogen and carbon dioxide injected intravenously accumulate in the peritoneal cavity. He assumes a retrograde transport of the gases through the vena cava.

**Pulmonary Ventilation and Breathing Gymnastics in Adenoids.**—Brisotto points to the harmful effects of the shallow mouth breathing of children suffering from adenoids. Breathing gymnastics increased the capacity of respiration very markedly, even before the adenoids were removed. It should be used in all cases of operation, because the patients need the education, which contributes much to the general welfare of the patient and to the normal development of the thorax.

## Revista de Medicina y Cirugía, Havana

Dec. 25, 1922, 27, No. 24

- \*Epidemic Poliomyelitis. G. Aróstegui.—p. 814.
- \*Eradication of Yellow Fever, Plague and Malaria. M. G. Lebrede.—p. 821.
- \*Synthesis of Gastric and Duodenal Ulcers. Luis Agote.—p. 836.
- Abortive Treatment of Syphilis. D. Speroni.—p. 851.

**Arrest of Epidemic of Acute Anterior Poliomyelitis.**—Aróstegui describes a small epidemic of rudimentary or abortive cases of poliomyelitis in August at a Havana institution with 200 child inmates. Seven of the children presented symptoms in a mild form, and contacts developed headache, tremor, and a febrile meningeal reaction. In all, the symptoms spontaneously subsided when the children and their attendants were isolated. The upper air passages were systematically disinfected and the children were given sun baths two or three times a day. The prompt recognition and isolation of the early cases evidently aborted the epidemic disease.

**Eradication of Yellow Fever, Plague and Malaria in Latin America.**—Lebrede is chief of the public health service in Cuba. He pleads for concerted and vigorous action by the Latin American nations to stamp out malaria. Plague and yellow fever are already under control. When local conditions do not allow mosquito extermination, reliance must be placed on quinin sterilization of the human hosts.

**The Stomach-Gallbladder-Duodenum Syndrome.**—Agote declares that the traditional separation of the medical from the surgical department conflicts with modern science. Concerted supervision by the internist and the surgeon has revealed previously unsuspected interlocking functions of the gallbladder, stomach and duodenum. He calls attention in particular to the acid-sensory syndrome with gastric ulcer. The gastric juice may not be excessively acid, but the tissues are extra sensitive; gases distend the walls, and adhesions are stretched. Vomiting relieves by evacuating the overacid or the distending contents. This clinical picture may be maintained by adhesions dragging on these viscera. The only difference is that the disturbances are less acute but more constant, with occasional sharp exacerbations and with less connection with meals. The symptoms from adhesions may include cardiospasm and other reflex actions. The roentgen-ray findings and tests of the chemistry of the stomach are of little use, but pneumoperitoneum shows up the adhesions. Whatever treatment is instituted, the adhesions must be broken up. Surgical treatment of an ulcer, regardless of its site and duration, is advocated. In laparotomies, every effort should be made to avoid unnecessary manipulation of peritoneum and viscera.

## Semana Médica, Buenos Aires

Nov. 30, 1922, 2, No. 48

- \*Celiac and Hypogastric Neuroses. J. Arce and C. A. Castaño.—p. 1105.
- Prenatal Care. Mamerto Acuña.—p. 1111.
- Visceral Cirrhosis with Hydatid Cysts. R. G. Cabred.—p. 1114.
- Welfare Work for Child of School Age. J. P. Garrahan.—p. 1119.

Three Years Operative Experience with Hydatid Cysts. O. Ivanisovich.—p. 1123.

Physical Training. E. Romero Brest.—p. 1128.

Workmen's Compensation. G. Bosch Arana.—p. 1132.

Infection of Milk in Tuberculous Cows. E. Fynn.—p. 1135.

Cow's Milk for Infants under Six Months. E. Foster.—p. 1137.

Enlarged Glands in Neck in Examining Recruits. J. A. López.—p. 1140.

Vomiting as a Symptom. A. Vitón.—p. 1142.

Sacralization of Lumbar Vertebra. F. Z. Guerrini.—p. 1145.

**Celiac and Hypogastric Neuroses.**—Arce and Castaño assert that pathology of the sympathetic system is being recognized in many conditions hitherto ascribed to gallstones, ulcers, etc. Sympathetic tonus is determined by the balance of the endocrine organs. Hence organotherapy is indicated in the celiac and hypogastric neuroses. The complete picture of these two types of abdominal neurosis is described, with the treatment that has been found effective.

## Siglo Médico, Madrid

Nov. 25, 1922, 70, No. 3598

Radioactivity of Manzanares Waters. J. Muñoz del Castillo.—p. 509.

\*Treatment of Diabetes. C. von Noorden.—p. 510.

Traumatic Gangrene: Two Cases. Carrasco.—p. 512. Conc'n.

Medical Service in Morocco Campaign. E. Slocker.—p. 515. Conc'n.

**Treatment of Diabetes.**—Von Noorden protests against fasting for more than forty or sixty hours at most. During the fast he keeps the patient in bed, allowing only weak tea and brandy in water, and gives a sedative. This brief period of fasting is a good preliminary to any course of treatment. In grave cases it should be repeated in two weeks at latest. A day of green vegetables is useful before the "oatmeal cure," and this should be followed by the day of fasting. Sixty hours of fasting is the most effectual means to ward off impending coma. The Allen method, he says, is unnecessarily cruel. Equally good results can be obtained with his milder regimen, without danger of debilitating the patient. The main thing is to test the tolerance in the individual cases.

Jan. 6, 1923, 71, No. 3604

\*Complement Fixation Under Vaccine Therapy. J. Codina Castellví.—p. 1. Conc'n.

Mucous Cyst in Conjunctiva. C. Jimenez Lopez et al.—p. 6.

Etiology of Gastro-Intestinal Disease of Infants. F. García Martínez.—p. 10.

**Complement Fixation Under Vaccine Therapy.**—Codina Castellví's tests were made on tuberculous patients under treatment with Ferran's antialpha vaccine.

## Archiv für Gynäkologie, Berlin

Dec. 30, 1922, 117.

\*Transactions of German Gynecologic Congress.—pp. 1-436.

**German Gynecologic Congress.**—The seventeenth biennial meeting of the German Gesellschaft für Gynäkologie was held at Innsbruck, in June, 1922. The 111 communications, with discussions, are published in full. No special topics had been appointed for discussion, but radiotherapy of cancer, the Kielland forceps, Traube's color photography, and the gas interchanges in eclampsia seemed to attract most attention. The discussion of childbirth under hypnosis was particularly lively, some denouncing while others lauded it. Mansfeld reported complete amnesia in 90 per cent. of thirty cases and absolute analgesia in 50 per cent. He protests against the term "hypnosis," saying that the procedure should be called "twilight sleep by suggestion." Hallauer reported application of a very little chloroform supplemented by hypnosis or suggestion—*narko-hypnose*—in 3,000 gynecologic and obstetric cases.

## Archiv für klinische Chirurgie, Berlin

Dec. 14, 1922, 121

\*Transactions of Surgical Congress.—pp. 3-311.

\*Surgical General Infection. E. Lexer.—p. 315.

Experimental Bases for Disinfection of Wounds. Neufeld.—p. 326.

To Insure Antisepsis in the Depths. R. Klapp.—p. 343.

To Insure Asepsis. W. Noetzel.—p. 349.

\*Examination of Blood in Surgical Affections. O. Stahl.—p. 358.

Autolysis and Regeneration of Tissues. von Gaza.—p. 378.

\*Influence of Operations on Organism. W. Löhr.—p. 390.

\*Technic for Thyroidectomy. E. Streissler.—p. 409.

\*Valvular Control of Respiration. W. Pfanner.—p. 421.

\*Operative Treatment of Pulmonary Tuberculosis. A. Brunner.—p. 432.



- Trephining the Sella Turcica. F. Oehlecker.—p. 490.  
 \*Puncture of Corpus Callosum. H. Kästner.—p. 512.  
 \*Localized Fibrous Osteitis. G. E. Konjetzny.—p. 567.  
 \*Technic for Suture of Bone. M. Kirschner.—p. 635.  
 Surgery of Carotid Gland. H. Klose.—p. 689.  
 Radium Treatment of Cancer of Esophagus. Kurtzahn.—p. 725.  
 Anatomy of Membranous Pericollitis. E. Seifert.—p. 754.  
 \*Absorbable Tampons. H. Kümmell.—p. 764.  
 Pain in the Viscera. G. v. Bergmann.—p. 774.  
 Resolvent for Scar Structures. E. Payr.—p. 780.

**Transactions of Surgical Congress.**—This bulky volume of 830 pages contains the proceedings of the forty-sixth annual meeting of the Deutsche Gesellschaft für Chirurgie. It also contains twenty articles which are elaborations of short communications presented at the congress.

**Surgical General Infection.**—Lexer rejects the term sepsis, and insists on the necessity for discriminating between bacterial general infection and toxic general infection, and between the pyogenic, putrid and specific forms of bacterial general infection. Toxic general infection is of animal, bacterial, or tissue toxin origin. Various questions are suggested by this classification of surgical general infection: Do the toxic tissue elements act alone or with bacterial toxins to influence the course of the disturbances? Do the tissue toxins act by promoting the virulence of the bacteria, or by reducing the defensive forces? To what extent do they influence immunity reactions? He cites data already available which throw a little light on these questions. The main thing now is to separate the tissue toxins from the products of bacteria. This may reveal new bases for therapeutics.

**The Differential Blood Count in Surgical Affections.**—Stahl emphasizes that it is not the presence of pus that modifies the cell content of the blood, but the consequences of the presence of pus. He insists on the necessity for serial blood counts. The general trend is more instructive than single findings. Change in the blood count precedes the clinical aggravation or improvement, as he shows by nine typical cases.

**Influence of Surgical Affections on the Blood.**—Löhr presents evidence which confirms the profound changes in the blood serum under the influence of operations, fractures and infectious diseases. The destruction of tissue induces changes of a chemico-physical nature although the albumin content may not be modified. The speed of sedimentation of the red corpuscles is a sensitive and reliable index of them. The extent of the modification of the sedimentation indicates the extent of tissue destruction. With this extraordinarily simple and easy test we can distinguish between inflammatory and noninflammatory bone lesions, etc. The changes it reveals occur earlier and last longer than changes in the differential leukocyte count. The sedimentation test is most instructive when it is negative.

**Technic for Thyroidectomy.**—Streissler slits the isthmus of the thyroid on the median line and removes the necessary portions of the thyroid without molesting the capsule. By this means there is no danger of removing the parathyroid bodies, while the nourishment is insured of the portions of the thyroid that remain.

**Valve Breathing.**—Pfanner states that the results of experimental research, clinical experience and necropsy findings show the identity of the process in all conditions in which some valvelike mechanical obstacle impedes respiration. He analyzes the various clinical pictures involved, from goiter and foreign bodies to asthma.

**Operative Treatment of Pulmonary Tuberculosis.**—Brunner remarks that surgical treatment of pulmonary tuberculosis is gaining ground. In 381 cases of thoracoplasty, 35 per cent. were apparently cured by the operation. In 116 recent cases at Munich, 66 per cent. were apparently cured. The mortality was 27 per cent. in the nineteen cases in which the operation was completed at a single sitting. It was only 4 per cent. in the forty-seven with more than one sitting. In Sauerbruch's service, thoracoplasty operations in fifteen years total 500.

**Puncture of the Corpus Callosum.**—Kästner relates that Payr has applied this measure in twenty-four cases of congenital and seven cases of acquired hydrocephalus. Persistent improvement followed in the majority. It was applied in cases of brain tumor, epilepsy, trauma of the head, etc., to a

total of 102 cases. He extols the method as a routine practice for hydrocephalus, and also for decompression in brain tumors when the tumor cannot be localized. It is absolutely contraindicated with cerebellar tumors, and with tumors near the third or fourth ventricles and aqueduct of Sylvius. With epilepsy, tentative puncture of the corpus callosum is justified after failure of other measures.

**Localized Fibrous Osteitis.**—Konjetzny discusses the origin and nature of solitary cysts in bones and myelogenous giant-cell sarcoma.

**Suture of Bones.**—Kirschner gives an illustrated description of various devices for suturing bone stumps together and reconstructing the shaft. Twenty-two cases are summarized.

**Absorbable Tampons.**—Kümmell's absorbable tampons have been described in these columns. He states that they are proving very useful. In his twenty cases, the catgut pad healed in place without reaction on the part of the tissues.

### Deutsche medizinische Wochenschrift, Berlin

Dec. 15, 1922, 48, No. 50

- \*Changes of Reactivity During Treatment. H. Königer.—p. 1669.  
 \*Sensitiveness of Skin to Poisons. K. Zieler and H. J. Markert.—p. 1672.  
 \*Pathogenesis of Fever. R. Greving.—p. 1673.  
 Heart Insufficiency and Digitalis. R. Ehrmann and L. Dinkin.—p. 1675.  
 Action of Cinchophen. E. Starkenstein.—p. 1677.  
 Blood Sugar Determination. R. Offenbacher.—p. 1677.  
 Typhus Fever. D. D. Pletnew.—p. 1678.  
 Acetic Ether in Pediculosis. Bieber.—p. 1678.  
 Bacterioscopic Diagnosis of Rectal Gonorrhea. A. Calmann.—p. 1678.  
 Ring Forceps. Pfeiderer.—p. 1678.  
 Modification of the Record Syringe. H. Feriz.—p. 1679.  
 Abnormal Labor Pains. M. Henkel.—p. 1679.  
 Foreign Bodies in Nose. Finder.—p. 1681.  
 Committee Report on Reform in Medical Examinations. J. Schwalbe.—p. 1684. Cont'd.  
 Beginnings of Bacteriologic Researches. C. Flügge.—p. 1685.

**Changes of Reactivity During Treatment.**—Königer found that the reactivity of a patient changes after antipyretics, narcotics, mechanotherapy, hydrotherapy and parenteral injections of specific and nonspecific proteins, in a regular way: After a short lowering of resistance comes a stage of increased resistance, which may last for one or two days. This phenomenon has nothing to do with specific immunity, since it occurs also in healthy subjects and vanishes comparatively soon. It is possible by keeping up in this way the nonspecific resistance to overcome the specific allergy of the patient. The action of antipyretics is not merely symptomatic; it leads indirectly to a specific immunity because of the short periods of lowered resistance when the infection flares up. He attributes such an action also to quinin in malaria, mercury in syphilis, and salicylic acid in rheumatism. Parenteral injections of proteins are superfluous since the same action may be obtained with milder means, especially with physical treatment. The most important point is in the necessary intervals, and the optimal duration of these intervals depends on the individual changes in the reactivity, the *reizbarkeitsänderung*, of the subject. Very small doses of iodine (1 mg.), are sufficient in goiters if the intervals are not less than from three to eight days.

**Sensitiveness of Skin to Poisons in Tuberculosis.**—Zieler and Markert found that persons without tuberculosis react to intracutaneous injections of the diphtheria and dysentery toxins and of peptone in the same way as tuberculous patients. Such reactions never flare up in these patients after a subcutaneous injection of tuberculin.

**Pathogenesis of Fever.**—Greving reviews the modern investigations on the subject, especially those dealing with the relation of the central nervous system to the regulation of temperature. The production of heat is localized chiefly in the abdominal organs, and not in the muscles.

### Medizinische Klinik, Berlin

Dec. 10, 1922, 18, No. 50

- \*Psychic Infantilism. F. Jamin.—p. 1575.  
 \*Treatment of Permanently High Blood Pressure. Grober.—p. 1576.  
 \*Typhus Fever. M. H. Kuczynski.—p. 1579.  
 \*Determination of Borders of Lung and Exudates by Inspection. E. Weisz.—p. 1582.



- \*Anaphylaxis and Heart Failure in Diphtheria. G. Scholz.—p. 1585.  
Intravenous Use of Digitalis. S. Hirsch and M. Kaiser.—p. 1586.  
Operative Treatment of Abortion. Liepmann.—p. 1586. Id. Pentz.—p. 1587.  
Roentgen-Ray Diagnosis of Duodenal Ulcers. G. Herrnheiser.—p. 1587.  
Intravenous Injection of Concentrated Arsphenamin. J. R. Thim.—p. 1589. Conc'n No. 51, p. 1623.  
Dermatomyces. F. Pinkus.—p. 1593.  
Traumatic Deformities. S. Peltsohn.—p. 1594.

**Psychic Infantilism.**—Jamin emphasizes the importance of exogenous factors (nutrition, infectious diseases) in the pre-pubertal period, as causes of inhibition of psychic evolution. The treatment is expectant; and a cautious but methodical training in adaptation to social requirements is better than rest cures.

**Treatment of Permanent Hypertension by Physical Means.**—Grober begins with regulation of diet. For psychologic reasons it is better to prohibit coffee and nicotin entirely. High altitudes have a beneficial effect, as well as the sub-tropic and tropic climate. Mild hydrotherapy is good, especially shower baths at from 30 to 32 C. on chest and back (not on the head). The use of carbon dioxid baths is still doubtful; oxygen baths may increase the pressure in neuro-paths. Careful mechanotherapy and breathing gymnastics are beneficial. Periodical vcnesections are sometimes necessary. Some cases react very well, at least temporarily, to irradiation with blue or ultraviolet rays. General diathermy seems to give more permanent results.

**Typhus Fever.**—Kuczynski reports continued cultivations of a virus from guinea-pigs infected with typhus fever. He claims that this virus is identical with *Rickettsia prowazeki* and belongs to the proteus group. The Weil-Felix bacillus, *Proteus X*, is not the cause of typhus fever, but is very near this virus. Immunologic experiments performed by him and Eichholz on animals gave very good results, both prophylactic (vaccines) and therapeutic (serum).

**Determination of Borders of Lung and Exudates by Inspection.**—Weisz describes two interesting methods for determination of the lung area. The first consists in observation of a slight bulging of the intercostal spaces at the beginning of phonation. The patient repeats (with pauses between) the German word "kitt." Bulging is also distinct over an exudate (except in an open pneumothorax), and thus reveals the upper border of the liver in such cases. The second phenomenon was described by him twenty years ago. It consists in the formation of little pits, *grübchen*, during a quick and not too deep inspiration. The beginner should examine only narrow strips of the intercostal spaces (1 to 4 cm.), covering the rest with the hands. He explains the mechanical principles involved.

**Anaphylaxis and Heart Failure in Diphtheria.**—Scholz's patient, aged 31, who had been injected eight and a half years previously with diphtheria antitoxin, was treated for diphtheria with an intramuscular injection of 3,000 units of serum. Twelve days later urticaria set in, and three hours later complete collapse. No heart sounds were present. Camphorated ether revived the patient. Three hours later a new attack of urticaria was followed by weak pulse and disturbances of the sensorium. Inhalation of ether restored the patient again. Several similar attacks were stopped by inhalations of ether, and the patient finally recovered. Scholz points out the resemblance of this anaphylactic condition to the sudden death in diphtheria, and recommends the use of ether.

### Zeitschrift für urologische Chirurgie, Berlin

Nov. 4, 1922, 11, No. 3-4

- \*Reflex Anuria. K. Neuwirt.—p. 75.  
\*Urogenital Disease and Tonsillectomy. R. Picker.—p. 86.  
\*Hydronephrosis. P. Blatt.—p. 93.  
\*Nature of Hypertrophy of the Prostate. J. v. Borza.—p. 109.  
\*Tuberculosis of Genital Organs. R. Bachrach.—p. 114.  
Hydronephrosis from Phimosis. L. Raphaelson.—p. 122.  
"Vascular Complications with Hypernephroma." W. Israel.—p. 131.  
Reply. E. Rehn.—p. 136.

**Treatment of Reflex Anuria.**—Neuwirt says that the kidneys are more richly provided with nerves than almost any other organ. The splanchnics are the vasomotor nerves of the kidneys; blocking the splanchnic nerve not only arrests

kidney colic but also checks reflex inhibitions. It thus puts an end to reflex anuria and oliguria. Blocking the splanchnic nerve by Kappis' technic has the same effect as severing the nerve in animals. Neuwirt applied the Kappis method in a case of recurring kidney colic and reflex oliguria, probably induced by calculi, in a man aged 54. The results sustained his theoretical assumption, the colic subsided and the urine output increased to an average of 1,800 c.c. He blocked the splanchnic nerve on both sides in this case; possibly one side alone would have sufficed.

**Cure of Staphylococcus Infection of Urinary Apparatus.**—In the case described, the man, aged 30, had staphylococci regularly in the urine. They were evidently eliminated through the parenchyma of both kidneys. Local treatment had been applied thirty-eight times to the kidneys without avail. Picker then removed both tonsils, and in two days the urine was clear and sterile.

**Hydronephrosis.**—Blatt states that hematuria was the only clinical symptom in one of the twenty cases he has been studying. Anomalies in development were evident in the majority of the cases. His experience warns that cystic dilatation of the lower end of the ureter should be promptly corrected or otherwise hydronephrosis may follow. It was intermittent in one of his three cases in this group. A connection with affections of the female genital organs was frequently manifest. With dysmenorrhea, the possibility of hydronephrosis should always be considered. The latter has sometimes been mistaken for appendicitis, gallbladder disease, and even gastric ulcer.

**Nature of Hypertrophy of the Prostate.**—Borza concludes from his research that so-called hypertrophy of the prostate is not hypertrophy but a tumor, an adenoma of the accessory periurethral glands.

**Tuberculosis of Genital Organs.**—Bachrach analyzes 70 cases of tuberculous epididymitis in which the epididymis was removed since 1902. In 20 per cent. the kidney was also tuberculous. Reexamination of 25 more than three years later showed 15 apparently cured. Two patients have died of old age without return of the tuberculosis. One man died from tuberculous peritonitis after nine years of good health, subsequent to unilateral castration and nephrectomy. Two others died from generalized tuberculosis twelve and eighteen months later. Of the 70 patients, 36 were between 20 and 40 and 15 between 50 and 60 when the genital disease developed. There was a history of gonorrhea in 16. Voelcker's technic has made removal of the seminal vesicles practicable, and this has materially improved the prognosis with genital tuberculosis. In conclusion, Bachrach reports the case of a man of 35 who had had a series of operations on the genital organs for tuberculosis. The symptoms indicating endocrine insufficiency subsided after a testicle graft and removal of the left seminal vesicle.

### Zentralblatt für Chirurgie, Leipzig

Dec. 23, 1922, 49, No. 51

- \*Spastic Ileus and Lumbar Anesthesia. A. Mayer.—p. 1882.  
\*Early Detection of Cancer Recurrence. F. Franke.—p. 1885.  
Diagnosis of Loss of Femoral Nerve Function. Schmidt.—p. 1886.  
Operation for Fistula of Gallbladder. A. Hildebrandt.—p. 1887.  
Mixed Tumor of Parotid Gland, with Bone Metastasis. M. Budde.—p. 1888.  
\*Deutschländer's Tumors of the Metatarsus. H. Blencke.—p. 1889.  
Comment on "Prostatectomia Mediana." G. Neugebauer.—p. 1892.  
Modification of Deschamps' Needle for Ligation of Blood Vessels. L. v. Czirer.—p. 1894.  
Operative Method for Perforated Gastroduodenal Ulcer. H. Zoepffel.—p. 1895.

**Spastic Ileus Subsides Under Intraspinal Anesthesia.**—Mayer points out what seems to him a close connection between spastic ileus and lumbar anesthesia. In two cases, several days after a gynecologic laparotomy, ileus-like symptoms appeared suddenly, with meteorism, vomiting and painful stiffening of the intestines. Various means to restore intestinal function proved unavailing. Mayer decided to reopen the abdomen under renewed lumbar anesthesia. Immediately after the intraspinal injection of the procain-epinephrin mixture, the patient passed flatus and a copious stool. The operation was not performed, and the patient promptly recovered



without further complications. He is convinced that intestinal spasm was present and, furthermore, that it was dispelled by the lumbar anesthesia. Whether the anesthesia dispelled the intestinal spasm directly, or merely stimulated peristalsis, did not appear clearly. Mayer emphasizes that this treatment would of course be valueless in ileus of mechanical origin—it might even be dangerous.

**Method of Recognizing Beginnings of Cancer Recurrence.**—Franke recommends his method for the early recognition of beginnings of cancer recurrence in the region of a tumor operated on. It consists in rubbing the finger several times in succession across the suspected region, but not pressing so hard as to cause pain. Though previously neither the eye nor the palpating finger has discovered anything abnormal, this will often reveal small nodules in the skin. They appear as small whitish, papular elevations which turn red spontaneously or as the skin is stroked; sometimes they are of a deeper red, resembling urticarial spots. The redness continues for from five to ten minutes—sometimes even longer. Franke thinks this phenomenon is due to the fact that the cancer cells secrete a poison that has an irritating effect on the surrounding tissues—especially the blood vessels and the nerves. This irritation may be of the same nature as that noted at the border of a cancer and the healthy tissue, which manifests itself in the form of inflammatory changes in the connective tissue. Franke recommends that patients who have been operated on for cancer be requested to present themselves at definite short intervals, in order that they may be examined for this irritation phenomenon.

**Metatarsophalangeal Arthritis Deformans.**—Blencke reports some cases of an inflammatory process in the metatarsophalangeal joints, especially of the great toe, which he has observed recently in about twenty young girls. The inflammation was associated with deforming changes in the bone. He ascribes the condition to the wearing of low shoes with high heels. The almost perpendicular slope of the metatarsal bones resulting from high heels throws an abnormal weight on the heads of the metatarsal bones and on the first phalanx of the great toe, as he illustrates by a roentgenogram of a foot in a high-heeled shoe. Arthritis deformans of the first phalanx of the great toe may be due to such overweighting. A second roentgenogram illustrates one of the typical cases of deformative inflammation in a girl, aged 18. He discusses in connection with it Deutschländer's tumors of the metatarsus.

### Casopsis Lekaruv Ceskych, Prague

Dec. 16, 1922, 61, No. 50

- Treatment of Parkinsonian Syndromes with Large Doses of Sodium Cacodylate. K. Henner.—p. 1196. Cont'n.  
Treatment of Abortion. E. Haim and M. Zahradnik.—p. 1200.  
Psammoma of the Spinal Dura Mater. Niederle.—p. 1203.

### Acta Medica Scandinavica, Stockholm

Nov. 29, 1922, 57, No. 2-3

- \*Chlorin in Blood and Tissues. P. Iversen and H. Hansborg.—p. 95.  
Cancer in Ulcer and Ulcerated Cancer Simulating Round Ulcer. E. Dahl-Iversen.—p. 134.  
\*Red Corpuscles and Their Variations. E. J. Rud.—p. 142. Cont'n. No. 4.  
\*Slight Glycosurias. J. E. Holst.—p. 188.  
\*Polycythemia Rubra. H. Curschmann.—p. 228.  
\*Undernutrition and Endocrine Disturbances. H. Curschmann.—p. 240.  
Syringomyelia Simulating a Spinal Tumor. T. Stenholm.—p. 247.  
\*Seasonal Variation of Weight of the Tuberculous. Strandgaard.—p. 275.

**Distribution of Chlorin in Blood and Tissues After Injection of Sodium Chlorid.**—Iversen and Hansborg studied in rabbits the distribution of intravenous infusions of 10 per cent. salt solution. They found that the sodium chlorid is deposited in the tissues so rapidly that one circulation may be sufficient to reestablish the equilibrium of chlorin between the blood and tissues. About 8 per cent. of the injected amount remains in the blood, even after seventy minutes. In thyroidectomized animals, more salt is retained in the tissues after the infusion. In normal animals more salt is found in the blood after the injection than would correspond to its water content. In thyroidectomized animals the opposite is true. There were indications that the kidneys influence salt retention in the tissues. Ligature of one or both kidneys after the injection is followed by increased flow from the

tissues into the blood just as after injections of epinephrin or pituitary extract.

**Red Corpuscles and Their Variations.**—Rud surveys the literature and gives his findings in 69 adults and 49 children. Average errors were about 2 per cent. He found in male adults an average of 5,330,000 erythrocytes (maximum 5,900,000, minimum 4,370,000). In adult women the average was 4,830,000 (maximum 5,390,000; minimum 4,300,000). Old persons have slightly lower figures than the young. The newborn averaged 5,680,000 (maximum 6,590,000 and minimum 4,470,000); nurslings 5,110,000; children between 1 and 14 years, 4,360,000, without influence by sex.

**Slight Glycosuria.**—Holst describes seventeen cases of moderate glycosuria. Some are of the diabetic, some of the renal type, and seven cases are considered as being on the border line between them. The two latter groups are benign.

**Polycythemia Rubra.**—Curschmann describes two cases of a familial polycythemia rubra. The spleen was distinctly enlarged in the first case. The cases began in early childhood, and remained almost stationary. While pointing to an unquestionable constitutional factor, he does not admit the assumption of endocrine disturbances in the pathogenesis of the disease.

**Undernutrition and Endocrine Disturbances.**—Curschmann admits thyroid changes in edema from undernutrition, but emphasizes also the differences (especially in the concentration of serum) from hypothyroidism. Undernutrition seems to cause increased gastric hyperacidity in people who are inclined to it, while it may cause achylia in others. Diabetes as well as exophthalmic goiter occurred less frequently during the war. Therapeutic possibilities of undernutrition in exophthalmic goiter are discussed, although not yet recommended.

**Seasonal Variation in Weight of Tuberculous Patients.**—Strandgaard studied the variations in the average weekly gain of patients in five Danish sanatoriums. He found a remarkable coincidence of these changes in different sanatoriums, distinct when weeks were compared, and striking in the comparison of months. Atmospheric influences seem to be the cause. The maximum gain was in September. This was followed by a rapid decline in October and November.

### Hospitalstidende, Copenhagen

Jan. 3, 1923, 66, No. 1

- \*Antethoracal Esophagoplasty. Thorkild Rovsing.—p. 1.

**Antethoracal Esophagus.**—Rovsing has decided that there is no necessity for making the new esophagus from a segment of bowel or the stomach. These unnecessarily complicate the procedure, as a new esophagus answering every purpose can be made out of two long skin flaps turned back over a long large drainage tube. The flaps are sutured together with catgut on the median line, from neck to stomach. The skin beyond is loosened and drawn up to suture together over the whole. In the woman illustrated, Rovsing waited six weeks for the parts to heal before he united the upper stump of the esophagus to the new skin tube. Five different operations between Feb. 17 and Aug. 6, 1921, were required; then the patient was discharged in excellent condition. She eats with good appetite, has gained 26 pounds, and can be considered completely cured. Rovsing has applied the first two or three steps of the procedure in two other cases still under treatment. He severs the esophagus and brings the peripheral stump out through a minute incision beyond the sternocleidomastoid muscle. This does away with the pocket above the atresia in which food and secretions stagnate. Rovsing regards this as an essential improvement over other methods, all of which bury this stump.

### Hygiea, Stockholm

Dec. 31, 1922, 84, No. 24

- \*Obsessions and Their Treatment. P. Bjerre.—p. 1009.

**Obsessions and Their Treatment.**—Bjerre describes typical instances of inhibiting or impelling complexes, and discusses treatment. He says that psychoanalysis in these cases has to be conducted, like a mathematical problem, until the correct equation is found.



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## EPIDEMIOLOGIC SURVEY IN A CITIZEN'S MILITARY TRAINING CAMP

DIPHTHERIA CARRIERS AND SUSCEPTIBILITY;  
CARRIERS OF INTESTINAL DISEASES \*

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In the study and the control of communicable diseases, a problem of the greatest importance is presented by the carriers of infection, and especially those carriers not known to have come in contact with the sick. Surveys made in nonepidemic periods show that a surprisingly high percentage of the inhabitants of any community harbor in their bodies bacteria of disease-producing types. These persons are true reservoirs of infection, and constitute for infectious disease its main bulwark of defense. At present we have only meager and suggestive evidence concerning the proportion of noncontact carriers in the general population, and many questions, especially those connected with their relative duration and infectivity, remain unanswered. Nearly all of the surveys of which we have record have been made for specific purposes, usually during or subsequent to epidemic conditions. There is a good reason for this, since we possess no legal means by which we may enter any community and study the carrier rate among the healthy civilian population. The difficulties to be overcome before undertaking such a task, and indeed throughout its continuance, are generally sufficient to discourage those willing to perform the necessary work.

It would seem, therefore, that whenever a practical opportunity is offered to make a systematic epidemiologic study on even a fraction of the normal population, the carrying out of such a study becomes a duty that no conscientious epidemiologist would attempt to shirk.

According to the present policy of the government, young men from every community are given the privilege of a month's military training each summer at army camps located in the various corps areas. The young men attending these camps represent a great variety of home surroundings. It might at first be assumed that they would constitute a representative sample of the whole population at their age group, but this is not unqualifiedly the case. Intimate contact with them soon reveals the fact that they belong to the strong and healthy type of young man—both in body

and in mind—and the findings among them would represent something near the optimum conditions in their communities.

It is obvious, therefore, that the Citizens' Military Training Camps afford an opportunity to elicit facts of the greatest epidemiologic value, and without causing the individuals studied the slightest inconvenience. The scope and thoroughness of the investigations will depend chiefly on the training and number of the personnel available for carrying out the work. It is confidently believed that as the potential value to the army and to the country of this unique opportunity to study preventable disease is realized, ample facilities will be forthcoming. Scarcely secondary in importance is the opportunity to train reserve officers in the technic of extensive surveys, such as our laboratories were called on to make in the winters of 1917, 1918 and 1919.

Recognizing the valuable field thus offered, a beginning in such studies was made at Camp Meade this year. Plans were carefully laid beforehand so that the laboratory of the Third Corps Area, with the cooperation of several technicians from the Army Medical School, was ready to fit in the work projected without interference with the strictly military phases of the training period. The investigation included a search for virulent diphtheria bacilli in the throats of candidates presenting themselves for training, the application of the skin test for diphtheria susceptibility, and a study of the feces for ova of intestinal parasites and for members of the typhoid-paratyphoid-dysentery group of bacilli.

### DIPHTHERIA BACILLUS CARRIERS

During the "processing" of applicants presenting themselves for admission to the camp, throat cultures were made from all candidates, both those accepted and those rejected being included. By "processing" is meant the series of physical examinations to which every man was subjected in order to record, so far as possible, his exact physical condition. The selection of this particular time for taking the culture was the most favorable for the purpose, since the individuals concerned had been on the reservation less than an hour, and it was scarcely possible that any of them had picked up diphtheria bacilli from other students.

In taking the cultures, the usual technic was followed: Sterile cotton swabs were applied to the tonsillar region on both sides and swept over the pharynx; the swabs were immediately rubbed over the surface of Loeffler's blood serum mixture in tubes; these cultures were transferred to the laboratory, where they were incubated and examined microscopically the next day, after being stained with Loeffler's alkaline methylene blue. In making the examination, the opinion of no single individual was considered final. Each slide

\*From the Laboratory of the Third Corps Area, Camp Meade, Md., and the Laboratories of the Army Medical School, Washington, D. C.



thought to be positive was examined by two or three persons, and every culture containing bacilli even remotely resembling the diphtheria bacillus was retained for further examination. Naturally, an unusually large number of the cultures were retained by such selection; but in a survey such as this, there would have been too much chance of missing virulent diphtheria bacilli had we accepted as possibly virulent only forms identical in morphology with Wesbrook's A, C and D types.

Cultures were made from the throats of 1,080 persons. In eighty-three of these, forms were found which caused us to retain them. On reexamination, seventeen of these were dropped, thus reducing the number for further study to sixty-six. The subsequent study consisted merely of making subcultures on plates containing Loeffler's blood serum mixture and on blood agar, and attempting to isolate, from these, organisms of diphtheria bacillus morphology. All diphtheria bacillus-like organisms were tested for virulence by the injection of a saline suspension of one-half the twenty-four hour growth on coagulated blood serum mixture subcutaneously into two guinea-pigs. One of these guinea-pigs received approximately 500 units of diphtheria antitoxin intraperitoneally. On the death of an animal, careful necropsy was performed and characteristic subcutaneous edema with hemorrhagic suprarenals noted in every positive case. The sixty-six cultures noted above were injected in this way. The toxicity of each virulent culture was confirmed by at least two subsequent tests.

Of the sixty-six cultures tested for pathogenicity, nine were found to be virulent diphtheria bacilli. This means a carrier rate at this camp of 0.83 per cent. One other culture, not included, possessed some virulence; it killed two of the three guinea-pigs into which it was injected.

There was opportunity to make second cultures from two of the students found to be positive. The findings were confirmed in both cases; second cultures from both the nose and the throat of each man contained virulent bacilli. There were no clinical evidences of diphtheria, although both had large tonsils—one, very large. Both thought they had had diphtheria several years before, but were not certain. One was Schick negative; the other was positive. The positive reaction was a typical, clearly cut ++, the redness on the right arm occupying an area about 1½ inches by 1 inch; the left arm showed no reaction whatever.

The Schick tests were made on seven of the students found to be carrying virulent bacilli. Of these, three gave ++ reactions, two gave +—, and two gave — reactions (57 per cent. negative). In the literature we have seen no previous record of carriers giving positive Schick tests. Such findings would be looked for only in incubationary carriers, but these students gave no clinical indication of the disease during their four weeks at the camp. We have no satisfactory theory to account for such a combination, and hope that the opportunity may come to investigate it further.

*Diphtheria Carrier Work.*—The fact that we found nearly 1 per cent. of carriers of virulent diphtheria bacilli among healthy young men between the ages of 17 and 21 is not surprising. In one of the earliest (1894) surveys made in this country, Park and Beebe<sup>1</sup> found 2.4 per cent. They examined 330 healthy persons in New York City. None of these persons were

known to have been in contact with diphtheria; of the eight found positive, two later developed the disease. Pennington<sup>2</sup> found that 1.4 per cent. of well school-children examined by her in Philadelphia were harboring virulent organisms in their throats. Von Scholly and Wilcox<sup>3</sup> examined cultures from the throats of 1,000 noncontacts, and in 1.8 per cent. found virulent diphtheria bacilli; these were chiefly tenement house children in New York City, in two of which there was a possible history of exposure. In a more recent survey made in Detroit, Goldberger, Williams and Hachtel<sup>4</sup> found virulent bacilli in about 0.1 per cent. of 4,093 persons. These were unselected people not known to have been in contact with diphtheria.

These figures suggest work for future training camps, the results of which might be exceedingly illuminating. At Camp Meade it was possible to take cultures only once, and the time selected was that which would to the greatest extent eliminate the influence of camp conditions. Notwithstanding the fact that nearly 1 per cent. had diphtheria bacilli in their throats, no case of the disease developed. Does this mean that there was no transfer of virulent bacilli, or is there another explanation for the freedom from this disease of the 55 per cent. of Schick positive persons? The infectious agents were certainly not lacking, and according to our tests there was an ample amount of favorable soil. It would seem that the mechanism of defense of healthy mucous membranes is sufficient to prevent the production of the clinical disease, and that possibly another factor must be active since diphtheria has its highest incidence during those times of the year when common colds are most prevalent. It will be interesting at subsequent camps to make cultures a second time, or better at weekly intervals, in order to learn among other things whether or not the carriers are temporary or chronic, and to follow the distribution of virulent bacilli to the throats of other persons.

#### TESTS FOR SUSCEPTIBILITY TO DIPHTHERIA

The personnel available for the work was not sufficient to permit the injection of candidates at the time of "processing." It was therefore necessary to make the injection and subsequent examinations at times when those responsible for the military training would not be inconvenienced. For this reason, Schick tests could be made on only 833 persons.

*Technic of Injections.*—The Schick test material prepared by the laboratories of the New York City health board was diluted immediately before proceeding to the building where the injections were to be made. The toxin, contained in capillary tubes, was forced into sterile saline solution, the tubes being rinsed several times. Duplicate dilutions were made with the same lot of toxin and heated in a water bath at 75 C. for five minutes. The amount of the diluted toxin injected was 0.2 c.c. and, according to the directions accompanying the packages, this represented one-fiftieth minimal lethal dose for a 250 gram guinea-pig. The syringes used for the injections were of the all-glass, tuberculin type. In preparation for the injection, the flexor surface of the forearm just below the bend of the elbow was rubbed with gauze saturated with a mixture of

2. Pennington, Mary E.: The Virulence of Diphtheria Organisms in the Throats of Well School Children and Diphtheria Convalescents, *J. Infect. Dis.* 4: 36-50, 1907.

3. Von Scholly, Anna I., and Wilcox, Harriet L.: A Contribution to the Statistics on the Presence of Diphtheria Bacilli in Apparently Normal Throats, *J. Infect. Dis.* 4: 337-346, 1907.

4. Goldberger, Williams and Hachtel: Report of an Investigation of Diphtheria Carriers, *Bull. 101, Hyg. Lab., U. S. P. H. S., 1915*, pp. 29-41.

1. Park and Beebe: Diphtheria and Pseudo-Diphtheria, *M. Rec.* 46: 387-401, 1894.



equal parts of acetone and alcohol. The injections were made into the layers of the skin, a distinct bleb being produced in every case. Readings were made two days and seven days after the injections. The results were recorded as suggested by McGuire, Linthicum, Schirch and Nourse:<sup>5</sup>

**Recording Results:** The method of reading was that followed by Park and his co-workers. For the sake of brevity and convenience in entering results, we adopted the following symbols: ++, positive reactions; +, positive-combined reaction; +—, pseudonegative reaction; —, negative reaction.

The literature describes fully the positive, pseudonegative and negative reactions, but gives little concerning the positive-combined reaction, first noted by Park. This reaction consists of a pseudoreaction on the control side, with a positive reaction superimposed on a pseudoreaction on the test side. Some difficulty is encountered in distinguishing these two reactions at forty-eight hours, but with a little experience they may be easily differentiated at a later reading. The positive and positive-combined reactions indicate susceptibility, while the pseudonegative and negative reactions indicate immunity to diphtheria.

It is to be remembered that these symbols denote merely the type of reaction and do not indicate its severity; for instance, ++ does not mean a reaction approximately double the intensity of that of +, but that in the former case the reaction was not complicated by a pseudo-element, while in the latter a positive reaction was superimposed upon a pseudo-reaction. Thus, ++ and + indicate absence of antitoxic immunity, while +— and — indicate the presence of antitoxic immunity. Table 1 gives a summary of the results of the tests according to organization.

TABLE 1.—RESULTS OF SCHICK TESTS IN THE VARIOUS ORGANIZATIONS

Organizations	Reactions				Susceptible		Immune		
	++	+	+—	—	No.	%	No.	%	Total
Co. A, Inf. ....	32	8	17	19	40	53	36	47	76
Co. B, Inf. ....	29	14	22	20	43	50	42	50	85
Co. C, Inf. ....	29	9	12	29	38	48	41	52	79
Co. D, Inf. ....	36	12	13	28	48	54	41	46	89
Co. E, Inf. ....	8	3	6	7	11	46	13	54	24
Co. F, Inf. ....	39	10	5	28	49	59	33	41	82
Co. G, Inf. ....	21	6	7	14	27	56	21	44	48
Co. H, Inf. ....	48	13	4	39	61	59	43	41	104
Troop B, Cav. ....	15	3	7	7	18	56	14	44	32
Bat. A, Art. ....	30	9	4	16	39	68	20	32	59
Bat. B, Art. ....	20	7	2	14	27	66	16	34	43
Bat. C, Art. ....	31	5	4	19	36	61	23	39	59
Med. Co. No. 1. ....	13	3	1	36	16	30	37	70	53
Totals. ....	351	102	104	276	453	55	380	45	833

The high percentage of susceptibles found in this series—55 per cent.—is surprising. According to the findings of others, the percentage of susceptible persons between the ages of 17 and 21 should not have been above 20 to 30 per cent. It will be noted that Medical Company No. 1 actually did show 30 per cent. susceptible. For the marked difference, we have not been able to find an explanation. The injections were made simultaneously with those of other companies and although the men were living in separate barracks, surrounding conditions and type of work were not sufficiently different to influence the results.

We have carefully reviewed our work in an attempt to learn whether or not the high percentage of positive results obtained might be due to a fault of some kind. We believe that proper technic was used and that the reactions were in practically every case so cleanly cut

that there could be no discussion with regard to the results; sometimes two, usually three persons read the reactions together. The strength of the toxin used was questioned. If possibly there had been in the capillary tubes a much larger amount of toxin, or if that present had been especially high in potency, the dose injected might have been not one-fiftieth minimal lethal dose, but one-thirtieth or even one-twentieth. In order to eliminate such a possibility, duplicate sample packages were submitted to the Hygienic Laboratory of the U. S. Public Health Service for test, and it was reported by Dr. McCoy that instead of being too strong, the product was approximately 15 per cent. low in potency.

We are therefore inclined to believe that, of the young men tested, 55 per cent. possessed no immunity to diphtheria detectable by the Schick test.

In view of the statements frequently made that persons in large cities are more likely to be immune to diphtheria than those from country districts, we thought it would be interesting to analyze our results on the basis of their residence, with regard both to the state and to the size of the community in which they lived; the analysis was extended to include age groups. The results of this analysis are shown in Table 2.

This is the well-known dichotomous chart, and gives all the information needed, we believe, for a thorough analysis of the results. From left to right the totals for each of the states from which the personnel at Camp Meade was derived are divided according to the size of the community, rural being less than 2,500. A rural community is generally considered to be one in which such sanitary arrangements as sewage disposal and controlled water supply are lacking. Communities between 2,500 and 10,000 are likely still to be of the rural type from the standpoint of sanitation. Those above 10,000 are frequently as well equipped as are cities of 100,000 and over.

At the bottom are shown the totals for the communities of these sizes. In the columns, the results are grouped according to ages. A very few boys less than 17 years of age found their way into the camp, but the proportion is insignificant. In the 20 and more group, about 10 per cent. were above 20 years of age. These were spread over so many different ages, however, that it was not thought worth while to make special note of them. The number of individuals showing reactions of the various types are recorded, as well as are the total number of positives, that is, those showing ++ and + reactions, and the total number of negatives—those showing +— and — reactions, together with the percentages of those susceptible and those immune in each group.

At the right are given the totals for all ages analyzed with regard to types of reaction, and numbers and percentages of those susceptible and those immune.

At the lower right hand corner are the grand totals, the bottom line showing, as is noted in Table 1, that 55 per cent. were susceptible and 45 per cent. immune as indicated by the Schick test.

The figures in most instances are so low that the differences have no conclusive significance. The total number here is less than that in Table 1 for the reason that in every instance in which complete data were unavailable, the individual concerned was dropped. Although the figures are small, it is impossible not to call attention to the differences in susceptibility of persons living in rural Pennsylvania and those living in rural Virginia, the proportion of those immune in Virginia being constantly much higher than in Pennsyl-

5. McGuire, P. F.; Linthicum, E. S.; Schirch, G. J., and Nourse, J. D.: The Control and Prevention of Diphtheria in the U. S. Army Mil. Surgeon 50: 525-533 (May) 1922.



vania. This fact is made still more interesting on examining the diphtheria rates in the two states, since it is found that the mortality rates in Pennsylvania have throughout the census period been higher than those in Virginia. The average temperature of Virginia is higher than that of Pennsylvania, which would suggest a reason for less diphtheria in Virginia; but it would not explain the great difference in the percentage of susceptible persons in the rural communities of the two states.

The form of Table 2 permits the recording of so much information in a small space that it is hoped

no military importance. The results of this survey indicate that it is potentially a serious menace and one still far from final eradication.

EXAMINATION OF FECES FOR OVA OF THE  
INTESTINAL PARASITES

It was believed that information of interest might be revealed through a search for evidences of intestinal infestation in the particular group of men at this camp. The states represented, with the exception of Virginia, are just north of the region in which the hookworm is prevalent. In making the survey with the primary

TABLE 2.—RESIDENCE WITH REGARD TO STATE AND SIZE OF COMMUNITY, AGE GROUPS, TYPES OF REACTIONS AND PERCENTAGES OF SUSCEPTIBLE AND NONSUSCEPTIBLE PERSONS

Size of Community	Age Groups																							
	17 and Less								18								19							
	Reac-tions				Suscep-tible				Reac-tions				Suscep-tible				Reac-tions				Suscep-tible			
	++	+	+-	-	No.	%	No.	%	++	+	+-	-	No.	%	No.	%	++	+	+-	-	No.	%	No.	%
Pennsylvania																								
Rural.....	24	2	2	4	26	81	6	19	13	1	2	5	14	87	7	33	6	1	4	5	7	44	9	56
2,500+.....	19	7	7	13	26	56	20	44	24	2	7	17	26	52	24	43	8	4	3	9	12	50	12	50
10,000+.....	16	7	5	10	23	61	15	39	18	6	3	9	24	67	12	33	4	6	3	8	10	48	11	52
100,000+....	16	..	5	7	16	57	12	43	10	5	3	18	15	42	21	53	3	2	4	6	5	33	10	67
Total....	75	16	19	34	91	63	53	37	65	14	15	49	79	55	64	45	21	13	14	28	34	45	42	55
Maryland																								
Rural.....	6	1	2	2	7	63	4	37	5	1	1	1	6	75	2	25	3	..	..	1	3	75	1	25
2,500+.....	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	1	..	..	..
10,000+.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
100,000+....	10	..	..	5	10	67	5	33	1	2	..	11	3	27	11	73	3	..	1	3	3	43	4	57
Total....	16	1	2	7	17	65	9	35	6	3	2	13	9	38	15	62	8	..	1	4	8	62	5	38
Dist. Columbia																								
100,000+....	6	4	2	6	10	55	8	45	8	4	1	1	12	86	2	14	3	..	2	4	3	33	6	67
Virginia.....																								
Rural.....	4	7	3	12	11	42	15	58	9	2	5	8	11	46	13	54	9	1	1	1	10	84	2	16
2,500+.....	1	1	2	4	2	25	6	75	5	3	1	2	8	73	3	27	..	..	1	..	..	..	1	..
10,000+.....	..	..	1	1	..	..	2	..	..	..	..	2	2	50	2	50	..	..	..	..	..	..	..	..
100,000+....	..	2	..	1	2	67	1	33	..	..	..	1	..	..	1	..	1	1	..	1	2	67	1	33
Total....	5	10	6	18	15	38	24	62	16	5	6	13	21	53	19	47	10	2	2	2	12	75	4	25
Totals																								
Rural.....	34	10	7	18	44	69	25	31	27	4	8	14	31	59	22	41	18	2	5	7	20	63	12	37
2,500+.....	20	8	9	17	28	52	26	48	29	5	8	20	34	55	28	45	9	4	4	9	13	50	13	50
10,000+.....	16	7	6	11	23	58	17	42	20	6	4	11	26	63	15	37	5	6	3	8	11	50	11	50
100,000+....	32	6	7	19	38	59	26	41	19	11	4	31	30	46	35	54	10	3	7	14	13	38	21	62
Total....	102	31	29	65	133	59	94	41	95	26	24	76	121	55	100	45	42	15	19	38	57	50	57	50

SUMMARY																	
Size of Community	Reactions				Susceptible		Immune		Size of Community	Reactions				Susceptible		Immune	
	++	+	+-	-	No.	%	No.	%		++	+	+-	-	No.	%	No.	%
Pennsylvania									Virginia								
Rural.....	58	5	9	15	63	72	24	18	Rural.....	26	12	11	28	38	49	39	51
2,500+.....	63	15	19	50	78	53	69	47	2,500+.....	9	4	5	10	13	46	15	54
10,000+.....	47	23	19	34	70	57	53	43	10,000+.....	2	1	2	4	3	33	6	67
100,000+.....	40	10	13	38	50	50	51	50	100,000+.....	1	3	..	6	4	40	6	60
Total.....	208	53	60	137	261	56	197	44	Total.....	38	20	18	48	58	47	66	53
Maryland									Totals								
Rural.....	18	2	4	6	20	67	10	33	Rural.....	102	19	24	49	121	62	73	38
2,500+.....	1	..	..	1	1	50	1	50	2,500+.....	73	19	24	61	92	52	85	48
10,000+.....	1	..	1	2	1	25	3	75	10,000+.....	50	24	22	40	74	54	62	46
100,000+.....	17	5	1	27	22	44	28	56	100,000+.....	79	28	20	84	107	51	104	49
Total.....	37	7	6	36	44	51	42	49	Total.....	304	90	90	234	394	55	324	45
Dist. of Columbia																	
100,000+.....	21	10	6	13	31	61	19	39									

such studies made in the future will be analyzed in an identical manner in order that the results from year to year may be added, and figures finally obtained which will have definite significance. It is realized that in comparing rural Virginia with rural Pennsylvania on the basis of the figures we have so far, it is not possible to do more than call attention to a point to be borne in mind in future studies.

With regard to the susceptibility of persons from rural districts as compared with those from cities, it is seen that a greater proportion of the city boys were immune.

There is sometimes apparent an inclination on the part of some persons to consider diphtheria a disease of

object of ascertaining the number of carriers of hookworm ova, the finding of other parasites was likewise noted.

The technic used was that attributed to Barber.<sup>6</sup> Specimens were collected in new, clean homeopathic vials which were labeled and brought to the laboratory. Here about 5 gm. of the feces was thoroughly mixed with about 15 c.c. of saturated sodium chlorid solution containing 10 per cent. of glycerin. This mixture was allowed to stand generally from fifteen minutes to about two hours, when about 0.5 c.c. of the upper layer was transferred to a microscope slide on which had been

6. Medical War Manual No. 6, Laboratory Methods of the U. S. Army, Ed. 2, Philadelphia, 1919, p. 49.



made a large, heavy ring with a wax pencil. With the low power of the microscope, every part of the drop was examined thoroughly, a mechanical stage being used.

Specimens from 750 persons were studied. The ova found were: *Taenia solium*, 1; *Ascaris lumbricoides*, 5; *Trichuris trichiura*, 2; *Oxyuris vermicularis*, 1; hookworm, 1; total, 10, or 1.33 per cent. The single hookworm carrier was from rural Virginia. The person whose feces contained eggs of *Taenia solium* was brought to the hospital and treated. A large part of the tapeworm was recovered, but it was unfortunately thrown out before examination could be made. The chief point of interest at the outset, as already noted, was to learn how many hookworm carriers there might be among young men coming from what might be considered the border states. The finding of but one from a rural community in Virginia would be surprising were it not for the fact that the type of young man found in a military training camp is usually above the average for the community.

In such surveys it is customary to note the percentage of those who have lived in the tropics or who have had service overseas. A few of the students at Camp Meade had been in the army during the war, but their percentage was insignificant.

While numerous surveys have been made for the identification of persons harboring intestinal parasites, the only one with which we are acquainted in any way comparable with the study made by us is that of Kofoed.<sup>7</sup> In the survey reported by him, the findings among 126,140 men are given. These were men "who entered the army from the hookworm area, or had resided there for six months or more, or who had formerly lived in that area but emigrated to other states of the Union. . . . The data, therefore, are fairly representative of the normal population of males of military age only for states of the hookworm area and only those males of military age who in other states might have acquired the infection by reason of Southern residence."

The results reported by Kofoed among men born in the states from which those at Camp Meade were drawn are given in Table 3.

TABLE 3.—RESULTS REPORTED BY KOFOED

State of Birth	Positive		Number of Men Examined
	Per Cent.	Number	
Pennsylvania.....	0.3	4	1,074
Maryland.....	2.1	12	584
Distriet of Columbia.....	1.6	2	121
Virginia.....	6.7	65	969

These results show a much higher infestation rate among men from the same localities. We cannot believe that differences in technic are responsible for the low rate found by us at Camp Meade. If it seemed necessary to account for our relatively low figures, we should probably call attention again to the superior type of the persons making up our group.

#### SEARCH FOR CARRIERS OF MEMBERS OF THE TYPHOID-PARATYPHOID-DYSENTERY GROUP

As soon as possible after the receipt of specimens of feces at the laboratory, a suspension was made in saline solution and a drop of this was streaked over the surface of culture mediums in two plates. One

plate contained Endo medium, the other, lactose-litmus agar. In about half the cases these cultures were made within one hour after the collection of the specimens; in the other half, the delay was from one to five hours, so that dysentery bacilli of the Shiga type, if present, might have been lost.

The cultures were incubated at 37 C. over night and then examined in a good light, careful search being made for nonlactose fermenting colonies. The plates were then returned to the incubator, where they were kept for a second twenty-four hours and reexamined. Colonies which showed no evidence of acid formation were studied closely, and if they bore any resemblance to the organisms in question they were fished to a section of a lactose-litmus agar plate. About eight different colonies could be transplanted conveniently to a single plate. The use of a Petri dish, in this way, for the primary fishings, saves culture medium and infinite labor. The plates thus inoculated were incubated over night, and nonlactose fermenting colonies which were possibly gram-negative asporogenic bacilli were stained, fished to Russell double sugar agar, and studied further.

The few cultures deemed worthy of final identification were sent to the Army Medical School in Washington, where they were studied by Captain H. A. Davis, Medical Administrative Corps. He reported:

B 644 is a gelatin liquefier and is probably a member of the proteus group.

F 2 is an intestinal organism not fermenting lactose, and according to the classification of Graham-Smith would be placed in Group I, Subgroup d.

F 5 is of the same class and falls in Group H, Subgroup h.

I 44 is *Bacterium alkaligenes*.

39 is placed in the intestinal group as of Group H, Subgroup d.

78 is placed in the intestinal group as Group K, Subgroup b.

The result of this work is therefore that no member of the typhoid-paratyphoid-dysentery group of bacteria was isolated and identified from any of the specimens studied. It is in conformity with these findings that during the training period no clinical case of intestinal infection was reported.

#### SUMMARY

During the August training period at the Citizens' Military Training Camp at Camp Meade, Md., in 1922, a beginning was made to take advantage of the unusual opportunities for epidemiologic surveys thus afforded.

Cultures were made from the throats of 1,080 students, and these were studied for the presence of virulent diphtheria bacilli. In 0.83 per cent. of the cultures virulent diphtheria bacilli were found, indicating that nearly 1 per cent. of the young men coming to the camp carried virulent diphtheria bacilli in their throats.

The Schick test for susceptibility to diphtheria was made on 833 of the students, with the result that 55 per cent. of them reacted positively, indicating the absence of antitoxic immunity. In spite of this high rate of susceptibility and the number of persons in close association with them carrying diphtheria bacilli in their throats, no clinical diphtheria developed during the training period. Among seven of those found to be carrying virulent diphtheria bacilli, three gave positive Schick tests; the others were immune.

A study of specimens of feces from 750 of the students revealed parasites in ten, or 1.3 per cent. One of these, a young man from rural Virginia, was found to be a carrier of the hookworm.

7. Kofoed: The Geographical Distribution of Hookworm Infection in the United States, Detected in Army Recruits, Am. J. Trop. Med. 2: 389-396, 1922.



The same 750 specimens of feces were studied culturally for the presence of members of the typhoid-paratyphoid-dysentery group of bacilli, but no evidence of a carrier of a member of this group was discovered.

#### CONCLUSIONS

In concluding the report of this work,\* we express the hope that each year increased facilities may be given the Medical Department for carrying out surveys such as are indicated herein and for such extensions of the work as will be indicated from time to time. We believe that in no other way can the army better serve the public health; and building up the health of the nation is as much a measure of national defense as is drilling and target practice, on the one hand, or the production of gases and high power arms, on the other.

This plea can be supported in no better way than by quoting from the recent work by Nichols:<sup>8</sup>

On the technical side, carrier work in the military services is of course the same as elsewhere, as the putting of a uniform on the host does not affect the parasite. There are, however, several special factors in epidemiology and administration among soldiers which do affect the work in a peculiar way. Personal contact is much closer and more constant among troops in barracks or in the field than among private citizens. Hence, the chances for the functioning of carriers are particularly good. On the other hand, diagnostic and control measures, when approved, can be carried out more exactly on account of military discipline. Again, the high standard of laboratory facilities which has been maintained in the United States Army since the days of Sternberg tends to make carrier work easier than in some other places. It may, therefore, be said that conditions in the Army, and the same is true of the Navy, offer unusual need and opportunity for carrier work. The drawbacks are lack of time for proper examination, lack of facilities for the mass of work, and lack of control due either to an emergency or to official non-support. . . .

During the war, carrier work eventually reached a high state of technical perfection, as so many well trained medical officers and assistants were available. The degree to which the carrier program was actually used to control the situation varied with the circumstances. Now that the military establishments are contracted to a peace basis, this work has necessarily become limited. But since the work of the military organizations is now largely educational in connection with National Guard and the Reserves, the principles learned should not be forgotten. This new knowledge should be applied on as large a scale as possible, as a measure of education and preparation.

8. Nichols, H. J.: Carriers in Infectious Diseases (with a Chapter on Carriers in Veterinary Medicine by R. A. Kelser), Baltimore, 1922.

**The Conduct of an Individual.**—Human behavior is the outcome of an infinite complexity of interacting factors. The conduct of an individual could only be completely intelligible if we possessed a full knowledge of his inherited tendencies, his instinctive and emotional equipment, his intellectual capacities, and his general physical condition. In addition to this information, we should also have to obtain a detailed life history of the individual in order to understand the various habits and inhibitions which had been built up on the foundations of his physical, intellectual and emotional endowments. The most difficult subject which we should have to study in our search for an understanding of human behavior is probably that of the instinctive and emotional life, yet in the final analysis we should undoubtedly find that these factors outweighed all others in the causation of the conduct of an individual, so that we should be well repaid for our effort. There is no other single factor which has so much influence on the development of the personality as the parental environment—Abnormal Behavior, Sands and Blanchard, Moffat, Yard and Company, 1923.

## STUDY OF ISO-AGGLUTININS BEFORE AND AFTER ETHER ANESTHESIA \*

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According to Levine and Segall,<sup>1</sup> prolonged etherization may cause a temporary change in the iso-agglutinative phenomena. The authors report three cases in which the serum before anesthesia was compatible, by direct tests with the blood of prospective donors, but after a period of ether anesthesia of the patient, agglutinated the corpuscles when tested against the same blood. The change in agglutination was only temporary, but the observation, which should be extended, suggests that ether, being a lipoid solvent, may change the state of the blood in such a way as to modify the action of the iso-agglutinins present.

The observations of these investigators interested us greatly, as we had never observed untoward results from transfusions following ether anesthesia, when the bloods were matched before the operation. The studies reported in this paper were begun in an attempt to determine whether there was a change in the iso-agglutinative phenomena, and, if so, why we did not obtain noticeable effects on patients on whom transfusion was performed after prolonged ether anesthesia.

#### METHODS

Twenty-five patients about to undergo operation were selected for study. Cross-agglutination tests were performed on each of these patients, as follows: The serum of each patient was mixed in hanging drop preparations with fresh, washed red blood cells of Groups I, II, III and IV (Moss).<sup>2</sup> The washed red cells of the patients were mixed with the fresh serums of Groups I, II, III and IV. The serum and cells were obtained from the patients (1) before ether anesthesia; (2) immediately after operation, or before the patient recovered from anesthesia; (3) one hour after operation; (4) two hours after operation; (5) three hours after operation, and (6) twenty-four hours after operation. The microscopic tests were made in duplicate, as follows: A drop of each serum plus a drop of 1 per cent. suspension of the washed cells in isotonic salt solution was mixed on a cover slip, which was then inverted over a hollow ground slide. All red cells were washed three times with physiologic sodium chlorid solution. The slides were examined immediately to determine whether the preparations were satisfactory, again after one hour in the incubator at 37 C., and finally after twenty-four hours at 20 C.

The methods of examination of the blood as shown in Table 1 were used in the twenty-five cases studied.

Parallel series of tests were carried out in each case to determine the effect of ether in vitro. The serum of each of the Groups I, II, III and IV was tested against red blood cells of Groups I, II, III and IV.

\* From the Biological Division of the Medical Clinic, the Johns Hopkins Hospital.

\* Owing to its large size, Table 2 is omitted from the article as published here. It will appear in the authors' reprints.

1. Levine, E. C., and Segall, H. N.: Posttransfusion Reactions; Alterations in Blood After Ether Anesthesia and After Blood Transfusion, Surg., Gynec. & Obst. 35: 313 (Sept.) 1922.

2. Moss's classification is used for the reason that one is unable to distinguish in Jansky's descriptions Group II from Group III. A free discussion of this point by C. G. Guthrie and J. G. Huck will appear in the Johns Hopkins Bulletin, February, March and April, 1923, "On the Existence of More Than Four Iso-Agglutinin Groups in Human Blood."



The serums were shaken for one hour with ether. The ether was left in contact with the serums for four hours in the incubator at 37 C. After this time the serums were again tested against red blood cells (1 per cent. suspension) of each Group I, II, III and IV, and again four hours later.

TABLE 1.—FINDINGS IN CASE 1\*

Time	Color of Patient's Serum	Patient's Serum			Patient's R. B. C. 1% Susp.			Group
		Known R. B. C. 1% Susp. Group	Reading After 1 Hr.; 37 C.	Reading After 24 Hr.; 20 C.	Known Serums Group	Reading After 1 Hr.; 37 C.	Reading After 24 Hr.; 20 C.	
Before operation	Yellow, clear	I	+	+	I	0	0	IV
		II	+	+	II	0	0	
		III	+	+	III	0	0	
		IV	0	0	IV	0	0	
Immediately after operation	Pink, clear	I	+	+	I	0	0	IV
		II	+	+	II	0	0	
		III	+	+	III	0	0	
		IV	0	0	IV	0	0	
One hour after operation	Yellow, clear	I	+	+	I	0	0	IV
		II	+	+	II	0	0	
		III	+	+	III	0	0	
		IV	0	0	IV	0	0	
Two hours after operation	Yellow, clear	I	+	+	I	0	0	IV
		II	+	+	II	0	0	
		III	+	+	III	0	0	
		IV	0	0	IV	0	0	
Three hours after operation	Yellow, clear	I	+	+	I	0	0	IV
		II	+	+	II	0	0	
		III	+	+	III	0	0	
		IV	0	0	IV	0	0	
Twenty-four hours after operation	Yellow, clear	I	+	+	I	0	0	IV
		II	+	+	II	0	0	
		III	+	+	III	0	0	
		IV	0	0	IV	0	0	

\* Pyloroplasty; ether anesthesia; duration, two and one-half hours; +, agglutination; 0, no agglutination.

RESULTS

The findings in this series of twenty-five cases are decisive. In this series, in Table 2 are collected two patients of Group I, nine of Group II, four of Group III and ten of Group IV. In five cases the patients were started with gas followed by ether, and twenty-five patients had ether throughout. The duration of the period of anesthesia varied from one to four hours. In all cases the serum was found to have a pinkish

TABLE 3.—EFFECT OF ETHER

Group I Serum			Group II Serum			Group III Serum			Group IV Serum		
Known ing R.B.C. after 1% Susp. Group	Read- ing after 1 Hr.; 37 C.	Read- ing after 24 Hr.; 20 C.	Known ing R.B.C. after 1% Susp. Group	Read- ing after 1 Hr.; 37 C.	Read- ing after 24 Hr.; 20 C.	Known ing R.B.C. after 1% Susp. Group	Read- ing after 1 Hr.; 37 C.	Read- ing after 24 Hr.; 20 C.	Known ing R.B.C. after 1% Susp. Group	Read- ing after 1 Hr.; 37 C.	Read- ing after 24 Hr.; 20 C.
I	0	0	I	+	+	I	+	+	I	+	+
II	0	0	II	0	0	II	+	+	II	+	+
III	0	0	III	+	+	III	0	0	III	+	+
IV	0	0	IV	0	0	IV	0	0	IV	0	0
Shaken with Ether			Shaken with Ether			Shaken with Ether			Shaken with Ether		
I	0	0	I	+	+	I	+	+	I	+	+
II	0	0	II	0	0	II	0	0	II	+	+
III	0	0	III	+	+	III	0	0	III	+	+
IV	0	0	IV	0	0	IV	0	0	IV	0	0
In Contact with Ether 4 Hours			In Contact with Ether 4 Hours			In Contact with Ether 4 Hours			In Contact with Ether 4 Hours		
I	0	0	I	+	+	I	+	+	I	+	+
II	0	0	II	0	0	II	+	+	II	+	+
III	0	0	III	+	+	III	0	0	III	+	+
IV	0	0	IV	0	0	IV	0	0	IV	0	0

tinge when collected immediately after operation, but at all other times it was a clear yellow. The ages of the patients varied from 16 to 65 years.

In no case examined did the blood groups change in any degree after ether anesthesia. As in Case 1, the blood group was determined to be IV by cross-agglutination with all four groups before operation. Imme-

diately after operation, the blood group was determined to be IV; one hour after operation, the grouping was IV; two hours after operation, IV; three hours after operation, IV; and twenty-four hours after operation, the blood group was determined to be IV. The findings were the same throughout all cases examined, regardless of the group in which the patient's blood was placed. No change in group resulted from the effect of ether in vitro (Table 3).

COMMENT

In none of our cases was the shift described by Levine and Segall observed. All the reactions remained definite in each instance. One hour's shaking with ether, and four hours in contact at 37 C., failed to produce any shifting of the blood in any of the twenty-five cases. Only one of the findings of Levine and Segall was corroborated in this series; viz., the serums of the patients had acquired after ether anesthesia a pinkish hue.

CONCLUSIONS

1. There is no change in the blood groups after ether anesthesia.
2. No change of iso-agglutinative phenomena was produced by shaking with ether for one hour, or four hours' contact at 37 C.
3. Transfusions can be performed safely within twenty-four hours after prolonged ether anesthesia, provided a suitable donor has been found previous to the beginning of anesthesia.
4. If severe reactions occur from transfusions after ether anesthesia, they are apparently due to some other cause and not to a change in iso-agglutinative phenomena.

CHRONIC INFECTIOUS ARTHRITIS\*

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Modern notions concerning the influence of focal infections on the production of rheumatism may be responsible for a certain sense of security and of satisfaction with regard to the etiology and classification of this disease. Nevertheless, the subject of chronic infectious arthritis offers great difficulties from the standpoint of both clinical and experimental investigation.

The present study was undertaken for the purpose of inquiring into the classification of chronic infectious arthritis, the validity of the idea of focal infection as a cause, and the results of the usual nonspecific "shock" therapy.

It was thought that the investigation of a large number of records in a hospital such as Barnes Hospital might result in finding the answers to these questions, or in finding the refutation of certain notions usually accepted as accurate. Various attempts have been made to classify arthritis, but most classifications are unsatisfactory because the great majority of cases of chronic arthritis have been without proved etiology; therefore, classifications have been based on anatomic and symptomatic changes.

It might be convenient to separate the proved bacterial cases from those which, while possibly infectious in origin, have so far eluded our efforts to discover the invading organisms. Thus, we can easily understand those metastatic inflammations of the joints in which the exudate shows either staphylococci, pneumococci,

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hemolytic streptococci or gonococci, and then the great group of acute rheumatic fever cases stand out in relief by virtue of their characteristic clinical performance and the invariability of heart disease. With the great remainder, our efforts must be directed first to finding important points of difference which would suggest a classification, and to testing various forms of treatment, and, from the information thus gathered, to carry on our efforts in the experimental laboratory with the hope that with such diseases reproduced either entirely or in some of their main features, logical conclusions might follow.

The cases here reported were designated chronic infectious arthritis. It has been the habit at Barnes Hospital to exclude the proved bacterial cases from this classification, but it has also been the habit to designate the disease acute rheumatic fever as acute infectious arthritis without regard to its claim to distinct individuality.

It was my desire to study all the cases from the beginning of Barnes Hospital to the present. There are about 400 cases listed under the heading of chronic infectious arthritis, but the nature of the investigation demands so much of critical review of histories, of interpretation and of inferential conclusions, where justified, that the process of study turned out to be very laborious; therefore, slightly more than a hundred cases are ready for consideration.

As already stated, none of these studied cases gave positive bacteriologic findings as far as the joints were concerned. When the source of infection was proved, the proof was from clinical evidence and serologic tests.

#### METHOD

Each history was examined for information concerning the sex, age, duration of disease, occupation, family history, clinical course, physical examination, type of rheumatism present, treatment and outcome.

Most of the histories examined were written since 1913, but a few are included of patients who entered the hospital before Billings had popularized the idea of focal infection. It was interesting to note the difference in clinical attitude before and after the work of Billings. In the earlier histories, the examinations were meager; there was an evident lack of knowledge of attacking the problem, and this was invariably reflected in the word "unimproved" at the end of the history. After 1912 there was to be seen a sudden increase in the diagnostic activity devoted to the exploration of all localities which might harbor infection. Treatment was likewise more energetic, and the word "improved" began to appear more frequently. Then, as this energetic diagnostic effort and diversified treatment with bakes, vaccines, proteose and typhoid vaccine inoculations were carried on over a number of years, an element of doubt about the reality of the improvement became apparent. Indeed, not only have physicians passed through these changes of sentiment, but the patients themselves have often overestimated the relief which followed a given treatment, only to recognize later the fleeting character of the relief.

It is useful to study a series of cases of this kind because it reveals how important the doctrine of focal infection has been in stimulating physicians to search for and removed sources of infection wherever they might be in the body. Such a study also reveals the types of cases in which therapeutic failures occurred, and emphasizes the need of more penetrating research into the cause of disease in such cases. It emphasizes to no less a degree the successes that have occurred,

and indicates the percentage of patients who have been benefited by sheer thoroughness in diagnosis and enthusiasm in treatment.

#### RESULTS

Twenty-four cases were chronic cases of arthritis which began as acute rheumatic fever. In nearly all instances the chronicity was dependent on neglect or inadequate treatment. All cases responded readily to salicylates, and the patients left the hospital "recovered," as far as arthritis was concerned. These cases can be readily separated from other types of rheumatism by this ability to recover and by the invariable coincidence of a heart disease, usually mitral stenosis. The statement that acute rheumatic fever is heart disease is strikingly illustrated in this group. The joint changes are trivial, and, although attended by intense inflammation, the arthritis is not permanent. This is a disease of early life, differing sharply in this feature from arthritis deformans. It occurs in attacks. Tonsillitis and pharyngitis usually precede its onset, and there is usually another case in the family.

One of the cases of chronic arthritis which began as acute rheumatic fever is interesting as suggesting a basis for certain joint symptoms and changes which will be commented on later:

A girl, aged 14, became ill in the usual way with pharyngitis, acute rheumatic fever, mitral disease and acute pericarditis, which persisted as chronic adhesive pericarditis. Such cardiac embarrassment obviously hindered both her muscular development and her general nutrition. We might call to mind, in passing, the peripheral joint changes associated with poor ventilation in the lungs and called pulmonary osteoarthropathy. The patient began to have joint pains and stiffness several years after the onset of pericarditis. This pain and the stiffness were progressive, and when the patient returned to Barnes Hospital she was the picture of under-nutrition and discomfort. She had no true arthritis, yet most of the small joints were stiff and painful.

The bone change was simple atrophy. Might it not be possible that inadequate circulation secondary to cardiac inadequacy is responsible for this atrophy? We are familiar with the pain that attends obliterating arterial disease; the joint pain suffered in this case, for which there is no explanation in the roentgenograms, may be based on circulatory deficiency.

In this connection, two cases in the series are worthy of attention: A man, aged 56, had had attacks of acute arthritis for eighteen years, usually involving knee or ankle. A man, aged, 47, had had similar attacks for twelve years. Both had purulent prostatitis; both had auricular fibrillation. The latter condition was adjusted with quinidin, and marked improvement in the arthritis, with relief of pain, followed. We might recall that many of our measures to relieve arthritis influence the local circulation. Such treatment as Bier's hyperemia, "baking" and perhaps the so-called "shock" treatment with its fever and increase of pulse rate achieves the same result.

The possible influence of circulation on joints is further suggested in a type of case familiar to all. This is the old person with evident arteriosclerosis who begins to have stiffness of the fingers, with subsequent thickening and slight distortion of the knuckles, these changes usually involving the toes as well. How much infection enters into this form of rheumatism cannot be estimated. There were four such cases in this series. The patients were 61, 69, 70 and 71 years of age; no foci of infection were found. The validity of this idea of the influence of circulation on conditions about the joints could be investigated experimentally.



We have noted the absence of change in the joints of acute rheumatic fever. In marked contrast are the roentgen-ray findings in gonorrheal rheumatism, of which there were three cases of long duration. This is fairly typical of any bacterial arthritis. Destructive changes in the cartilage are apparent. Infiltration of the periarticular tissues is extensive. We have found the gonococcus complement fixation test uniformly positive in these cases and in all our acute cases of this type.

Three cases of gout were present in this series, one of them being very well studied. This patient, a man, showed not only an increased uric acid, greater than usually found in arthritis, but incidentally displayed a certain degree of diabetes insipidus and an enlarged sella.

There were two cases of syphilitic arthritis characterized by exacerbation of pain at night. There were four cases of tuberculous arthritis—the typical spindle-shaped fingers. This leaves two groups of patients, one of which includes the cases of arthritis deformans, twenty-three in number, and the other, those cases not belonging to any of the mentioned groups, thirty-five in number, in which there was complaint of chronic rheumatism involving one or several of the larger joints, and in all of which the inflammatory character of the arthritis and the roentgen-ray changes spoke for bacterial invasion, even though this invasion could not be demonstrated.

The group of patients suffering from arthritis deformans presents the usual features emphasized in all clinical descriptions of the disease. Of the twenty-three cases, only three were in men. The average age at the onset was 39, and the average duration at the time of admission was nine years. In none of these cases was there a significant focus of infection. In nearly all, the teeth were reported as being in bad condition, but neglect of the teeth was inevitable. Frequently tonsillectomy was done, not because the tonsils were considered the source of infection, but because the consultant regarded tonsillectomy advisable in view of the prevailing adherence to the idea. Whatever future investigation may reveal, there is no basis in examination of these patients for believing that an infected focus is the cause of arthritis deformans. There is definitely another factor—perhaps the factor of a physical type, certainly the factor of age. The gradual onset of painful swelling of the fingers is characteristic. The visible changes are out of proportion to the meager roentgen-ray evidence of atrophy and hypertrophy.

The treatment of these cases has included tonsillectomy, extraction of teeth, treatment of nasal inflammations, bakes, Pemberton diet, inoculation with vaccines of streptococcus and of pneumococcus, and "shock" treatment with intravenous injection of proteose and typhoid vaccine. Frequently, after suffering chill and fever following typhoid vaccine, the patient has described improvement in the affected joints. This has proved transitory, and no other benefit has followed any form of treatment used. A tuberculin test made in six of the cases was negative.

This brings us to the remaining cases, thirty-five in number, of chronic infectious arthritis. Unlike the preceding group, which began with painful stiffening of the fingers and toes, twenty-four of this group describe involvement of a large joint as the beginning of illness. This involvement is attended by outspoken periarticular swelling, frequently hot and red. The illness fluctuates in severity, but the patient does not recover entirely. Later on these patients may have the swelling and stiffness in small joints, and the impression

is conveyed that the later development is of the nature of a superimposed arthritis deformans, or the senile type of arthritis referred to before. In this group the most exhaustive diagnostic search was made. The examination of every system, always by specialists, was made. Treatment included all the agencies mentioned before. In spite of exhaustive search, fourteen cases, or 58 per cent. of this class of cases, failed to reveal a source of infection that was convincing. The treatment was usually the same in those cases in which no satisfying focus was found as it was in these in which some important local infection was discovered. This is a very important point, as the study of the results in the two groups indicates. First, in the group in which a focus was found, the foci which seemed unquestionably associated with the development of arthritis occurred as purulent prostatitis three times; purulent seminal vesiculitis, once; purulent otitis media, twice; purulent cholecystitis, once; cholelithiasis, once; purulent rhinitis, once, and hemolytic streptococcus pharyngitis, once. The treatment given these patients, as said before, was similar to that given those patients in whom no focus was found, with the exception that the discovered focus was actively treated by irrigation or by removal. No improvement is reported in three of these cases. Cholecystectomy relieved the patient with purulent cholecystitis, and vasotomy relieved the arthritis in the patient with purulent seminal vesiculitis. In the group of patients in whom no important focus could be found, seven were reported improved, five unimproved, and two were not treated. Thus, it will be seen that there is very little difference in the effect of treatment of these two groups.

The part which tonsillectomy plays in the improvement of arthritic symptoms is interesting. This operation was frequently followed by relief, which, though temporary, was nevertheless definite to the patient and usually visible. It raises the question of nonspecific effect, and this is further suggested by the case of one of these patients in whom appendectomy was followed by similar definite, though temporary, relief. Perhaps the changes in the body incidental to anesthesia and hemorrhage, followed, as they usually are, by slight fever and leukocytosis, are not unlike the changes following the inoculation of typhoid vaccine.

With regard to the other forms of treatment, it may be said that baking was sometimes comfortable and sometimes disturbing as far as the patient was concerned. No definite effect on the rheumatism was noted in the history. The inoculation of proteose was always followed by a definite reaction; but, on account of the uncertainty of the chemical product, this mode of "shock" treatment was supplanted by the intravenous injection of typhoid bacilli. The usual initial dose was from 25 to 50 millions, repeated in ascending doses every five days so that at the end of about two weeks a patient might be receiving one billion bacteria at a dose. This increase in dosage was found necessary because, once inoculated, the patient invariably required greater doses to produce chill, fever and leukocytosis. Frequently, definite improvement could be traced to a series of such injections.

The influence of an intercurrent infection was noted in one of the cases of chronic infectious arthritis in which chronic proctitis seemed to be an important focal infection:

The arthritis was of the usual hypertrophic type, and involved the right elbow and right knee. The joint fluid, typical of this group of cases, was slightly turbid, yellow, and



contained about 5 per cent. of endothelial cells and 95 per cent. of polymorphonuclear leukocytes. Treatment of the proctitis for one month failed to change the arthritis. The patient became ill with a prevailing infection, characterized by headache and pharyngitis, which was loosely called grip. Fever prevailed for six days. The knee joint measured 37 cm. in circumference before this infection. A pronounced improvement of the arthritis was described by the patient, during this illness. Stiffness disappeared, and free movement was possible. The joint circumference diminished to 32 cm. and local thickening. Heat and congestion subsided. The leukocyte count was 11,000. Blood culture was negative. Throat culture showed a predominating gram-negative hemolytic bacillus, easily cultivated. After this infection subsided, the joints remained in good condition until the patient attempted their use, when the condition reverted to its original state.

Another interesting nonspecific effect was produced in another case of the same type of arthritis:

The knee was inoculated with 5 c.c. of 1 per cent. solution of gelatin having a  $p_H$  of 4.7. Local heat, swelling and pain followed. Fever of 100 F. persisted for three days. A leukocytosis of 20,000 occurred. Culture of the joint fluid was sterile. All the joint signs subsided, and the local condition was better than it had been in two years, according to the statement of the patient. The periarticular tissues were soft; the bony prominences were easily felt and were not tender. But when the patient attempted to use the knee, the previous condition of effusion, periarticular thickening, pain on use, and tenderness recurred.

It is unfortunate that we have not followed up these cases of chronic infectious arthritis in a way sufficient to show the present condition, and it is impossible to say how long the improvement recorded in this group of twenty-four patients has persisted. As a group, they offer encouragement to the effort to use all possible measures to discover infected foci. The high percentage of improvement recorded in those cases in which no focus was found seriously argues against the accuracy of our reasoning from cause to effect—from focus to arthritis. However, the subject is one which allows free play to philosophical discussion, but is one which, by the very nature of the process involved, evades accurate decision.

There remains to discuss eleven cases which, on account of their relative frequency and the uniformity of symptoms and invariable existence of active prostatic infection, invite our attention. These are patients, usually between the age of 35 and 50, who complain of backache. No doubt they have been told, in the absence of roentgen-ray evidence, that they had "sacro-iliac strain." The distribution of the lesion in these cases is remarkably constant, consisting, usually, of destructive changes in the fifth lumbar vertebra. Treatment consisted of active treatment of the prostate by massage and instillations, and immobilization of the lumbar spine. Good results occurred if the changes in the spine had not progressed to a high degree of destruction.

#### COMMENT

The most significant features of this study have been:

1. The emphasis given to the part which circulatory changes and consequent nutritional changes play in the production of painful stiffening of the joints in which simple atrophy is the only evidence on roentgen-ray examination.

2. The importance of exhaustive physical examination in the search for infected foci.

3. The necessity of employing many forms of treatment, since no form was constantly successful and each kind of treatment was occasionally successful.

4. The importance of the last described group of male patients whose chief symptom is backache and who have spinal osteoarthritis, apparently associated with prostatic infection.

5. The lack of evidence that arthritis deformans is a focal infection.

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## THE DIAGNOSIS OF CONDITIONS CAUSING BACKACHE

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Backache is one of the commonest of complaints. Etiologically considered, it is one of the most difficult to deal with. The sufferer often wanders from physician to physician, from urologist to gynecologist, from surgeon to orthopedist, from osteopath to chiropractor. Drugs of all descriptions, "patent" and legitimate, are taken; applications, operations, manipulations are resorted to without avail. Like a good old creditor, the backache stays with the patient sufferer.

It is true that a certain percentage of the afflicted are cured or relieved by medical or surgical intervention; that in other cases backache yields to the chiropractic touch or the magic influence of "science" of some kind. But is it not also a fact that many of these poor patients come again and again to the physician's office, only to be considered a nuisance by the one who is unable to help them, often through his own fault? And is it not true that in the field of industrial medicine, no other problem has resulted in more discredit to the profession than the failure in diagnosis and treatment of this condition? It is not willingness to help or sympathy which is lacking in the physician, but in no field of medicine is there greater ignorance as to cause and conditions, or more perfunctory practice regarding treatment than in dealing with the complaint commonly called backache.

Here, as in all other fields, it is only careful attention to little things and to petty complaints, scrutiny, observation and painstaking examination, which will save the reputation of legitimate medicine. Thorough knowledge and a broad conception of all the conditions that may bear on the question are the necessary requisites for any action. I take it for granted that the modern physician understands the practical mechanics of the spine; that he appreciates the importance of the lumbosacro-iliac junction as the supporting arch of the upper half of the body, and that he has at his command the aid of the modern laboratory and a skilled roentgenologist.

#### FACTS OF IMPORTANCE IN DIAGNOSIS

Since Lovett's<sup>1</sup> comprehensive article, the situation regarding backache has undergone some changes that are well worth noting. It is true the symptomatology has remained the same; the general classification—pelvic, traumatic, arthritic, static, sacro-iliac—still holds good. The "patent" medicine venter continues to reap his revenue and we are still, in many cases, "up against it," as far as diagnosis and treatment is concerned. But two facts stand out that the student cannot overlook:

1. Lovett states that backache is more common in women than in men. In his paper, he speaks occasionally

1. Lovett, R. W.: The Causes and Treatment of Chronic Backache, J. A. M. A. 42:1615 (May 23) 1914.



of "her" when referring to the patient. From my own experience and the data available in the literature, it seems that there has been a shifting of sex incidence in backache coming under the observation of the orthopedic surgeon, with an apparent preponderance in men resulting. O'Ferrall,<sup>2</sup> in a clinical study of the cause of backache, cites thirty-four cases in men to six in women (laborers). Kuth,<sup>3</sup> among 208 cases, finds 136 in males and twelve in females (traumatic, seventy-five; nontraumatic, seventy-seven; and six after childbirth. In my experience I find one case of backache in women to approximately two in men. An explanation of this situation at first sight seems difficult. The most plausible reason is that backache in women most frequently is of pelvic etiology, and that women, becoming more and more acquainted with this fact, consult a gynecologist or general surgeon to begin with. On the other hand, the development of gynecologic diagnostic and therapeutic methods has resulted in women being subjected to corrective operative measures much more expeditiously than previously was the case, and thus in reducing the frequency of cases that in earlier days were not cured by "successful" operations. In other words, gynecology has become more popular and more efficient. But is backache from all other causes, extrinsic and intrinsic, more frequent in man than in woman? This rather interesting problem can be solved only by examination of a large, unselected material. An investigation of this sort will not only be interesting, but is also bound to be of great practical value, for it will throw light on a number of sanitary, social and economic conditions connected with causation and prevention.

2. The second fact may be summarized by the statement, based on observation during the last few years, that development and exploitation of modern diagnostic means and closer scrutiny of their revelations have resulted in the recognition of causes for backache which, up to the time of Lovett's writing, had appeared rather vague or were insufficiently known. I need refer only to the studies regarding osseous malformations, focal infections, and the like. On the other hand, close criticism of our findings has convinced us of the numerous shortcomings of our technical means of detection, e. g., comparison of roentgenograms with the actual pathologic condition.<sup>4</sup> In this connection, much is open to further investigation.

#### NATURE OF EXAMINATION

The conclusion to be drawn is of paramount importance: Every patient coming to us for treatment for backache must be subjected to a most systematic and careful examination. This point cannot be emphasized too strongly. It is not sufficient to hear the patient's complaint, to apply a few palpatory or functional tests, and then dismiss him with a drug, a liniment or a pelvic "support." That is exactly what the quack is doing. By this method, symptoms are frequently relieved; but the cause, as a rule, persists. The patient drifts from bad to worse, and the physician brings condemnation not only on himself but, what is infinitely worse, also on the whole profession. Superficiality and snapshot diagnosis, merciless as the statement may appear, constitute the arch sin committed against the backache

sufferer in my experience, not only by the general practitioner but also by many a busy orthopedic surgeon.

In order to avoid the numerous pitfalls, it is indispensable to have the patient remove the clothing. A careful survey must be made both with the patient standing up and with him lying down. Close cooperation by the internist, gynecologist, urologist, orthopedist, roentgenologist and laboratory man is in many cases the only way to expeditiousness and success. A routine scheme, as outlined below, will prove most useful and will result in a possible diagnosis by a process of elimination rather than by a process of election, which is only too liable to lead to a loss of time and to failure. It may seem far fetched, cumbersome and time consuming to launch on such a comprehensive scheme as the one proposed. My experience and failures have taught me that the procedure pays in the end, and that the investigation can be accomplished in a very short time, once the mind is trained to proceed in a systematic manner. Many authors who have carefully gone into this question are

#### CAUSES OF BACKACHE

Extrinsic (remote)				
Gynecologic	Genito-Urinary	General Abdomen	Nervous System	Constitutional
Displacement	Bladder	Constipation	Meninges	Diabetes
Inflammation	Prostate	Inflammation	Medulla	Toxemia
Tumor	Seminal organs	(appendix, etc.)	Peripheral nerves	Bacterial
Pregnancy	Ureters	Tumor		Alcohol
Coccygodynia	Kidneys	Visceroptosis		Lead
Organic		Hernia		Neurasthenia
Nervous		Hydrocele		Hysteria
		Varicocele		Endocrine
		Rectal disease		Myalgia

Intrinsic (direct)				
Congenital	Static	Traumatic	Inflammatory	Neoplastic
Irregular ossification	Large abdomen	Strain (sacro-iliac)	Syphilis	Sarcoma
Sacralization	Slumped attitude	Sprain	Pott's disease	Carcinoma
Fifth lumbar	Curvature of spine	Dislocation	Sacro-iliac tuberculosis	
Defects	Rachitic	Fracture	Infectious disease	
Rib formations	Osteomalacic	Postoperative	Pneumonia	
	Scoliosis		Typhoid	
	Spondylolisthesis		Gonorrhea	
	Tilting of pelvis due to		Actinomycosis	
	a. Inflammation	of lower extremity	Osteomyelitis	
	b. Paralysis		Spondylitis deformans	
	c. Deformity		Neuritis (herpes zoster)	
	Weak foot		Neuroradiculitis	
	Contracted gastrocnemius			

supporting me in this plea for thoroughness and system.<sup>5</sup> A careful anamnesis in the great majority of cases will immediately suggest a definite course. But we must always bear in mind that the case under observation may present a combination of any two or more causes, and that there is the possibility of referred symptoms. The accompanying tabulation, adopted by me, is self explanatory and is recommended to any one called on to solve a difficult problem of this sort.

Generally speaking, in examining patients suffering from backache I have found it most useful always to bear in mind three points: (1) that one must, as Kidner<sup>6</sup> puts it, so pointedly, "get rid of the old idea of the inherent stability and strength of the lower lumbar spine and the pelvic girdle, and to look at it as a particularly unstable and complicated mechanism with

2. O'Ferrall, J. T.: Low Back Pain—a Clinical Study of Its Cause, *J. Bone & Joint Surg.* 4: 384 (April) 1922.

3. Kuth, J. R.: A Study of Two Hundred and Eight Cases of Lower Back Pain, *J. Bone & Joint Surg.* 4: 357 (April) 1922.

4. O'Ferrall, J. T. (Footnote 2); Magnuson, P. B., and Coulter, J. S.: Workman's Backache, *Internat. Clin.* 4: 215, Series 31, 1921. O'Reilly, A.: X-Ray Findings in Cases of Painful Back, *J. Missouri M. A.* 18: 440 (Dec.) 1921.

5. O'Ferrall, J. T. (Footnote 2), and Palmer, M. B.: The Lumbar Spine and Sacro-Iliac Joints, *Am. J. Roentgenol.* 9: 16 (Jan.) 1922. Albanese, A.: Better Knowledge of Bertolotti's Syndrome, *Chir. d. org. di movimento* 5: 577 (Dec.) 1921. Holland, G. T.: Note on Sacralization of the Fifth Lumbar Vertebra, *J. Bone & Joint Surg.* 4: 215 (April) 1922. Boyd, W. A., and Seibels, R. E.: Backache as Related to Gynecologic and Orthopedic Conditions, *J. South Carolina M. A.* 18: 261 (Sept.) 1922. Kidner, F. C.: Disturbances of the Lumbar Spine and Pelvic Girdle, in Jones, Robert: *Orthopedic Surgery of Injuries*, New York, Oxford University Press.

6. Kidner, F. C. (Footnote 5, sixth reference).



many and rather weak points"; (2) that anatomy and function of the lumbosacro-iliac apparatus is by virtue of its connection and location especially liable to be secondarily affected by alterations of all structures surrounding and supporting it and supported by it, with the result of mechanical, inflammatory and productive changes; (3) that many cases are associated with neurasthenia and psychasthenia, which are liable to exaggerate or misrepresent local symptoms. It is therefore advisable to test possible hypersensitiveness of the patient by pressure on the styloid process. This "trick" has given me many times a pointer as to the evaluation of complaints.

#### ETIOLOGY

In reviewing the numerous possibilities in the etiology of backache, experience has shown me that there are five conditions which are quite frequently overlooked, because they and their connection with pain in the back are insufficiently known, or else the facts making the diagnosis are at times difficult to establish. These conditions are (a) of a genito-urinary nature (small concrements, chronic prostatitis); (b) toxemias (focal infection); (c) weak foot (flatfoot); (d) malformations (especially of the fifth lumbar vertebra), and (e) myalgia. As to their significance as regards the matter under discussion, there can be no doubt. They all occur in daily practice, and often do not present, especially in the beginning, any other symptom but backache.

(a) There is perfect agreement that the treatment of a patient who has a small stone in the ureter or a chronic prostatitis with measures to cure a local backache is inexcusable. It is true, the prostatitis may gradually get better or the stone may pass, and with it the backache may disappear in spite of the mistaken diagnosis and treatment. But where does such practice differ from that of the quack? An excellent means of avoiding this pitfall is a routine microscopic examination of the urine in every case of backache.

(b) The same principle holds true of the toxemias. In our age and generation, one would think that every physician would carefully examine each patient's teeth and throat, and that he would try to discover the focus in the pelvic organs before writing a prescription for a liniment or for acetylsalicylic acid. Still, our daily experience proves that such is not the case. I agree in every respect with Gardner,<sup>7</sup> who emphasizes the fact that, in every case of suspected focal infection, "a full mouth examination not only is necessary, but is the patient's due," the dental report to be based on complete mouth roentgenograms and the clinical evidence. How many sufferers from backache could have been cured by this practice in the beginning of their troubles, while their treatment proves to be most difficult after secondary changes have firmly established themselves in the structures of the backs. In this connection, it is well to remember that syphilis is not always proved by a positive Wassermann reaction. I have seen a number of persons suspected of syphilis with a persistently negative Wassermann reaction, who responded quickly to treatment with yellow mercurous iodid.

(c) According to our experience, weak foot, especially in the beginning, is often associated with backache. A recent summary of the physical status of four million recruits for the late war shows that among individual defects flatfoot ranged far ahead of anything else (11.7 per cent.), and as a cause for rejection, it

amounted to 3.6 per cent. Thus, flatfoot, and weak foot still more, are astonishingly frequent disorders. The cases in which persons having weak feet were treated for backache were numbered by the thousands. Once a physician has learned to regard the whole body as a static unit, the mechanics of a single part of which cannot be disturbed without bringing disarrangement and strain on more remote links of the chain, this situation will automatically be remedied. In the reconstruction camps of the U. S. Army during the war, an encouraging beginning was made in the systematic diagnosis and treatment of this condition, which no doubt will have its effects in emphasizing, in civil practice, the relation between weak feet and backache. Easy as the diagnosis of weak foot may appear, in this connection I wish to emphasize the fact that the functional test as generally carried out, with the patient balancing the weight on one foot, is ineffective and altogether misleading. To most persons, this position is an unnatural one, and therefore, in order to maintain it, they make unusual and incoordinate efforts, with the result of forced innervation of muscles which, under normal conditions of weight bearing, would remain more or less inactive. Thus, for instance, a weakened tibialis anticus, during an examination of this kind, may elevate a sagging longitudinal arch and lead to the assumption that the arch is really efficient, while, on ordinary walking and standing, it is not. This deception is preeminently liable to occur in incipient cases of weak foot. Boigey<sup>8</sup> reports a similar observation on excessive weight bearing. In our case, we have, in addition to the heavier load, the effort of the patient to maintain balance. In testing for weak foot, it is therefore my procedure to let the patient throw his weight on only one foot, just as he would in the process of a slow walk, while the other foot remains on the ground and serves to maintain the balance of the body. This method gives a far clearer and more accurate picture of the existing weakness of a foot.

(d) Skilful modern roentgen-ray diagnosis has thrown considerable light on the backache due to abnormalities of the spine and sacrum. The frequency of these malformations is surprising. Baetjer and Waters<sup>9</sup> report that, in 1,000 cases of examination of the lumbosacral region, there were 15 per cent. of congenital nonunion of the sacral laminae. Rib formations in connection with the fifth lumbar vertebra are also an occasional occurrence. The most interesting abnormality in this region, also quite frequent, is the so-called sacralization of the fifth lumbar vertebra, of which Imbert<sup>10</sup> differentiates three degrees, according to the greater or lesser size of the transverse process, and its more or less complete contact with the ilium or sacrum (sacralization or pseudosacralization). The authors<sup>9</sup> mentioned say that "this abnormality generally gives symptoms." Considering that the fifth lumbar vertebra is the last link of a movable chain, and that it acts as a buffer between the spine and the pelvic girdle, and taking into account the intimate relation of this vertebra and the sacrum to many structures, it is not surprising that clinical diagnosis, together with roentgen-ray findings, has developed the interesting fact that congenital anomalies in this region predispose to injury, with resulting back symptoms. The understanding of Bertolotti's "painful sacralization" syndrome

8. Boigey, M.: Observations on the Various Modes of Locomotion of Man, *Presse méd.* **30**: 1461 (Sept. 2) 1922.

9. Baetjer, F. H., and Waters, C. A.: Injuries and Diseases of the Bones and Joints, New York, Paul B. Hoeber, 1921, pp. 316-317.

10. Cottalorda, M. J.: The Fifth Lumbar Vertebra, A Clinical and Roentgenologic Study, *Marseilles méd.* **59**: 382 (April 15) 1922.

7. Gardner, B. S.: The Examination of Teeth in Group Medicine, *Minnesota Med.* **5**: 356-359 (June) 1922.



rests on the recognition of this important connection. Léri,<sup>11</sup> however, says that even a pronounced degree of sacralization revealed by roentgenography is rarely the cause of pain. Albanese,<sup>12</sup> recently after drawing our attention to the fact that many of these cases are misdiagnosed and mistreated, points out that Bertolotti's syndrome always means sacralization, but that sacralization does not always mean Bertolotti's syndrome. This, in my experience, states the case correctly, and may be applied to any congenital malformation of this region in relation to injury. The term injury does not necessarily imply trauma of a serious character. The ordinary wear and tear or increased taxation of the abnormally developed bones, joints and ligaments is sufficient at times to invite the changes necessary for trouble in such a locus minoris resistentiae. The observations of other authors as reported in the recent literature confirm me in this statement.

O'Reilly,<sup>13</sup> in two recent roentgen-ray studies, rightly emphasizes the importance of the relation between congenital malformation of the lumbosacral region and industrial accidents, injury, strain and backache. Approximately 50 per cent. of persons showing abnormalities of this region have not, and probably never will have, back symptoms if there is no additional strain or trauma; but observations seem to point to the fact that they have a potentially weak spine, predisposing to strain and subsequent backache. Sooner or later, this fact will have to be considered in the examination of prospective laborers, and in the evaluation of industrial accidents and determination of compensation connected with them. On the other hand, the roentgen-ray finding of a congenital abnormality must, in case of backache, lead us to assume that the cause of the pain is located in the lumbosacro-iliac apparatus, even if the roentgen ray does not show anything else, provided we can definitely exclude all other causes. In other words, I am joining Léri<sup>11</sup> in his warning that sacralization and other abnormalities, while receiving due consideration, must not be called to account for all sorts of pathologic conditions.

(c) The last cause for backache—not an infrequent one, if we look for it—to be considered within the scope of this treatise is myalgia. It is sometimes called muscular rheumatism, myositis, neuralgia or myogelosis. The theory that myalgia is due to three causes: direct infection, bacterial toxemia, or pyemia must, according to recent investigations concerning the colloidal nature of the tissues and the hydrogen ion concentration of the body fluids, be enlarged to include also changes of a chemical nature in the muscles. The investigations referred to show that there is a close relationship between the processes taking place in the condition under discussion and the muscle changes in rigor mortis, through accumulation of fatigue products, with the production of lactic acid.

#### PREDISPOSITION

According to these observations there are three types of persons who have a so-called rheumatic constitution: (1) the asthenic type, pale, tall, narrow chested, with

poor circulation; chlorotics; lymphatics; spasmophilics; (2) the hereditary adipose type; diabetics; those suffering from hypophysial adiposity, adiposis dolorosa, purpura; (3) individuals showing the uric acid diathesis. These three types of patients, under the influence of daily life, changes of temperature and barometric pressure, overfatigue, overstrain or exposure of any kind, are liable to develop myalgias.

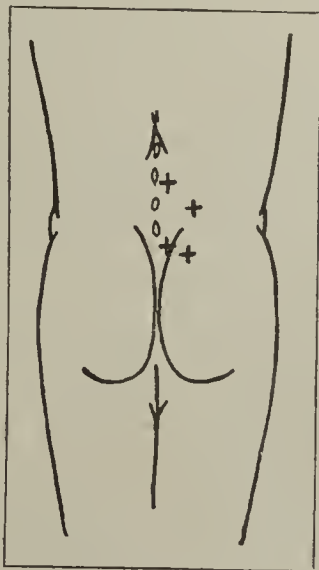
For the diagnosis of these myalgias, it is of paramount importance to know where to look for their source, and to palpate the muscle in the suspected area in order to discover the small circumscribed hardenings (often the size of a pit of a date) that are the cause of the trouble. Next to myalgias in the shoulder and elbow region (brachialgia), the myalgia in the lumbosacral region (the lumbago proper) is the most common manifestation of this disease. The seat of the pathologic condition in such a case is generally to be found in the lower end of the erector trunci muscle, and especially deeply situated in the angle formed by the iliac bone and the lowest part of the lumbar spine. In quite a number of cases of so-called sprain of the lumbosacral ligaments, strain due to fatigue and weakness,

or occupational and postural strain, I have been able to demonstrate the myalgic nodules deep in the lumbosacro-iliac angle. At times, the lesion may be found a little higher up on the outer or inner side of the long back muscles and in the posterior superior part of the gluteus maximus. Men and women are similarly affected; but in every case we have to deal with people of poor muscular development. The diagnosis rests on the type of patient affected, the demonstration of the nodulation in the muscles, always painful on carefully increased pressure, and often the presence of a more or less hypersensitive area of skin directly over the affected muscle area. Often one may elicit a history of, or may discover, myalgic spots in other parts of the body at the time of the examination.

On the whole, this condition, up to this time, has been insufficiently known and little looked for. Most patients subjected to home treatment in the beginning yield to antipyretics, heat and massage, and therefore never come to a physician for a diagnosis. But, many patients suffering from the chronic form of this trouble have been subjected to all kinds of unsuccessful treatment, because the condition was not looked for or was unrecognized.

#### TREATMENT

This leads to the question of treatment. The genito-urinary causes of backache must be left to the urologist. Those due to toxemias will generally yield to treatment of the focus, plus general measures. Backache in connection with anomalies of the lumbosacro-iliac apparatus is opening up a vista regarding prophylaxis, while the treatment is essentially of an orthopedic character. Pain in the back due to weak feet disappears like magic with attention to the fundamental pathologic condition. The lumbago of a myalgic character, once it has become chronic, is amenable to treatment only by proper massage of the affected part of the muscle, vigorously applied to strong muscles, but gently to weak muscles, and above all by injections of saline solution, with or without procain, into the individual nodule. Attention to the general condition of all patients is of equal, if



Seat of predilection of lumbosacro-iliac myalgia.

11. Léri, A.: The Fifth Lumbar Vertebra and Its Variations, *Presse méd.* 30: 158 (Feb. 22) 1922.

12. Albanese, A. (Footnote 5, second reference).

13. O'Reilly, A. (Footnote 4, third reference): X-Ray Study of the Lumbosacral Spine, *Southern M. J.* 15: 217 (March) 1922.



not superior, importance. But above all there must be assured the protection of a definite diagnosis.

#### CONCLUSIONS

1. The essentials for an etiologic diagnosis in cases of backache are system and thoroughness in examination.
2. The search for remote causes and for those of local character is of equal if not greater importance.
3. Congenital anomalies of the lumbosacral region predispose to injury, with subsequent backache.
4. Lumbago proper or lumbosacro-iliac myalgia is one of the most frequent and least recognized conditions.
5. In every difficult case, the establishment of a diagnosis depends on close cooperation of the various diagnostic branches of medicine.

### BLOOD TRANSFUSION BY THE CITRATE METHOD IN HEMORRHAGES OF THE NEW-BORN\*

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The use of whole blood injections is a well recognized clinical procedure in cases of hemorrhage occurring in new-born babies. Several methods have been devised for this procedure, all of which have certain features to recommend them. The simplest method is the use of subcutaneous or intramuscular injections, from 10 to 20 c.c. being employed at a time. These are often repeated two or three times in a given case, if the primary injection is not successful in arresting the hemorrhage. This is a perfectly safe method, and can be carried out under any circumstances by a physician of ordinary skill. The objection to its routine use is that frequently cases fail to respond favorably; moreover, such injections are frequently painful and irritating to the recipient.

A second method is the direct transfusion through anastomosis of veins by means of cannulas, the median basilic vein of the donor being united to the external jugular of the baby. This method is good, but is rather cumbersome. It requires the use of trained assistants, and not a little skill in blood vessel surgery for its successful accomplishment. The amount of blood transferred is not accurately measured, but must be judged by the change in color of the baby and thus approximated. It has the advantage that nothing but blood is injected, which avoids all possible danger of toxic reaction due to anticoagulants.

A third method is the injection into the longitudinal sinus by means of syringe or buret of whole blood, either with or without the addition of citrate to prevent clotting.

This method is used especially by pediatricians, and in the hands of one doing this kind of work is doubtless very satisfactory. For the general practitioner, however, the procedure is considered too formidable unless he has had some special training along these lines. The objection advanced is that one cannot be sure that the needle is in the lumen of the sinus throughout the injection, even if it is there when the injection is begun. I have seen one case at necropsy,

after injection by a man who claimed that he had had considerable experience in the use of this method. A large hematoma was found under the dura. The needle had evidently penetrated the side wall of the sinus after the injection was begun. Numerous other reports of similar accidents are on record.

Fourthly, various substances other than whole blood have been used in this type of case, with indifferent results: horse serum, blood coagulants and human serum, either of the father or the mother of the child or of some person not a blood relative. The general experience has been that they work very well in the mild cases, but frequently fail in the severe form of the disease.

It would seem, therefore, that the use of whole blood in these cases is the only reliable way to stop the bleeding. If this could be done in a simple and safe method that is not too complicated for the average surgeon, a marked advance would be made in the treatment of these cases. It was in the hope of developing such a method that I undertook this piece of investigation.

It seemed reasonable that, if the peripheral veins were not too small, their use would be advisable, because any one familiar with the procedure in adults would be better able to acquire the technic in babies. In discussing the question with the pediatricians, however, I was told that the peripheral veins were too small, and that the method was impracticable. The same opinion was advanced by the men doing the direct transfusion. However, the dissection of a number of veins in bodies that I saw postmortem proved beyond a doubt that

#### INSTRUMENTS

Two pairs of fine rat-tooth tissue forceps	One buret
Two pairs of mosquito artery forceps	One rubber catheter, 18 inches, as connection
One pair of iridectomy scissors	One constrictor for donor's arm
One scalpel	One small syringe for injecting procain
One large bore bleeding needle	One skin needle and horsehair
One pair of ordinary scissors	Ten c.c. of a 2 per cent. solution of sodium citrate
One Luer needle No. 19	One tube of No. 0 catgut
One 4-ounce glass graduate and stirring rod	Special board to hold baby

these veins could be used if the proper instruments and technic were employed. Losee<sup>1</sup> mentions this fact in an article on the use of blood transfusion in cases of severe hemorrhages in infants. He does not describe his technic. Bamberger<sup>2</sup> describes a case in which he successfully used the median basilic vein.

The median basilic vein was first selected as most accessible and presumably the most satisfactory. After it had been used on several occasions, however, it proved to be so small that a very fine needle had to be used to insert into the vein. This resulted in a very slow flow of blood, when the gravity method was used, making the procedure very tedious and sometimes resulting in coagulation of the blood before the completion of the operation. These difficulties were especially seen in premature infants.

The external jugular vein was therefore selected because of its size, and also because of its accessibility. It is located just under the platysma muscle, and can be easily exposed by a small incision through the skin and muscle. It can readily be seen when the baby cries. The femoral or long saphenous vein has been

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1. Losee, J. R.: Bull. Lying-In Hosp., New York **12**: 100 (July) 1922.  
2. Bamberger, A.: Illinois M. J. **39**: 27 (Jan.) 1921.



mentioned in this connection, but was not used in this series because of the inevitable soiling of the wound postoperatively by urine and feces.

The citrate method was selected because of its simplicity, and because probably more men are familiar with its use than with other methods. There is very little, if any, danger of a toxic reaction from the small amount of the drug used in a single injection.

#### TECHNIC

Since the object of this work was to develop a method that would be practicable under almost any circumstances for men of average skill, the equipment has been made as simple as possible for efficient work. Only a few instruments are necessary, but they must be good and of the right kind.

For the special holding board, an inch board about 20 by 10 inches is used as a base. Across this, about 4 inches from one end, is set another piece of inch board 2 inches high, called the neck board. A series of  $\frac{1}{2}$  inch holes are drilled in the base board about 2 inches from the edges and about 4 inches apart, through which bandages tied to the baby's ankles and wrists can be passed. The baby is thus secured to the board.

The baby is placed back down on the board so that the neck board comes under the back of its neck, and the hands and ankles are secured as mentioned above.

The head is then held rotated to one side by a nurse or assistant. This exposes the region of the opposite external jugular vein. In cases in which transfusion is indicated, the condition of the baby is such that it offers, in most cases, little resistance or objection to being placed on the board.

It is advisable to have a long narrow bore glass tube as a buret, and we find that the glass portion of the Asepto irrigating syringe works very well. We have also used the barrel of an ordinary 20 c.c. Luer syringe for this purpose. The object of having the buret long and slender is to facilitate observation of the rate of injection, since the flow of blood through the fine needle is necessarily slow.

The needle used must not be sharp pointed because of the tendency to cut and tear the wall of the vein. For this reason the ordinary Luer needle is made blunt by grinding the point down with an emery wheel.

Before the operation begins, it is well to have everything in shape to complete it without delay. The importance of this point is that if there are delays, a certain amount of clotting is liable to occur, which interferes with the flow of blood through the small needles that it is necessary to use in this work.

The donor's arm is prepared for venipuncture in the usual way, and is painted with iodine. A 12 inch No. 0 catgut ligature is doubled, and the ends are grasped by mosquito forceps. The skin over the external jugular is painted with iodine followed by alcohol, and the region of the vein injected with a small amount of procaine or apothecary 1 per cent. solution. The vein can be readily seen in most cases, especially when the baby cries.

A few minutes are allowed for the anesthetic to take effect, and then a small incision is made about an inch in length along the course of the vein through the skin and platysma muscle. In infants that have had a severe hemorrhage, the vein may be hard to find, owing to the collapsed condition. The baby will usually cry, however, and this will give the needed distention. After exposure, the vein is grasped very gently with fine artery forceps, and carefully cleaned of perivascular connective tissue. The importance of this point is that the vein cannot be properly opened, nor the needle easily inserted, unless the vein wall is quite free. The vein is next lifted up, and the double ligature passed underneath. This is sometimes facilitated by passing a grooved director before passing the ligature. The loop in the catgut is then cut, giving two ligatures under the vein. The ends of each ligature are caught in mosquito forceps. One ligature is drawn upward and the other downward so that the segment of the vein that is to be opened is raised clear of the wound, and all

circulation in it is stopped. At this point the vein is dropped back into the wound, and a pad soaked with salt solution is placed over the incision to prevent drying.

The blood is now obtained from the donor in the usual way, a large bleeding needle being used with a 6 inch rubber tubing attached, into the 4 ounce graduate containing 10 c.c. of a 2 per cent. solution of sodium citrate. The blood is constantly stirred during collection, and until it is ready to be poured into the buret, thus insuring thorough mixture with the citrate solution. In donors with fine veins or in subjects in whom the arm is very fat, conditions frequently encountered in women, the vein is transfixed by a fine cambric needle to prevent rolling when the puncture is made.

After the collection of the blood, the salt solution pad is removed from the baby's neck, and the segment of the vein between the ligatures is raised clear of the wound. The vein is next incised half way through its diameter with the fine iridectomy scissors. Ten cubic centimeters of physiologic sodium chloride solution is placed in the buret, which is connected to the No. 19 Luer needle by an 18 inch rubber tubing about the size of the ordinary rubber catheter. This needle must have a blunt point, which prevents injury to the vein wall during the insertion. When it is seen that the salt solution is flowing freely through the needle, the opened segment of the vein is lifted up, and a stream of salt solution from the needle is directed at the hole in the vein. This dilates the hole and materially aids in the introduction of the needle into the vein. The proximal ligature is slightly relaxed as the needle enters the vein, and then drawn taut after the insertion of the needle. The needle is thus held in place.

The salt solution is allowed to flow into the vein; when it is seen that a good flow is established, the citrated blood is poured into the buret by the assistant, and the buret kept filled until all of the blood has been injected. The last of the blood is followed by a few cubic centimeters of salt solution. The needle is then withdrawn, and the vein is tied off above and below the opening with the tension ligatures mentioned above.

The wound is closed by one catgut ligature in the platysma, and a subcuticular horsehair suture in the skin. It is dressed with a dry dressing, which may be changed to a hot boric compress if infection occurs, as happened in one of these cases. If everything works smoothly, the transfer can be effected in about fifteen minutes from the time the collection of the blood begins.

The donor in these cases may be the mother, the father, or even some persons not a blood relative of the baby. There is no necessity to group the blood of the donor or recipient, as it has been shown that the hemagglutinins and precipitins are not developed in the child to any great extent until it is about 2 years old. It was found, in this series, that sometimes the blood of one donor was more effective in controlling the hemorrhage than that of another. Blood from the mother frequently seemed to be better than that from the father.

There does not seem to be any danger of overloading the heart in giving the blood in this way, as the flow into the vein is very slow, and in none of the babies was there any evidence of respiratory or circulatory embarrassment. Many of the babies had an elevation of temperature of a few degrees for a few hours, but seemed to be otherwise none the worse for the operation.

#### RESULTS

In all, there were fourteen cases in this series. The seriousness of the hemorrhage varied from a slight capillary oozing from a mucous membrane to a severe anemia which resulted from extensive bleeding from the cord, or from a melena. In many of the cases, various remedies had been tried before transfusion was undertaken, such as retying and sewing the umbilicus in cord hemorrhages, or the giving of various other



forms of coagulant, such as blood coagulants, horse serum, or human serum under the skin. These measures had failed to produce the desired effect, and so transfusion was resorted to. The operation was followed by recovery in all cases, but in a few it was necessary to repeat the transfusion.

In one case a baby was suffering from a severe icterus neonatorum, and the jaundice persisted for several days after the hemorrhage was controlled. This is suggestive of the possible value of this procedure in severe cases of this kind unaccompanied by actual hemorrhage.

Clinically, striking improvement is shown by these babies after they had received from 75 to 100 c.c. of blood. The color is better, the bleeding usually stops in a few minutes, and the child is very much more active. It can be put to the breast in a short time, and is usually vigorous enough to take its feeding. If it is very weak from blood loss, it is probably better to feed it breast milk from a bottle for some time until it regains some of its strength, and is free from the danger of recurrence of the hemorrhage. If recurrence does occur, it may be necessary to repeat the process. In this case, if one external jugular has been used, it is probably better to use the median basilic vein, if it is not too small.

This, however, is not always necessary, as in one case I transfused a baby that had had a previous transfusion of defibrinated blood into the external jugular. This child started to bleed again on the second day, and I attempted to use the opposite external jugular for a second transfusion. As a result of defective apparatus, the blood clotted while we were getting it into the vein, and we were forced to tie off that vein. We then tried the arm vein, but it was too small, and broke while we were inserting the needle. I therefore reopened the wound I had made in the neck and dissected out the internal jugular vein, passed ligatures in the usual way, injected the blood, and tied off that vein. This left the baby with both external jugular veins and one internal jugular vein tied off; but, as far as could be seen, it did not affect the circulation of the head in the least, and the baby made an uneventful recovery.

One point that might be mentioned that we have learned from these experiments is that in using blood from the mother it is better to allow a slight excess of citrate solution, as it would appear that more is necessary to prevent coagulation in mother's blood than in blood taken from the father. This clinical fact is in line with some results that I have obtained in the study of the coagulation time of the blood in puerperal women.

These hemorrhages occurred from the first to the fourteenth day of life, and are more common about the fourth to the seventh day. In the melena cases there may be no evidence of bleeding for some time, except the pallor and weakness of the baby, until a large, black stool with or without fresh blood reveals the diagnosis.

Bleeding from the cord or from a circumcision is usually detected early, but much valuable time is frequently lost trying ineffectual methods to control it, such as retying the cord, putting in extra stitches, or the use of styptic applications locally. These hemorrhages are chemical in origin, and cannot be controlled by mechanical means. The only sure way of controlling them is by the administration of whole blood, and the best way of accomplishing this is by the intravenous blood transfusion of citrated blood.

It is not known just what happens in the blood of new-born babies that results in the failure of the normal mechanism of coagulation to function. Rodda<sup>3</sup> has shown that there is a decrease in the coagulability, beginning with the second day and reaching its lowest point about the fourth or fifth day. The coagulability returns to normal in most cases about the eighth to the tenth day, and the bleeding time as well as the coagulation time may be prolonged in babies apparently otherwise normal.

It would seem possible or even probable that this phenomenon is intimately related, either as a result of, or as part of, the process of icterus neonatorum. This process occurs, and disappears in about 50 per cent. of cases at the same time as the decrease in the coagulability is manifest, and its cause has never been satisfactorily explained.

It is obvious that something is lacking in the blood of these infants which is essential to normal blood coagulation and which predisposes to these hemorrhages. Whatever this substance or these substances are, they are present in excess in normal adult blood and are not dependent on the calcium content of the donor's blood, for in these experiments the injected blood contained its calcium supposedly in the form of the insoluble calcium citrate. It is more likely, therefore, that some of the other constituents of the blood entering into the coagulation are deficient, such as the thrombokinase or prothrombin, or that some substance in the blood, such as bile, interferes with the normal activity of the coagulation ferments.

#### CONCLUSIONS

1. Blood transfusion by the citrate method is a specific for the treatment of the hemorrhages of the new-born.
2. Peripheral veins, and especially the external jugular veins, are well adapted for this procedure if the proper instruments and technic are applied.
3. This method is safer than the injection of blood into the longitudinal sinus, and is not too technically difficult for the average physician.
4. The recovery of a patient with severe icterus neonatorum suggests the use of this procedure in this condition.

3. Rodda, F. C. Determining Coagulation Time of Blood in New-Born, *Am. J. Dis. Child.* **19**: 268 (April) 1920.

**Cowpox in 1796.**—In the month of May, 1796, the cowpox broke out at Mr. Baker's, a farmer who lives near this place. The disease was communicated by means of a cow which was purchased in an infected state at a neighboring fair, and not one of the farmer's cows, consisting of thirty, which was at that time milked escaped the contagion. The family consisted of a man servant, two dairy maids and a servant boy; who, with the farmer himself, were twice a day employed in milking the cattle. The whole of this family except Sarah Wynne, one of the dairy maids, had gone through the smallpox. The consequence was that the farmer and the servant boy escaped the infection of the cowpox entirely, and the servant man and one of the maids had each of them nothing more than a sore on one of their fingers, which did not produce the least disorder in the system. But the other dairy maid, Sarah Wynne, who never had the smallpox, did not escape in this easy manner. She caught the complaint from the cows and was effected with it in so violent a degree that she was incapable of doing any work for the space of ten days.—Edward Jenner: *An Inquiry into the Causes and Effects of the Variolae Vaccinae, a Disease Discovered in Some of the Western Counties of England, particularly Gloucestershire, and Known by the name of the Cowpox* (1798).



# CHANGES IN THE TEMPORAL BONES IN EXPERIMENTAL RICKETS

THEIR RELATION TO OTOSCLEROSIS \*

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CHICAGO

In a previous report by one of us,<sup>1</sup> attention was called to the possible relation of otosclerosis to rickets or to the deficiency disease of which rickets is a common manifestation. The purpose of this second report is twofold: (1) to determine the pathologic changes within the temporal bone, particularly in parts most intimately associated with the function of hearing, in experimentally produced conditions having a fundamental resemblance to rickets, and (2) to establish an analogy between these changes and those found in that important and prevalent progressive type of deafness named "otosclerosis," thus attempting to offer experimental evidence as to its cause, i. e., that it is a manifestation of a deficiency disease.

Until 1902, Moos and Steinbrügge, according to Politzer,<sup>2</sup> were the only two who had minutely investigated the changes in the labyrinth of rickets. Necropsy of a dumb idiot, deaf since birth, who had general hyperostosis of the cranium, disclosed these changes: hyperostoses on the inner tympanic wall; great constriction of the internal auditory canal; ossification of the ligamentum annulare, and a mass of tissue consisting of cartilage cells and fibrous plugs, with a small calcareous deposit, in the capsule of the right cochlea near the recessus hemisphericus. In addition, in the left ear the foot-plate of the stapes was replaced by a bony mass which extended into the osseous substance of the labyrinth capsule. In the right ear, instead of the crura of the stapes, slipper shaped bands were seen, which were ossified only at their external periphery, and between which connective tissue rich in cells was deposited. Since that time, few investigators have called attention to changes in the temporal bone in rickets.

Mayer<sup>3</sup> finds bony degeneration in the cartilage about the oval window, together with the same changes of ossification about the "joint" around the oval win-

dow. Mayer studied the changes in the temporal bone in a 9 months old child with well advanced rickets:

The marrow, blood spaces and adjacent layers of bone stained bright red in the hematoxylin-eosin-stained preparation, and in these red parts appeared very broad osteoid formations (bonelike tissue with deficiency of lime salts) which were sharply differentiated from the deep blue underlying bone. The marrow was distinctly fibrous, and evident spindle-shaped cells and collagen fibrils formed a widely reticulated network in which numerous osteoblasts were seen. Another significant finding was the remains of premature cartilage in the region of the oval window, which was not ossified in the typical manner, but absorbed by the ingrowth of giant cells.

Mayer quotes Pommer and Schmorl, who likewise showed that the newly formed bony tissue remains uncalcified and covered with osteoblasts.

Ziegler, according to Mayer, also called attention to the changes in the temporal bone in rickets and to the fibrous nature of the bone marrow, an "endostitis," in which the newly formed network of bone remained uncalcified and in which the defect was lack of calcification rather than in the formation of cells.

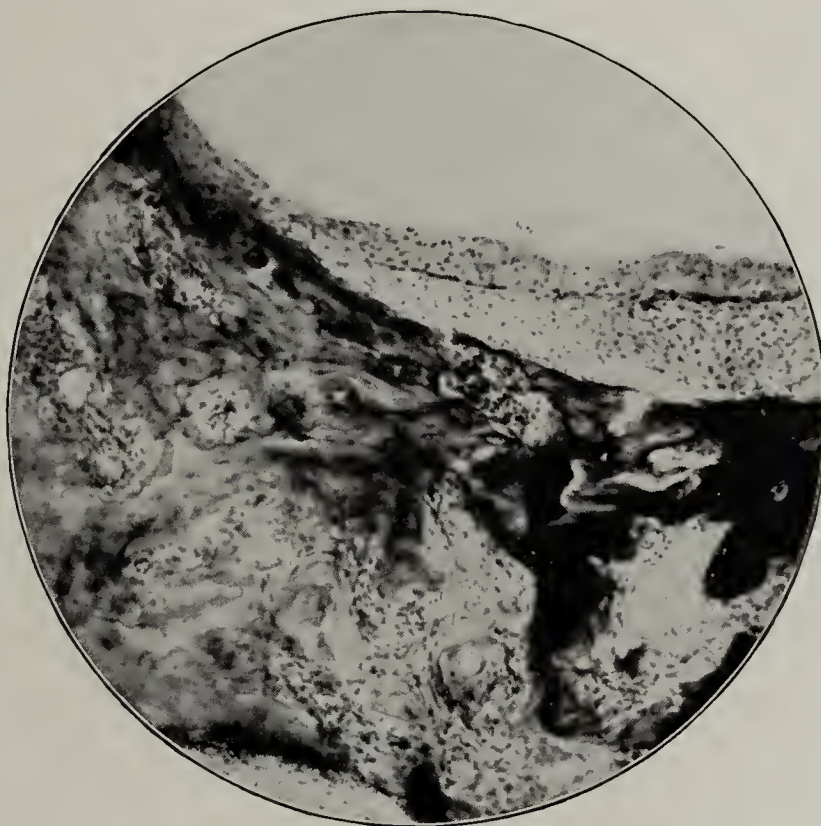


Fig. 1.—Labyrinthine capsule: osteoid tissue, bone only partly calcified, and wide cellular canals; slightly reduced from a photomicrograph of 160 diameters' magnification.

## INTERNAL EAR IN EXPERIMENTAL RICKETS

The experimental work was carried out on young white rats in the manner now widely used in studying the biologic effects of deficient diets on these animals. Each litter of young was divided, part serving as controls and part being subjected to the experimental diet. For one series of animals, the diet was low only in fat-soluble A; for another series, it was low in both vitamin and calcium. We had for study, therefore, material coming from three groups of rats: (1) the normal controls; (2)

rats on a diet deficient only in fat-soluble vitamin, and (3) rats on a diet deficient in both fat-soluble vitamin and calcium. The basal diet was composed of: casein, 18 per cent.; dextrin, 72 per cent.; salt, 4 per cent., and yeast, 6 per cent. This diet, when fat-soluble vitamin was administered in the form of 2 or 3 drops of cod liver oil daily to each control animal, was found to be adequate to bring about normal growth and development. When the fat-soluble A was absent, growth and increase in weight were retarded in the characteristic manner, and xerophthalmia developed. If calcium also was omitted, bone changes became marked.

*Technic.*—At the end of the experimental period, which had been continued for three months, the rats were killed with chloroform. The long bones were removed and fixed in 10 per cent. dilution of liquor formaldehydi for microscopic study. The heads were removed, the skin, soft parts and lower jaws dissected away, the top of the skull and brain removed, and the rest of the head fixed in the 10 per cent. liquor

\* From the Nelson Morris Memorial Institute for Medical Research of the Michael Reese Hospital.

1. Kauffman, A. B.: Deficiency Diseases of the Ear, Nose and Throat, 1, Otosclerosis, 2, Hyperplastic Ethmoiditis, Laryngoscope 32: 50 (Jan.) 1922.

2. Politzer, A.: Diseases of the Ear, Philadelphia, Lea Bros. & Febiger, 1903.

3. Mayer, O.: Untersuchungen über die Otosklerose, Leipzig, Alfred Hölder, 1917.



formaldehydi. After fixation, the bones were decalcified in 5 per cent. nitric acid in the 10 per cent. liquor formaldehydi, washed in water, dehydrated in alcohol, and embedded in celloidin. The base of each skull was cut into transverse serial sections, each tenth section being stained and mounted. Mayer's acid hemalum and aqueous eosin were used as routine stains.

In the decalcification of the bones, differences in calcium content were already evident in the different series of rats. The bones of those animals which had been maintained on a diet low in both fat-soluble A and calcium were completely decalcified within a very short while, six hours usually being sufficient. The bones from rats which had been maintained on a diet low only in fat-soluble vitamin required longer action of the decalcifying fluid, usually over night, whereas the normal controls required a still more protracted action of the decalcifying agent.

In the microscopic examination the attempt was made to compare similar regions and levels of the auditory apparatus in the three series of rats. In each series the foot-plate of the stapes formed the most convenient landmark for orientation.

*Normal Rats.*—In the series of normal controls there were no bony abnormalities to describe. The external auditory canals of some of the animals of this series contained dense collections of polymorphonuclear leukocytes, without, however, any evidences of involvement of the middle ear or of the bones surrounding the middle and internal ear. A similar condition was also present with about equal frequency in the animals of the two experimental series.

#### *Rats on Low Vitamin and Low Calcium Diet.*

The changes noted in the animals of the series on a diet low in both vitamin and calcium are described first because they were most marked and most widespread. Throughout all the bones of the base of the skull there are present the evidences of disturbed bone formation which have been described so completely for the long bones by others in experimental rickets of rats (Fig. 1). Completely calcified bone is small in amount. The greater portion of the bone is composed of uncalcified osteoid tissue, which has, in general, the normal trabeculated arrangement; but the trabeculae are somewhat thicker than those of the normal bone of the control series. The osteoid tissue has a faintly fibrillated appearance, and its nuclei are larger and richer in fluid than those of the normal bone. Where bone marrow is present, it is hyperplastic, cellular, free of fat, and usually rich in red blood corpuscles; moderate numbers of myeloplaxes are present in the marrow. Cartilage is absent, except about the annular ligament of the foot-plate of the stapes and in the ventral portions of

the occipital and sphenoid bones; the cartilage about the annular ligament shows certain changes to be described later. The haversian canals are wide, and are filled with a tissue rich in young, spindle connective tissue cells, which surround a dilated, thin walled, engorged blood vessel in each canal. Osteoclasts are not seen in any of the sections. In one animal of this series, osteoblasts are numerous, forming a distinct layer on the surface of the osteoid trabeculae; in other animals of the series they are present in fewer numbers.

*Osseous Changes In and About the Auditory Apparatus:* The changes described above as present diffusely in the bones of the base of the skull are as marked in the petrous portion of the temporal bone as elsewhere. The labyrinthine capsule in one animal is readily distinguished from the surrounding bone by its thinner, denser lamellae of osteoid tissue, by the absence of marrow and by the less numerous canals. The capsule contains more calcium than the surrounding bone, but, like the latter, is incompletely calcified. In the other

rats of this series the bone immediately about the cochlea and labyrinth (Fig. 1) cannot be distinguished from that farther away, the entire petrous bone being soft and spongy, with numerous wide, cellular, vascularized spaces.

The stapes, just above its foot-plate, contains in every specimen a central area of cellular tissue (Fig. 2). The foot-plate has a somewhat greater degree of curvature than in the normal animals. In one the bending is quite marked, the foot-plate bulging into the cisterna perilymphatica vestibuli (Fig. 3). In another animal two slight projections extend into the vestibular cavity from the margins of the foot-plate, the middle portion of the plate being bowed outward into the middle ear cavity (Fig. 4). This condition is suggestive of hyperostosis, but

has probably been brought about by the outward bending of the central part of the foot-plate.

The cartilage of the oval window on both sides of the annular ligament is definitely abnormal (Figs. 2 and 4). The cartilaginous zone is increased in width, and its margin next to the bone is irregular. The cartilage cells are less regularly arranged than normal, and those nearest the annular ligament appear younger than the rest of the cells in that the nuclei are larger and less condensed. Capsules enclosing two cells each are more numerous than in the controls. Irregular calcification of the cartilage, especially of the petrous side, is apparent; deeply blue stained projections of cartilaginous matrix may extend almost to the free margin of the annular ligament (Fig. 2). At the anterior margin of the oval window the changes in the cartilage have led to almost complete disappearance of the annular ligament (Figs. 2, 3 and 4). The latter,

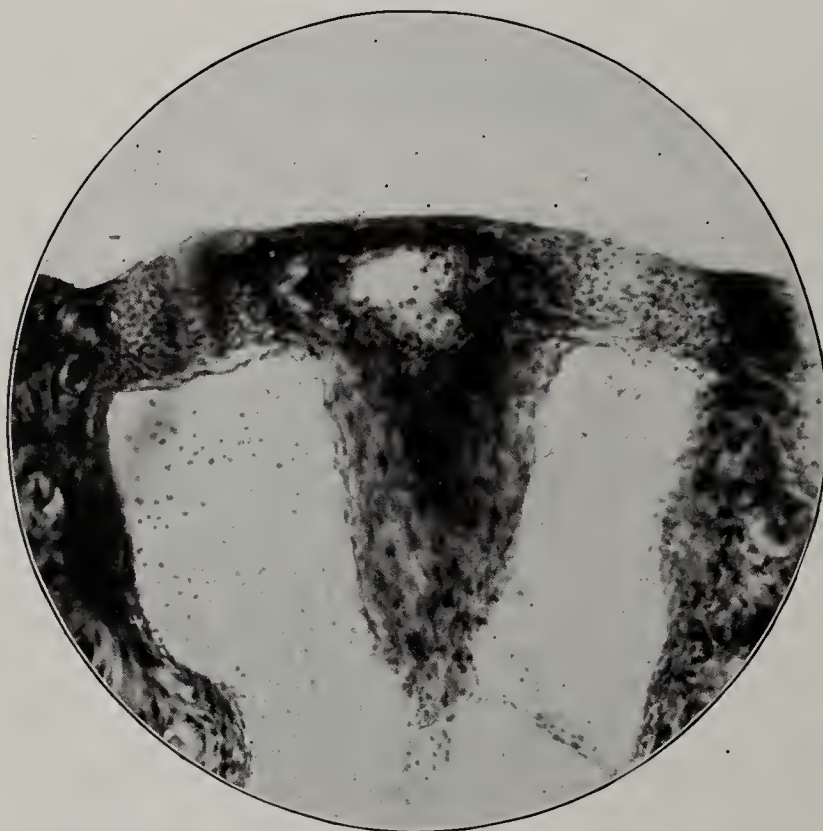


Fig. 2.—Foot-plate of the stapes, with a central cellular area: The annular ligament on the right, which is the anterior margin of the oval window, is indistinct and the line of calcification is irregular; on the left, an area of calcified cartilage extends almost to the annular ligament; slightly reduced from a photomicrograph of 160 diameters' magnification.



instead of being a very sharply defined band of transversely fibrillated tissue between two zones of cartilage, is indistinct, being represented by only a few fibrils, which run from the marginal cartilage to that of the stapedial foot-plate. The free margins of the two cartilaginous zones are very indefinite and irregular, and in places the two zones appear to be fused and to replace the annular ligament completely as the result of proliferation of cartilage cells (Fig. 5). The changes in and about the annular ligament and the foot-plate are present in all the animals of the low calcium series, five in number, which were subjected to detailed microscopic study. In all the animals the changes in the osseous tissue are marked and widespread. It is not possible to detect any greater proneness to involvement on the part of any particular portion of the bony auditory apparatus, but the cartilage of the anterior margin of the oval window is uniformly more severely involved than that of the posterior margin.

**Changes in the Auditory Soft Tissues:** In the normal animals the labyrinth is lined by a fairly thick layer of tissue which has the structure of neuroglia or neuro-epithelium. This is composed of rather widely separated, faintly outlined cell bodies, each with a small, round, deeply stained nucleus about the size of that of a lymphocyte. These cells lie in a very finely fibrillated ground-substance, the fibrils interlacing with one another in all directions. The layer of lining cellular tissue is traversed by a few widely separated capillaries. In the animals of the low calcium series, the layer of tissue which lines the labyrinth is of normal thickness, but contains a larger number of young spindle nuclei (Fig. 1). The latter are usually most numerous nearest the bony wall or about the walls of the capillaries; the cells to which these nuclei belong appear to have been derived from the small amount of stroma which normally supports the capillaries. The ground-substance of the lining tissue appears more coarsely fibrillated, somewhat denser, and slightly more deeply stained than in the normal animals. The cochlear nerve contains a few small round cells with deeply stained nuclei, apparently lymphocytes. In the spiral ganglion, young spindle nuclei are slightly increased in number in one specimen. In general, it may be said that changes in the auditory nervous tissues are slight; such as are noted appear to be secondary to the nutritional disturbance of the more markedly involved bone or to the abnormal general metabolism.

**Animals on a Diet Low in Fat-Soluble Vitamin Only.**—In the animals which were kept on a ration low only in fat-soluble A, osseous changes, both immediately about the auditory apparatus and at a distance from the latter, are much less marked than the changes which have been described above. The bone is composed of

dense, hyaline, deeply eosin-stained, fibrillated trabeculae which are usually centrally calcified. The haversian canals contain only small amounts of cellular tissue; the marrow present is moderately cellular. In this series of animals the structure of the bone approaches very closely that of the normal controls. The animals of this series used for microscopic study had been treated with cod liver oil and had recovered from their xerophthalmia and retarded gain in weight. The slighter degree of involvement in this series, as compared with the low calcium series, might be considered evidence of recovery from osseous disturbances under the influence of cod liver oil. We do not believe, however, that the bones were ever so severely or so diffusely involved in the animals which had been on a diet low only in fat-soluble vitamin as in those which had been subjected also to a low calcium ration.

The changes noted in the bones of the base of the skull in the two experimental series of rats can be closely correlated with those present in the long bones.

In the animals which had been maintained on a diet low in both calcium and vitamin, the long bones give evidence of disturbed calcification as marked as that present in the bones of the skull. An excessive amount of osteoid tissue is present, calcification is deficient, the line of cartilage between diaphysis and epiphysis is irregular and partly calcified, and the bone marrow is hyperplastic and cellular. In the series whose food was deficient only in fat-soluble vitamin, changes are much less marked, and the long bones approach the normal in structure.

**Clinical Application.**—It is seen, therefore, that in rats fed on diets low in content of fat-soluble A and calcium, there were produced pathologic conditions in the temporal



Fig. 3.—Foot-plate of the stapes, bent inward into the vestibular cavity: The annular ligament at the right (anterior margin of the oval window) is indistinct; slightly reduced from a photomicrograph of 160 diameters' magnification.

bone having a fundamental resemblance to the other bony skeletal changes in rickets. These changes, definite and well marked, are present in structures vital for perfect hearing. The bowing of the foot-plate of the stapes (suggestive of the yielding of soft bone to external pressure); the proliferative changes in the region of the anterior margin of the oval window; the involvement of the annular ligament, that may, in the process of healing, go on to at least partial ankylosis; the replacement of the normal, dense, nonvascular bone of the labyrinth capsule and coils of the cochlea by vascular spongy bone; the proliferative changes in the auditory nervous tissues—these alterations are certainly sufficient to warrant the assumption that corresponding changes even less marked in the human being would produce impairment of hearing to a varying degree. It is interesting here to ask whether the change in the position of the head, observed in some of the animals fed on these deficient diets, may not have been due to labyrinthine involvement.



We feel justified, therefore, in calling attention to several points hitherto unrecognized both by pediatricians and workers in the problem of rickets, and also by the otologist: that changes in the temporal bone in rickets are important ones since they are concerned with structures essential to the function of hearing; and, secondly, that with such changes there may be a type of deafness either initiated very early in life or remaining latent until the healing process is complete, that has for its etiologic basis dietary deficiencies. This may help to throw some light on the vast number of impaired hearing cases found in children and not ascribable in their entirety to any of the entities in the present-day classification of deafness.

#### OTOSCLEROSIS A DEFICIENCY DISEASE

Attention was called by one of us<sup>1</sup> to the possibility that otosclerosis is a deficiency disease, that it is a nutritional disorder having for its most important etiologic factor a vitamin deficiency of fat-soluble A, so that it was termed at that time a latent "adult rickets." There is scarcely any chronic disease which shows more quantitative variations than rickets, changes from a clear-cut disorder going down to a vanishing point which needs the greatest care in order to establish its existence. Further to establish this assumption, we shall make an effort to show that the experimentally produced pathologic changes in the internal ear of rats, following dietary deficiencies, can rightfully be considered precursors of the clinical and pathologic entity known as otosclerosis.

The term "otosclerosis" has been accepted by otologists since the work of Politzer,<sup>2</sup> in 1893, as indicating a definite entity. It has been applied to that group of cases showing a chronic progressive deafness (usually associated with tinnitus aurium) in which, independently of intercurrent disease of the tympanum, the bony capsule surrounding the labyrinth is the seat of a chronic nonsuppurative disease. Although von Tröltsch<sup>4</sup> was the first to suggest, on the basis of clinical observations, that this condition be given a separate place in the category of diseases of the ear, it was Politzer who clearly defined the condition, introduced the term, and demonstrated its character by microscopic study as a primary pathologic change of the capsule of the labyrinth. Many observers attempted to show an analogy between this condition and other pathologic states in which other bones of the body were affected, particularly rickets, osteomalacia and arthritis. Beck,<sup>5</sup> in 1915, first called attention to the

fact that in otosclerosis there is evidence of calcium deficiency in the rest of the bones of the body, especially in the larger and long bones, as determined by roentgenograms. Politzer believed that the form of progressive deafness which runs its course from the very beginning without any catarrhal symptoms must be regarded as a special disease of the organ of hearing. Unfortunately, however, to this time we are no nearer to knowledge of its cause than we were when Politzer, Siebenmann, Katz, Habermann and other European otologists first called our attention to the condition, and as a result, there has been offered no form of treatment of benefit to this prevalent malady, which constitutes more than 7 per cent. of all ear cases.<sup>6</sup>

*Pathology.*—Most authors are agreed as to the pathologic change itself. This knowledge has been gained by the microscopic examination of such specimens as have been available. There is osteoporosis of the bone of the labyrinth, in consequence of which the dense petrous bone is replaced in certain areas by vascular, spongy

bone, especially in the region of the anterior bony margin of the oval window. In its early stages, the process is a true new formation of osteoid tissue and not a transformation of old bone. It is characterized by the large size of the osseous spaces and haversian canals; the spaces are filled with connective tissue rich in cells, which surround large and small blood vessels. Osteoclasts are not seen at this stage. Later on, the diseased areas become sclerosed by the deposition of new bone in the walls of the spaces. There is usually a sharp line of demarcation from the uninvolved portions. In the early stages, the nerve structures are normal, as a rule.

All authors have taken it for granted that the change is superinduced on

previously normal bone structure, with which hypothesis we are at variance.

It must be recognized, as shown by Kerrison,<sup>7</sup> that several varieties of the disease may exist, varying in mechanical results according to the region involved. In some cases the region about the oval window is the chief seat of abnormality. In others, there may be foci of change in widely separated portions of the petrous bone, in parts of the labyrinthine capsule not closely related to structures essential to cochlear function. In still other cases, the distribution of the pathologic process is such as to involve directly cochlear structures, with functional reactions characteristic of cochlear nerve involvement.

In the experimental rats studied by us there were present changes in the temporal bone that are similar

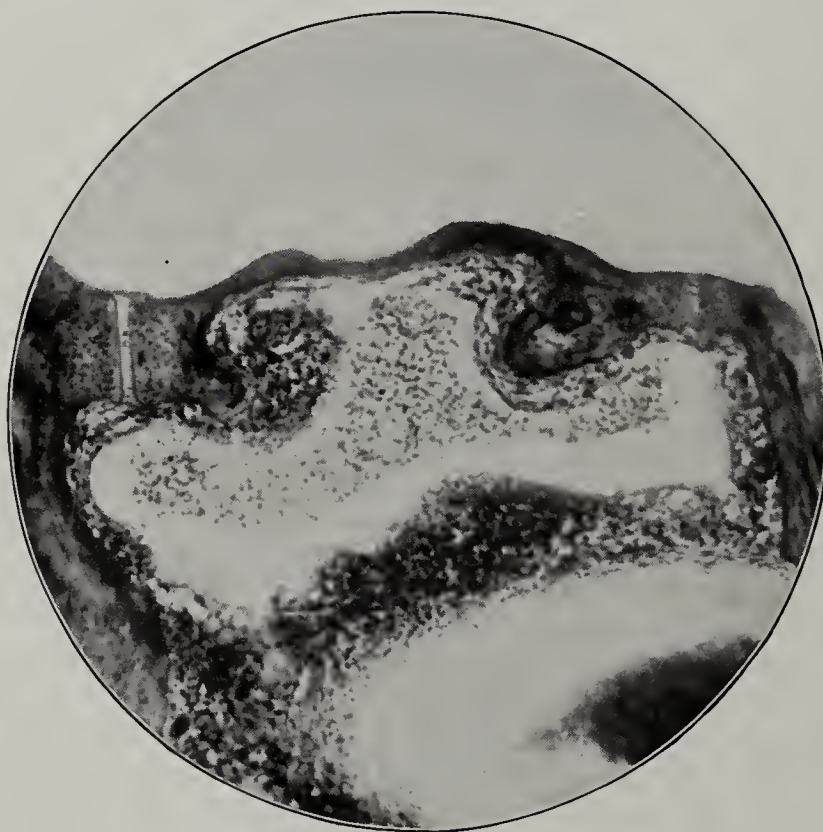


Fig. 4.—Central part of the foot-plate of the stapes bent outward into the cavity of the middle ear, the marginal portions projecting into the vestibular cavity: The annular ligament on the right (anterior margin of the oval window) is indistinct and there is irregularity of calcification; slightly reduced from a photomicrograph of 155 diameters' magnification.

4. Von Tröltsch, A.: Die Krankheiten des Ohres, Ed. 2, Wurzberg, Stobel, 1862.

5. Beck, J. C.: Roentgenographic Diagnosis in Otosclerosis, Laryngoscope 25: 154, 1915.

6. Bezold, F. R., and Siebenmann, F. R.: Text Book of Otology, translated by Jacques Holinger, Chicago, E. H. Colegrove, 1908.

7. Kerrison, P. D.: Diseases of the Ear, Philadelphia, J. B. Lippincott Company, 1921.



in most respects to the foregoing findings. We have produced osteoid changes in the capsule of the labyrinth and coils of the cochlea, together with changes involving the stapediostibular region.

It must be noted that these changes have been produced more or less acutely and extensively, in contradistinction to the more chronic and localized process that takes place in otosclerosis. However, the anatomic changes which accompany the healing of experimental rat rickets have been thoroughly studied by other investigators; and so far as the changes in the temporal bone are in exact accord with the changes in the long bones, we feel justified in assuming that similar healing processes would take place here, and give a picture identical with advanced otosclerosis, an involvement like that produced experimentally being a precursor of the latter condition. It has been shown that the relative proportions of the dietary components (vitamins and inorganic salts) determine whether the animal will develop bones which are normal or pathologic, and in the latter case whether the animals will have rickets, osteoporosis or osteosclerosis.<sup>8</sup>

#### SUMMARY

In young rats which have been maintained on a diet low in fat-soluble vitamin A and in calcium, there occur abnormalities of the osseous capsule of the internal ear which are identical with those changes in the long bones which are characteristic of experimental rickets.

These alterations, since they occur in structures concerned in the function of hearing, may result in an impairment of hearing.

The analogies between the changes in the temporal bones in experimental rickets and the lesions which have been described in otosclerosis suggest that the latter condition may be a late result of rickets or a manifestation of a dietary deficiency still existent during adult life.

8. McCollum, E. V., and Others: Studies on Experimental Rickets, XXII, Conditions Which Must Be Fulfilled in Preparing Animals for Testing the Antirachitic Effect of Individual Foodstuffs, Bull. Johns Hopkins Hosp. 33: 296 (Aug.) 1922.

**Reproduction in Tsetse Flies.**—Tsetse flies differ from all others of their family in their remarkable manner of reproduction. They do not lay eggs, but the single developing larva is retained within the body, being nourished by special glands on the walls of the uterus. The larva is full grown before it is born, and occupies practically the entire swollen abdomen of the mother. In *Glossina palpalis* the first larva is born three or four weeks after mating, and another is born every nine or ten days, provided the temperature is around 75 or 80 F. In one captive fly, eight larvae were produced in thirteen weeks, and only one egg was found left in the body. Pregnant flies often abort when disturbed, and cases are known in which the larvae pupated within the abdomen of the mother, to the destruction of both of them.—Chandler: Animal Parasites and Human Disease.

## NONSURGICAL REMOVAL OF PARAFFIN IN THE URINARY BLADDER

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The literature concerning foreign bodies in the bladder describes a large variety of articles. These have either been introduced from without by the patient or the medical attendant, or have ulcerated their way into the bladder from a neighboring viscus. Among the articles may be mentioned hairpins, straws, quills, gum, broken catheters or filiforms, nails, closed safety-pins, gauze, sponges and bullets. Rarely, nonabsorbable ligature material may erode its way through the bladder wall, following an operation on nearby pelvic organs. The silk, silkworm, or silver wire may then be seen lying free in the bladder or adherent to the mucous membrane, usually still knotted. Luys<sup>1</sup> has illustrated such an occurrence.

Occasionally the urologist is confronted with a case of wax or paraffin in the urinary bladder. The method and the reason for introducing the object are well known. The patient usually fashions a bougie out of wax or paraffin, and then, during the self-imposed urethral manipulations, the object slips inward beyond reach. In the endeavor to recover it, the bougie is sometimes forced back into the bladder, and we then have the clinical condition of foreign body to deal with.

Many ingenious instruments have been devised for removing objects from the bladder. The simple hollow tube known as the Kelly cystoscope is perhaps the easiest to use in

the female. These tubes are now made with a distal light on a light carrier, and it is no longer necessary to wear a head-mirror. Alligator forceps are introduced through the tube, grasping and removing the foreign body. Young's rongeur cystoscope, Young's cystoscope lithotrite, the Brown-Buerger operating cystoscope, and the Bigelow lithotrite all are of utmost value in attacking this problem.

The case here submitted is one in which gasoline was injected into the bladder to dissolve a wax crayon which the patient had introduced. This method of removal, while new, is not original, having first been recorded by Caples<sup>2</sup> in 1919.

#### REPORT OF CASE

**History.**—E. W., a man, aged 23, was referred, Jan. 16, 1922, by Drs. T. J. Goundry and W. J. Gibson, with the complaint that he had a crayon pencil in the bladder. The past

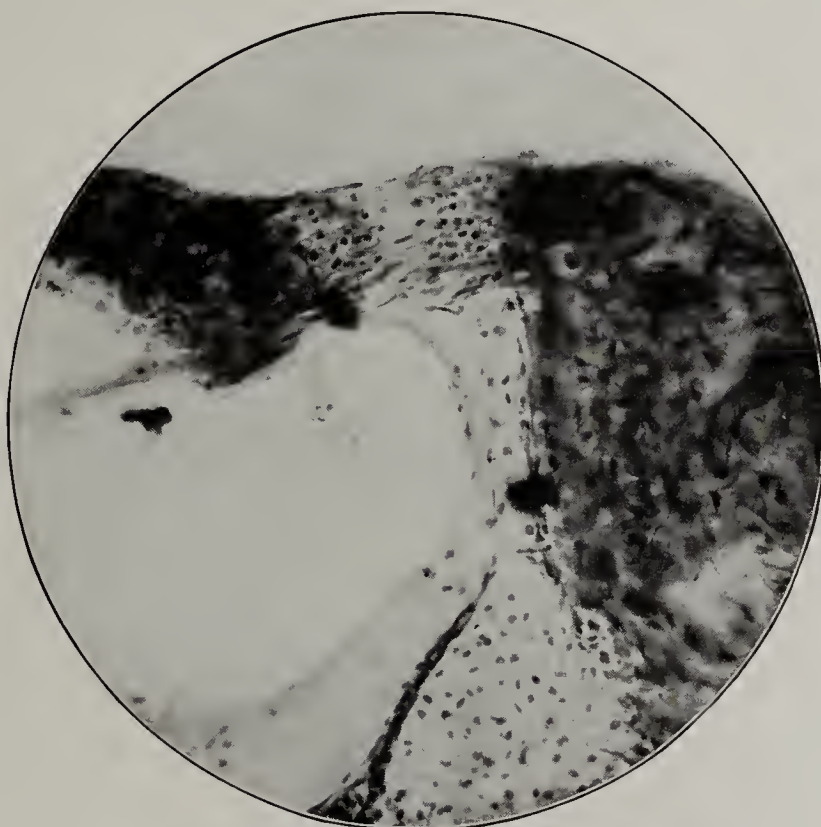


Fig. 5.—Anterior margin of the oval window: The annular ligament is almost completely replaced by cartilage; slightly reduced from a photomicrograph of 275 diameters' magnification.

1. Luys, Georges: Cystoscopy and Urethroscopy, St. Louis, C. V. Mosby Company, 1918, p. 189.

2. Caples, B. H.: Foreign Body in the Urinary Bladder, Surg., Gynec. & Obst. 29: 315 (Sept.) 1919.



history was negative. He had always been strong and healthy, and had never consulted a physician before. The present illness began four days before his first visit, while the patient was testing out the caliber of his urethra with a commercial colored crayon, such as children use in school. Within the first twenty-four hours he began to pass gross blood and an occasional small clot. The bleeding was terminal, and consisted of about three drops. Frequency became progressively worse, until when seen he was voiding every half hour, accompanied by pain in the glandular portion of the urethra, occasionally referred to the rectum. There was no renal colic, and no pain above the level of the bladder, anteriorly or posteriorly. Nocturnal frequency was the same as during the day, and the patient stated that he did not pass any particles of the crayon.

**Examination.**—Urine voided into two glasses was opaque from presence of pus and blood. The external genitalia, the contents of the scrotum, the inguinal rings and the rectum were normal. Cysto-urethroscopy, with 4 per cent. solution of procain, was performed. A Brown-Buerger cysto-urethroscope, size 18 French, passed easily and revealed no residual urine. The bladder capacity was 250 c.c. The bladder was washed repeatedly until the solutions became clear. The mucous membrane was injected throughout, red and velvety, but no areas of ulceration were seen. In the bas-fond of the bladder, posterior to the interureteric ridge, were two pieces of red crayon lying crossed like the letter X (Fig. 1). The patient stated that two days before, during the act of voiding, he felt a sudden snap in the bladder, and thought that the crayon had broken. Both ureteral orifices were normal in appearance. They were not catheterized. The vesical outlet and the posterior urethra were inflamed to about the same degree as the bladder.

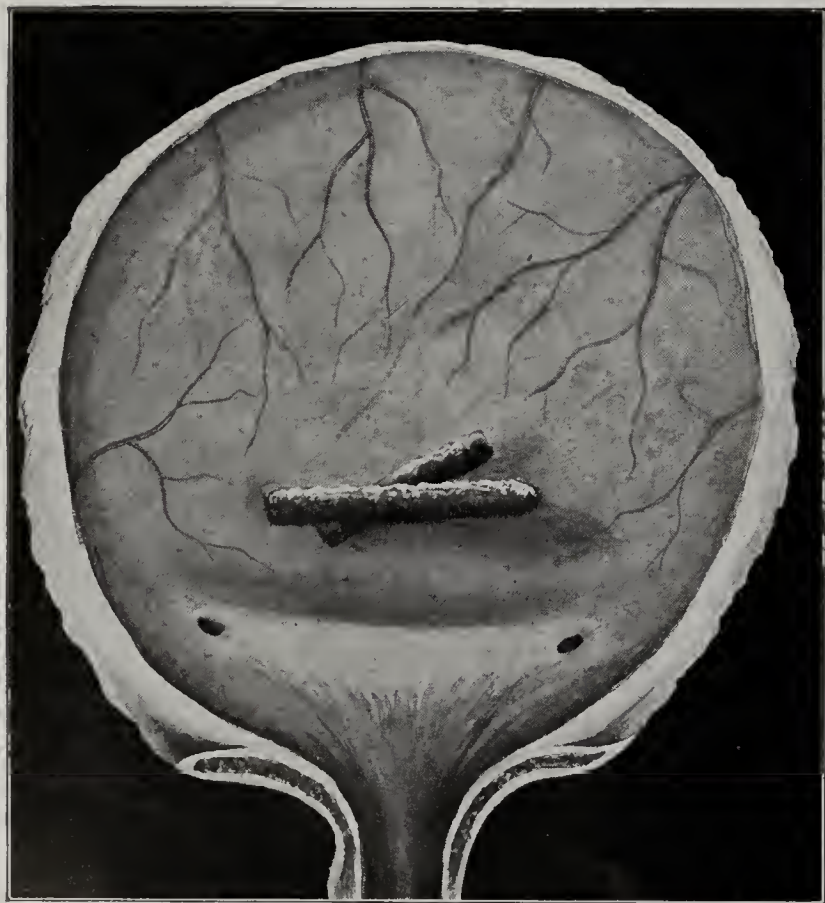


Fig. 1.—Semidiagrammatic view of the two pieces of crayon lying in the bladder, as seen through the cystoscope.

**Treatment and Course.**—The next day, which was the fifth day of the disease, 1 ounce (30 c.c.) of filtered gasoline, 70 proof, and 2 ounces (60 c.c.) of light liquid petrolatum were heated to a temperature of 105 F. and injected into the bladder through a Nélaton catheter. The patient retained this for one hour and forty-five minutes without much discomfort. He then voided 5 ounces (300 c.c.). The gasoline and oil floated to the top of the container, and many red particles of the crayon settled to the bottom. Six hours later the injection was repeated, and was retained for two hours

without discomfort. The patient was up and about, coming to the office for his treatments. On the second day of treatment, the voided urine contained many crumbs and fragments of the crayon. During the act of micturition, while seen in my office, the stream became suddenly interrupted, and the patient could not void. The next moment he passed the large curved fragment seen in Figure 2, and at subsequent voiding the urine changed from red (particles of crayon in suspension) to straw color. Pain in the bladder and urethra was

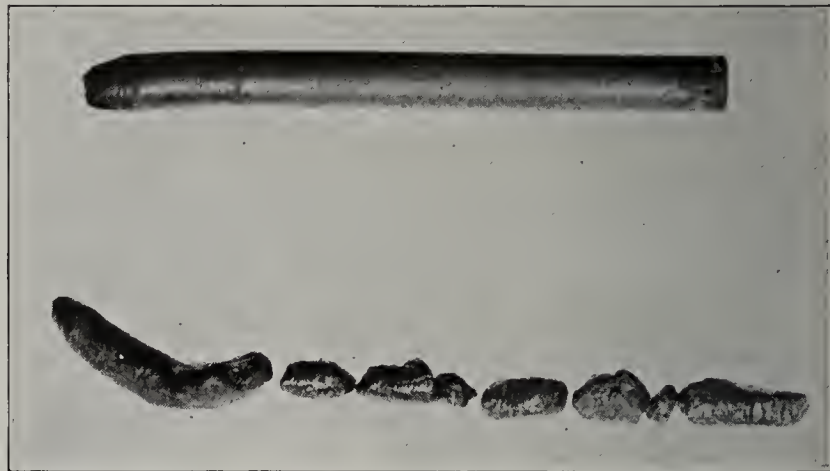


Fig. 2.—Above, crayon similar to the one used by patient; below, some of the larger pieces of the crayon which were voided, about three-fourths the actual size.

much less. The patient felt fine, and wanted to go back to work. No further injections of gasoline were given. The patient was put on hexamethylenamin and told to return in a week. One week after the urine had ceased to contain particles of crayon, the bladder was clear of any foreign material. There was still a moderate amount of cystitis. The third cystoscopy, about two months later, revealed the bladder absolutely normal.

#### COMMENT

If I had not chanced across Caples' article, this patient would probably have been submitted to a suprapubic cystotomy. I saw a similar case during my hospital internship. A young man had fashioned a bougie out of a piece of paraffin candle and passed it on himself. When seen in the bladder through the cystoscope, the paraffin was in a rounded mass and floated. This patient was subjected to suprapubic cystotomy, as Caples' method was then unknown.

It is surprising how well the bladder tolerates the mixture of gasoline and liquid petrolatum, even in the presence of more or less acute cystitis, which is usually the case. This patient retained his first injection for one and three-quarters hours, and some of the others as high as five hours. He had a total of six injections of gasoline and liquid petrolatum.

Experiments as to the solubility of various brands of wax or paraffin, colored crayons and Christmas candles brought out the fact that most of them will dissolve in the one-third gasoline, two-thirds liquid petrolatum mixture, in about two hours at body temperature. If the container is agitated by shaking, they dissolve sooner.

Some of the colored crayons do not dissolve at all, but the cohesive substance which holds together the particles dissolves and the crayon crumbles. The crayon in this case was  $3\frac{1}{2}$  inches long, and had a caliber of 24 French when the paper wrapper was removed. If we are dealing with the type of crayon that goes into complete solution, the paraffin can be recovered by chilling the urine. This causes the paraffin to be precipitated out in its solid state, and the paraffin can then be collected and the total from the different voidings measured.



This case is reported so as to call attention to the fact that it is not necessary to perform a suprapubic cystotomy or perineal section to remove wax or paraffin from the bladder. The crayon could have been removed with Young's cystoscopic rongeur, but this would have necessitated the withdrawal and the reintroduction of the cystoscope many times, biting off a small piece each time, on account of the object's friability. Since the rongeur is size 30 French, this is far from a pleasant procedure for the patient. To the general practitioner, when there is a history of wax or paraffin in the bladder, it is not even necessary to submit the patient to instrumentation, it being such a simple matter to inject a little gasoline and liquid petrolatum.

SUMMARY

A patient who had passed a colored crayon into the bladder was given six injections of gasoline and liquid petrolatum, which dissolved the crayon.

35 Chestnut Street.

A STUDY OF LIGHT WAVES IN THEIR  
RELATION TO RICKETS\*

ALFRED F. HESS, M.D.

AND

MILDRED WEINSTOCK

NEW YORK

Recent investigation has established the fact that white rats can be regularly protected against rickets by means of sunlight or artificial rays produced by the mercury vapor quartz or the carbon arc lamp.<sup>1</sup> All these sources of light emit not only visible radiation, but also ultraviolet rays of various wave lengths. In a previous paper, Hess, Unger and Pappenheimer drew attention to the fact that rats which were confined in an enclosure of ordinary window glass (3 mm. thick) failed to be protected by sunlight, as by this procedure the effective rays were filtered out of the spectrum. In a subsequent paper,<sup>2</sup> it was shown that a filter of ordinary window glass (Corning), which transmitted ultraviolet waves as short as 334 millimicrons, intercepted the effective rays from the mercury vapor lamp, indicating that not all ultraviolet rays possess this property, but that it is associated only with waves shorter than 334 millimicrons. The proposition was advanced that the longest waves of value in relation to rickets lie in the neighborhood of 300 millimicrons. Recently, Pacini,<sup>3</sup> in a consideration of this subject, has expressed the same opinion. Shipley<sup>4</sup> believes that very short ultraviolet rays, those about 210 millimicrons in length, probably have the greatest antirachitic effect.

In the present study we have attempted a closer analysis of the spectrum in order to ascertain more precisely which waves exert this remarkable protective action. A partial abstract of this work will be found

elsewhere.<sup>5</sup> The method of procedure has been to interpose selected filters between the source of light and the experimental animals, and to note whether irradiation prevented the development of rickets. The rats were 4 weeks old at the outset, and were fed the

TABLE 1.—FILTRATION OF RAYS (MERCURY VAPOR QUARTZ LAMP)

Rat No.	Weights, Gm.	Filter	Exposure		Lower Limit of Spectra Dis- of Filters, Milli- microns	Rickets	
			Time, Min.	tance, In.		Roent- geno- gram	Micro- scopic Exami- nation
949	38-40	G 38 H	10	12	475	Moderate	Marked
950	40-40	4.6 mm.				Moderate	Marked
951	38-40					Moderate	Marked
1063	50-64	G 38 H	30	9	475	Moderate	Moderate
1064	40-52	4.6 mm.				Moderate	Moderate
1065	40-40					Moderate	Slight
1066	44-50					Moderate	Moderate
1204	50-50	G 38 H	60	9	475	Moderate	Moderate
1205	40-50	4.6 mm.				Moderate	Moderate
1206	50-44					Moderate	Slight
1207	40-44					Moderate	Slight
1302	70-100	Window glass	15	36	334	Marked	Marked
1303	50-80	2.6 mm.				Marked	Marked
1304	50-60					Marked	Marked
1305	54-60					Marked	Marked
1493	50-58	Window glass	30	9	334	Marked	Marked
1494	32-44	2.6 mm.				Marked	(slight calci- fication)
1488	42-50	Window glass	60	9	334	Marked	Marked
1489	40-44	2.6 mm.				Moderate	Marked
1490	38-40					Moderate	Marked
1491	38-50					Marked	Marked
952	30-34	G 586 A	10	12	302	Moderate	Extreme
953	40-40	4.3 mm.				Moderate	Marked
954	20-28					Moderate	Extreme
1067	40-40	G 586 A	30	9	302	Very slight	Minimal
1068	40-52	4.3 mm.				Slight	Minimal
1069	40-42					Slight	Minimal
1070	42-42					Neg. (?)	Almost neg.
1200	50-50	G 586 A	60	9	302	Neg. (?)	Negative
1201	54-40	4.3 mm.				Neg. (?)	Slight
1202	50-50					Neg. (?)	Negative
1203	50-40					Neg. (?)	Negative
1512	44-50	Pyrex	3	18	289 (280?)	Slight	Slight
1513	44-50	0.8 mm.				Negative	Slight
1514	40-44					Slight (?)	Slight
1515	40-48					Slight (?)	Slight
1516	40-48	Pyrex	6	18	289 (280?)	Negative	No R. (os- teoporosis)
1517	30-36	0.8 mm.				Negative	Very slight R.
1518	40-50					Negative	No R. (os- teoporosis)
1519	46-50					Negative	No R.
1330	54-54	Pyrex	15	18	289 (280?)	Negative	No R.
1331	40-40	0.8 mm.				Negative	No R.
1332	54-44					Negative	No R.
1333	40-40					Negative	No R.
1334	54-60	G 86 B	15	18	302	Marked	Marked
1335	48-60	4.2 mm.				Marked	Marked
1336	40-50					Marked	Marked
1337	50-56					Marked	Marked
1500	30-30	G 86 B	30	9	302	Moderate	Marked
1501	32-30	4.2 mm.				Moderate	Marked
1502	30-34					Moderate	Marked
1503	30-36					Moderate	Marked
1496	30-34	G 86 B	60	9	302	Moderate	Marked (sl. calcification)
1497	32-34	4.2 mm.				Marked	Marked
1498	30-30					R (?)	Marked
1499	30-30					Moderate	Marked

\* From the Department of Pathology of the Columbia University College of Physicians and Surgeons.

1. Hess, A. F.; Unger, L. J., and Pappenheimer, A. M.: Proc. Soc. Exper. Biol. & Med. **19**: 8, 1921-1922. Shipley, P. G.; Park, E. A.; Powers, G. F.; McCollum, E. V., and Simmonds, Nina: Ibid. **19**: 43, 1921-1922. Powers, G. F.; Park, E. A.; Shipley, P. G.; McCollum, S. V., and Simmonds, Nina: Ibid. **19**: 120, 1921-1922. Hess, A. F.; Unger, L. J., and Pappenheimer, A. M.: Ibid. **19**: 238, 1922.

2. Hess, A. F.: The Influence of Light in the Prevention and Cure of Rickets, Lancet **2**: 367 (Aug. 19) 1922.

3. Pacini, A. J.: M. Herald & Electrotherapist, October, 1922.

4. Shipley, P. G.: Faulty Diet and Its Relation to the Structure of Bone, J. A. M. A. **79**: 1563 (Nov. 4) 1922.

Sherman and Pappenheimer low phosphorus diet. For the most part the source of light was the mercury vapor, air cooled lamp, run at 76 volts. In order to obtain a desired dosage, the lamp was placed at varying distances, and used for varying periods of time, as may be noted in the accompanying tables. The filters

5. Hess, A. F.; Pappenheimer, A. M., and Weinstock, Mildred: Proc. Soc. Exper. Biol. & Med. **20**: 14, 1922.



were of glass, manufactured by the Corning Glass Works, and were of known transmissibility. In every instance the transmission curves of these glasses have been studied by the U. S. Bureau of Standards, and are set forth in their scientific and technologic papers.<sup>6</sup> In regard to the animals, the same procedure was followed as in previous experiments of this series. White rats weighing about 40 gm. were employed; after a twenty-one day period on the experimental diet, they were roentgenographed, and after a total twenty-eight day period they were killed and examined. The interpretation of rickets was based on a microscopic examination of the costochondral junctions.

Table 1 illustrates the results obtained when the source of light was the mercury vapor lamp, and various glass filters were interposed. When rays are employed without filtration, we have found that irradiation for two minutes at a distance of 3 feet suffices to protect white rats under the foregoing experimental conditions. When, however, the diet was amplified by replacing 5 per cent. of the wheat flour with an equal percentage of dried milk, a marked increase in growth was brought about, and greater irradiation was found necessary in order to protect. The first experiment (Table 1) demonstrated a failure to afford protection when filter G 38 H (Noviol C) was employed. This is a yellow filter, which cuts off rays shorter than 475 millimicrons. This failure resulted even when exposures were carried out at a distance of only 9 inches and for a period of sixty minutes. If we regard an exposure of two minutes at 3 feet as a "unit protective dose," then the irradiation in this instance was equivalent to 480 protective units. The next section of this table gives data in relation to a filter of crown window glass which allowed the passage of ultraviolet waves as short as 334 millimicrons. Here, again, 480 units of light were ineffective.

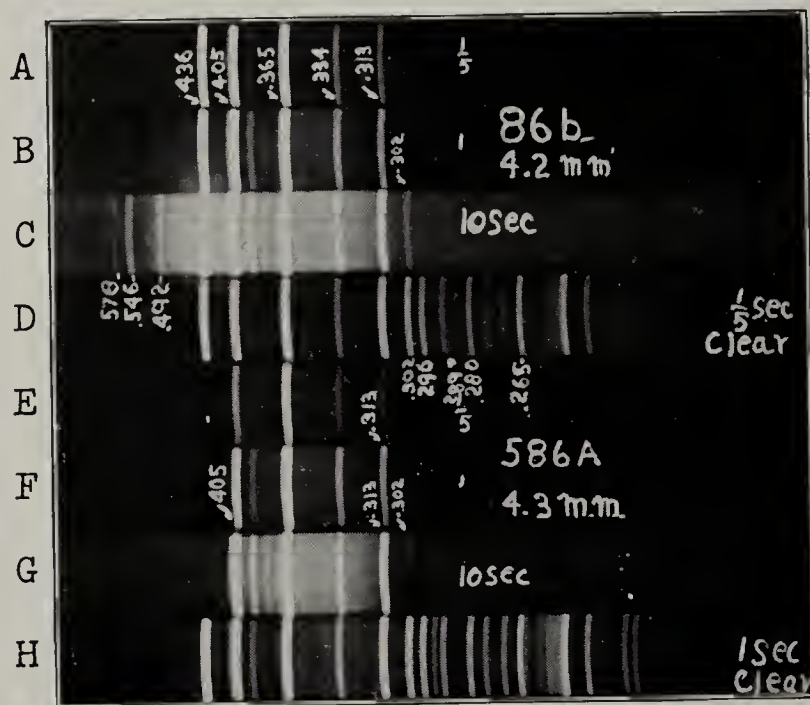
Filter G 586 A, which was employed in the subsequent tests, is a purple glass, and transmits waves as short as 302 millimicrons. It should be borne in mind that the spectrum of the mercury vapor quartz light is not continuous like that of sunlight, or a band spectrum similar to that of the carbon arc light, but is a discontinuous spectrum composed of a number of bright lines of varying intensity. One of the important lines is composed of waves 313 millimicrons and another 302 millimicrons in length. The accompanying spectrogram, which was made with the filter used in this experiment, shows that this glass allows the passage of a considerable amount of 313 millimicron rays and a feeble intensity of 302 millimicron wave lengths. To ascertain the percentage of transmission for glasses of

different thicknesses, we have made use of the chart employed by the U. S. Bureau of Standards for this purpose.<sup>7</sup> When this chart is used, it is found that this filter transmits about 3 per cent. of 313 millimicron waves, and less than 1 per cent. of the 302 millimicron waves. It will be noted (Table 1) that protection failed with ten minutes' irradiation, that it was partial with irradiation of thirty minutes, and almost complete when continued for sixty minutes. It is evident that we may conclude that whereas rays 334 millimicrons in length are ineffective, waves 302 millimicrons in length are able to protect rats from rickets. The data, however, are not adequate; the analysis of the spectrum is not sufficiently precise to warrant a conclusion as to whether the bright line 313 millimicrons contributed to the protection. From the fact, however, that prolonged irradiation was successful, whereas short irradiation proved unsuccessful, it would seem that the most effective wave lengths were those of 302 millimicrons, and that they were supplied in insufficient intensity unless prolonged exposures were employed.

The test with pyrex glass (0.8 mm. thick) gave a result that was to be expected. This filter was markedly permeable to short ultraviolet rays, allowing the passage not only of waves of 302 millimicrons, but also those of 289 and even 280 millimicrons. It is not surprising, therefore, that this filter did not greatly interfere with the protective action of the mercury vapor rays. The fact that several "protective units" were required to bring about the desired result must be ascribed largely to the diminution in intensity as well as to the filtration of wave lengths of curative value.

The last filter used in this series was G 86 B, which is nearly neutral in color. As may be seen from the accompanying spectrogram, the ultraviolet rays transmitted by this filter are strikingly similar to those transmitted by the purple filter (G 586 A), which we have just discussed. This combined spectrogram was made from exposures of the identical filters employed in our tests; the spectra were photographed simultaneously on the same plate. Both transmit 313 millimicron waves in considerable intensity, and 302 millimicron waves in less than 1 per cent.; in the latter region the transmissibility rather favors the G 86 B filter. In spite of this marked similarity, it was found, as will be seen in the table, that the colorless filter (G 86 B) failed to protect under conditions in which the purple filter (G 586 A) was successful.

There is, however, a striking difference in the transmission of these two filters in the field of visible rays. This is evident from a glance at the spectrograms, which show that with the neutral filter (G 86 B) the rays extend much farther to the left in the region of



Comparative spectrograms of mercury vapor radiations through the neutral filter 86 B (4.2 mm.) and the purple filter 586 A (4.3 mm.): A, B, C, one-fifth, one and ten seconds exposures through 86 B; D, H, one-fifth and one second exposure without interposition of any filter; E, F, G, one-fifth, one and ten seconds exposures through 586 A.

6. Scientific Paper 325, Technologic Papers 119 and 148, Bureau of Standards, 1918, 1919 and 1920.

7. Burge, W. E.: Am. J. Physiol. 36: 35, 1914-1915.



the visible than when the purple filter (G 586 A) was used. These spectrograms fail to illustrate this aspect of the question, as they do not register rays longer than about 450 millimicrons, whereas the visible part of the spectrum includes rays 720 millimicrons in length. It was found on examining these two filters by means of

TABLE 2.—CARBON ARC IRRADIATION; CLOTHING MATERIALS

Rat No.	Weights, Gm.	Material	Exposure		Rickets	
			Time, Min.	Distance, Feet	Roentgenogram	Microscopic Examination
1545	42-48	Thin cotton (nainsook)	10	3	Negative	None
1546	40-42				Negative	None
1547	40-50				Negative	None
1548	60-60				Negative	None
1549	40-46	Cotton stocking	10	3	Negative (?)	Slight
1550	28-28				Moderate	Moderate
1551	60-64				Rickets	Moderate
1552	28-26				Rickets	Marked
1659	70-66	Cotton stocking	30	3	Slight	Very slight
1660	60-54				Negative	No definite
1661	58-60				Negative	No definite
1662	66-60				Slight	No definite
1553	40-54	Woolen stocking	10	3	Rickets	Moderate
1554	60-60				Negative (?)	Very slight
1555	50-60				Moderate	Moderate
1556	70-68				Moderate	Moderate
1655	80-70	Woolen stocking	30	3	Slight	No definite
1656	50-40				Negative	Slight
1657	76-70				—	Very slight
1658	44-40				—	Slight

a spectrophotometer that the nearly neutral glass, which failed to allow protection, transmits about 90 per cent. of red rays of 680 millimicron wave length, and about 87 per cent. of yellow rays of 540 millimicron wave length, whereas the purple filter (G 586 A) transmits only 3 per cent. of red, and none of the yellow rays. Furthermore, the neutral filter allows the passage of infra-red waves which are entirely excluded by the purple filter. In view of this marked distinction in transmissibility, it seems probable that the difference in the action of these filters rests in their difference in permeability to long rays—that either the infra-red or visible rays, or both, exert a neutralizing or inhibitory effect on the radiations which protect against rickets. As experiments are under way to test this hypothesis further, we shall postpone a detailed consideration of this interesting aspect of the subject.

A series of experiments was undertaken to test the transmissibility of some clothing materials which are commonly worn by young infants. This seemed worth while in order to gain a conception of the degree to which clothing filters out the protective rays of the sun. As this was the object of the test, the carbon arc lamp, the rays of which more nearly resemble sunlight, was used instead of the mercury vapor lamp. White flame carbons were inserted, and the lamp was placed at a distance of 3 feet; under these conditions, irradiation of about three minutes with 30 amperes suffices to protect white rats. Filters of thin white cotton dress material, and of white cotton stocking, and of wool stocking material were interposed as filters between the animals and the carbon arc lamp. They were placed at a distance of 6 inches from the rats. It was found that the thin cotton material offered but little hindrance to the protective rays. When ten "protective units" of carbon light were given, these rays were able to traverse not only the cotton but even the woolen stocking material. All these materials were white, or

almost white. Another test was devised to ascertain the difference in transmissibility of white and of black material. To this end cotton goods, counting ninety-six by 120 threads to the square inch, and manufactured on the same loom—differing, therefore, merely in color—were employed as filters in the same way as in the previous experiment. Exposures were made of ten and twenty minutes' duration, using the respective materials. As Table 3 shows, the black cotton material (which was dyed with an anilin dye) acted as a more potent filter than the white material. This is in keeping with the accepted opinion that black possesses marked absorptive affinity for ultraviolet rays.

COMMENT

It follows from our experiments that, in order to be of value in rickets, ultraviolet waves must have a wave length not longer than 302 or possibly 313 millimicrons. This renders light that has passed through ordinary window glass of no therapeutic value in this disorder. The shortest waves of sunlight that reach the surface of the earth are about 290 millimicrons, and vary greatly in intensity according to the time of the day and the season of the year. Indeed, when the atmosphere is heavy with moisture, smoke or dust, the shortest of these waves are absorbed. It is evident, therefore, that the range of effective radiations is markedly circumscribed by nature, and further limited by meteorologic conditions. The foregoing experiments serve to emphasize the remarkable specificity of wave lengths of light in relation to rickets. It can be stated with confidence that waves 324 millimicrons in length have little or no value in protecting against rickets, and that waves of 302 millimicrons are of great value in this respect. This signifies that a difference of about thirty millionths of a millimeter in wave length suffices to render ultraviolet light effective or ineffective.

In this connection, attention may be called to some experiments of Burge<sup>7</sup> on the coagulating property of

TABLE 3.—CARBON ARC IRRADIATION—WHITE AND BLACK MATERIAL

Rat No.	Weights, Gm.	Material	Exposure		Rickets	
			Time, Min.	Distance, Feet	Roentgenogram	Microscopic Examination
1390	50-50	White	10	3	Rickets	Marked
1391	44-50				Slight	Moderate
1392	40-50				Slight	Slight
1393	50-50				Slight	Moderate
1618	44-42	White	20	3	Slight	Slight
1619	44-38				Slight	None
1620	50-48				Negative	
1621	50-42				Negative	None
1394	50-52	Black	10	3	Marked	Marked
1395	46-50				Marked	Very marked
1396	54-58				Marked	Very marked
1397	50-52				Marked	Very marked
1622	48-50	Black	20	3	Rickets	Moderate
1623	54-40				Slight	Slight
1624	48-50				Marked	Marked
1625	46-50				Marked	Moderate

light, in which he found that the longest waves able to coagulate egg white were 302 millimicrons in length. The similarity of this result to that described above may be found to have some significance. Looking at the question from the other end of the spectrum, we have been unable to ascertain how short ultraviolet rays may be and still possess prophylactic value in rickets. It



has not been possible to filter out the radiations in the near ultraviolet region (from 400 to 300 millimicrons) and at the same time allow the passage of radiations in the far ultraviolet. It should be borne in mind that the shorter the light waves in this region the more irritating they are, so that it is probable that there is a therapeutic limit also in this direction.

The experiments with clothing material indicate that the rays do not have to impinge directly on the surface of the skin. Clothing must be regarded as other filters which screen the effective rays, namely, according to their texture or thickness. Furthermore, a direct quantitative relationship exists between the nature of the material and the duration of exposure to sun's rays or artificial sources of light. Black clothing will absorb more of the effective ultraviolet rays than similar white material.

The spectrum would seem to contain not only rays which can prevent or cure rickets, but also longer rays which are able to neutralize or inhibit the effect of these beneficent radiations. This phenomenon points to the need and the value of an analysis of rays employed in heliotherapy in rickets, tuberculosis, and other diseases. It would seem to indicate that this valuable therapeutic agent will be used with the employment of filters to absorb radiations which may be not only ineffective but counteracting.

## Clinical Notes, Suggestions, and New Instruments

### EXTERNAL CRICODYNIA: ITS CONTROL THROUGH THE NASAL (SPHENOPALATINE OR MECKEL'S) GANGLION

GREENFIELD SLUDER, M.D., ST. LOUIS

CASE 1.—For twenty years I have occasionally treated a man, now 55 years old, for acute inflammatory attacks in the lower pharynx, larynx and upper windpipe. His history is otherwise negative, save that he is underweight and not as strong as most men. In each of probably a dozen attacks he complained of a painful spot at the cricoid cartilage, in the external neck, with tenderness to slight pressure. I construed this to be a slight external perichondritis. It has always disappeared with recovery from the inflammatory attack.

CASE 2.—Two years ago I had a case identical with the foregoing in a man then 40 years of age. Eight years ago he had a tuberculous disease of the lumbar spine which confined him to bed in a plaster-of-Paris jacket for six months, since which he has been strong and well. His history is otherwise negative. For twenty-five years I have treated him for an occasional acute inflammatory attack of the nose, throat, larynx and windpipe, each lasting about a week and ending in recovery. With the attack two years ago he developed a painful external cricoid. The inflammatory attack was well in a week or ten days, but the cricoid remained very tender and painful for six months. I again thought of perichondritis, but could never discover any thickening of the tissues at the cricoid. Aside from the pain at the cricoid, no diagnosis could be made. For this reason I have elected to term it external cricodynia. Everything that I could do for him was in vain. He complained constantly, bitterly of the pain, particularly when touched, as, for example, by his collar.

CASE 3.—In the past year I have had another case identical in every way with Case 2. The patient is a strong, normal man, 33 years old. He had a chronic tonsillitis for which I did tonsillectomy. His sense of general well-being is improved by it, but the painful cricoid was unchanged.

Remembering some of the surprising and inexplicable results obtained by anesthetizing the nasal (sphenopalatine-Meckel's) ganglion, I resorted to this experiment, and to my delight it stopped the cricodynia for two weeks. A second cocaineization was again successful, and until now (six months later) it has not returned. There was nothing in the case to suggest its being a nasal ganglion case.

One month ago the second patient returned complaining of the external cricodynia. Anesthetizing the nasal ganglion stopped it, and it has not as yet returned.

I have had one more case of cricodynia which I controlled through the nasal ganglion, in a patient whom I saw only twice, in my office.

At present I am unable to speculate as to the path of the impulse or the mode of accomplishment for this result.

3542 Washington Avenue.

### AN INSTRUMENT (DRILL) TO FACILITATE THE CORRECTION OF CERTAIN TYPES OF EXTERNAL DEFORMITIES OF THE NOSE

SIDNEY ISRAEL, M.D., HOUSTON, TEXAS

In the correction or reduction of certain types of external deformities of the nose, those of us that have labored with the rasps, saws and chisels realize the limitations occasionally encountered of certain of these instruments, and the difficulties necessary to overcome. As a result of work on the cadaver, as well as on the living patient, a drill or burr has been devised, by the use of which I have succeeded in meeting and correcting these difficulties.

The drill is especially indicated in the correction of lateral displacement, or deformity of the bony nasal framework, when it is necessary to mobilize the nose completely previous to replacement in the corrected position. Its use in this type of deformity renders the need for saws or chisels unnecessary.

In the reduction of bony prominences, exostoses, or the like it is invaluable, and with it one can smooth, round or bevel the bone, as would best suit the individual case.

The drill or burr will attach to any small motor, by means of a flexible cable, and from the illustration one can see that the cutting or drill head is carefully protected by means of the steel hooded guard, which is a continuation of the main shaft, at the distal end and covers two thirds of its entire circumference. When the instrument is introduced beneath



Drill for correction of certain types of external deformities of the nose.

the skin, only the part of the drill in actual contact with the bone is exposed. The adjacent structure, together with the structures beyond and the overlying skin, is carefully protected by the guard surrounding the rotating drill or burr-head.

Carter Building.

### A RAPID TECHNIC FOR PREPARING HISTOLOGIC SECTIONS BY THE PARAFFIN METHOD

V. D. KEISER, A.B., M.D., AKRON, OHIO

The paraffin method of preparing tissues for histologic study has been, as a rule, the method of choice of most histologists. But in the clinical laboratory, where the element of time is important, the pathologist has often discarded the

1. Dean, L. W.: The Control of Glossodynia Through the Nasal (Sphenopalatine or Meckel's) Ganglion, *South. M. J.* **15**: 856 (Oct.) 1922.
2. Ewing, A. E.: Pain of Acute Glaucoma Relieved by Cocaine Applied to Meckel's Ganglion, *Am. J. Ophth.*, December, 1908.
3. Miller, H. E.: Intra-Ocular Tension in Glaucoma Lowered by Injection of the Sphenopalatine Ganglion, *Index of Otolaryngology* **3**, No. 4.
4. Sluder, Greenfield: Headaches and Eye Disorders of Nasal Origin, St. Louis, C. V. Mosby Company, 1918.
5. The Control of Earache Through the Nasal (Sphenopalatine, Meckel's) Ganglion, *J. A. M. A.* **78**: 1708 (June 3) 1922; The Control of Mandibular Pain Through the Nasal (Sphenopalatine, Meckel's) Ganglion, *Tr. Am. Laryngol. A.*, 1922.



paraffin method for other methods that are more rapid. The modification here described preserves the advantages of the paraffin methods as to quality of sections, and the like, and yet lends itself well to the needs of the clinical pathologist. This method depends primarily on a hastening of the dehydration process by using hot acetone as the dehydrating agent. This is accomplished in this laboratory by placing the fixed tissue in a specimen bottle of thick glass of about 30 c.c. capacity. The bottle is tightly corked and the cork clamped in place after the addition of about 25 c.c. of acetone. The bottle so prepared is then put in the paraffin oven, which is kept at 60 C. After two hours the dehydration process is completed with most tissues, as evidenced by the absence of a turbidity on the addition of xylenc. As acetone is about as inflammable as alcohol, the pressure flask should not be opened near a flame.

DETAILS OF THE METHOD

1. Blocks of tissue are cut as thin as practicable, and boiled for one minute in a 10 per cent. dilution of liquor formaldehydi.
2. While still hot, the tissue is dried with blotting paper.
3. The tissue is placed in a specimen bottle; about 25 c.c. of acetone is added, and a cork is clamped in place. The bottle is placed in the paraffin oven at 60 C.
4. After two hours it is removed from the paraffin oven and uncorked. Care must be taken at this point to remove the cork slowly, preferably with the whole container enveloped in a towel. A very considerable pressure has been created within the container, and, on removal of the clamp, the cork may fly out and the acetone expand with explosive violence.
5. If the tissue contains a considerable amount of fat, as in omentum or breast, it is treated with 15 or 20 c.c. of ether for fifteen or twenty minutes. (This suggestion of my colleague Dr. T. H. Boughton, of Akron City Hospital, has proved of value in sectioning fatty tissue.)
6. It is treated with 10 or 15 c.c. of xylene. The absence of turbidity is noted. Should turbidity appear, another hour in fresh acetone in the paraffin oven will complete the dehydration process. From fifteen to twenty minutes in xylene is ample time.
7. It is placed in high melting point paraffin in the paraffin oven for two hours.
8. It is blocked out and cooled in ice and salt solution. Cooling in an ice and salt solution secms, in our hands, to prevent troublesome crystallization of paraffin.
9. It is cut in sections at 5 microns, and spread on water at 38 C.
10. It is transferred by means of a plain glass slide to the surface of ice water.
11. It is mounted on a slide smeared with Mayer's albumin fixative.
12. The slide is placed in the paraffin oven for fifteen or twenty minutes.
13. Staining with hematoxylin and eosin is done at once.
14. It is mounted in balsam.

COMMENT

Since we have been taking sections up from a cold solution rather than from the warm solution on which they have been spread, we have experienced no appreciable trouble in having sections float off the slides during the staining process. The method has resulted in materially shortening the time in which this laboratory can render a pathologic report after receipt of the pathologic material.

**Proper Training in Physiotherapy.**—It seems to be quite clear that granted that we get a group of men and women interested enough in physiothcrapy they will see that they get the proper amount of information. It is essential that they get their training under the best possible auspices. There is responsibility upon the medical profession to provide such training for those who want it and are prepared to receive it.—R. L. Wilbur, *California State J. Med.* 21:25 (Jan.) 1923.

Special Articles

TYPHOID IN THE LARGE CITIES OF THE UNITED STATES IN 1922

ELEVENTH ANNUAL REPORT

THE JOURNAL presents its eleventh annual survey<sup>1</sup> of typhoid fever mortality in the cities of the United States having more than 100,000 population. The statistics of the fourteenth census showed that there were in 1920 sixty-nine cities with a population of more than 100,000. These may be conveniently considered for our purpose in six groups. More than one fourth of the population of the United States lives in these

TABLE 1.—CLASSIFICATION OF CITIES

	Population	Number of Cities
Group 1.	More than 500,000.....	12
Group 2.	From 300,000 to 500,000.....	9
Group 3.	From 200,000 to 300,000.....	12
Group 4.	From 150,000 to 200,000.....	10
Group 5.	From 125,000 to 150,000.....	9
Group 6.	From 100,000 to 125,000.....	17

cities, and nearly one sixth lives in the twelve cities with more than 500,000 population.<sup>2</sup>

As has been the case since 1920, every one of the twelve largest cities (Group 1, more than 500,000 population) had a typhoid death rate under 10, and, as in 1920 also, all but one had a rate under 5. In 1921 we were obliged to note that seven of these twelve cities showed a slight typhoid increase, as compared with the remarkably low figures for 1920. The year just past, however, has witnessed a resumption of the decline in

TABLE 2.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 1 (MORE THAN 500,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1922	1921	Average 1916-1920	Average 1911-1915	Average 1906-1910
Chicago.....	1.0	1.1	2.4	8.2	15.8
Boston.....	1.4	3.1	2.5	8.0	16.0
Cleveland.....	2.2	3.4	4.0	10.0	15.7
New York.....	2.2	2.1	3.2	8.0	13.5
San Francisco.....	2.2	4.2	4.6	13.6	27.3
Philadelphia.....	2.7	2.3	4.9	11.2	41.7
Buffalo.....	3.5	4.2	8.1	15.4	22.8
Los Angeles.....	3.7	2.6	3.6	10.7	19.0
Baltimore.....	4.0	5.4	11.8	23.7	35.1
St. Louis.....	4.2	3.8	6.5	12.1	14.7
Pittsburgh.....	4.6	4.1	7.7	15.9	65.0
Detroit.....	5.0	5.8	8.1	15.4	22.8

typhoid death rate, all but three of these cities showing a lower rate for 1922 than for the low year of 1920. The increases are, for the most part, trivial and to be expected on the basis of ordinary yearly fluctuations.

1. The preceding articles were published May 31, 1913, p. 1702; May 9, 1914, p. 1473; April 17, 1915, p. 1322; April 22, 1916, p. 1305; March 17, 1917, p. 845; March 16, 1918, p. 777; April 5, 1919, p. 997; March 6, 1920, p. 672; March 26, 1921, p. 860, and March 25, 1922, p. 890.  
2. The number of typhoid deaths has been sent us by the local officer of health, and the rates have been calculated in most cases on the basis of the midyear 1922 population estimates made by the U. S. Census Bureau. In a few instances indicated in the text, other estimates have been employed. It may perhaps be noted that the figures kindly furnished us by the municipal officials include all typhoid deaths that have occurred within the city limits, nonresidents as well as residents. In some instances this undoubtedly gives an exaggerated impression of the amount of typhoid fever in a community, but at present statisticians are agreed that "the attempt to eliminate the deaths of nonresidents would often result in an understatement of the true mortality" (Bureau of the Census, *Mortality Statistics*, 1912, p. 13). No attempt has been made to revise the averages of preceding years, since in most cases the figures would be changed but slightly.



Six of these large cities had a rate under 3. The Baltimore rate is so low (4.0) as to be worthy of particular notice, especially considering the fact that, so

TABLE 3.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 2 (FROM 300,000 TO 500,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1922	1921	Average 1916-1920	Average 1911-1915	Average 1906-1910
Minneapolis.....	1.9	1.2	5.0	10.6	32.1
Milwaukee.....	2.5	1.9	6.5	13.6	27.0
Newark.....	2.7	2.8	3.3	6.8	14.6
Seattle.....	2.8	2.2	2.9	5.7	25.2
Cincinnati.....	2.9	3.4	3.4	7.8	30.1
Kansas City, Mo. ....	4.9	11.0	10.6	16.2	35.6
Washington, D. C. ....	5.2	6.6	9.5	17.2	36.7
Indianapolis.....	5.4	7.3	10.3	20.5	30.4
New Orleans.....	10.2	9.3	17.5	20.9	35.6

late as the five year period from 1916 to 1920, the average typhoid rate in that city was 11.8.

The most complete typhoid records continue to be published by the New York City Health Department in its *Weekly Bulletin*. For the quarter ending Sept. 30, 1922, for example, it is stated that the probable mode of infection was traced in 42 per cent. of the cases, which is almost exactly the same as that for the corresponding quarter of the previous year. Out of town infection again stands highest in the list, the proportion remaining very constant, about 26 per cent. of all cases. Bathing in polluted waters in New York City is credited with causing twenty-four cases, and contaminated shellfish with six cases. A number of cases of typhoid were traced to a Thanksgiving party in November, where ice cream was served. Several

TABLE 4.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 3 (FROM 200,000 TO 300,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1922	1921	Average 1916-1920	Average 1911-1915	Average 1906-1910
Providence.....	0.0	2.5	3.8	8.7	21.5
Columbus, Ohio.....	1.1	4.0	7.1	15.8	40.0
Jersey City.....	1.6	3.5	4.5	7.2	12.6
Akron.....	1.9	5.7	....	....	....
St. Paul.....	2.0	7.1	3.1	9.2	12.8
Rochester.....	2.5	3.2	2.9	9.6	12.8
Oakland.....	3.0	1.3	3.8	8.7	21.5
Portland, Ore. ....	3.3	3.0	4.5	10.8	23.2
Toledo.....	3.8	8.6	10.6	31.4	37.5
Denver.....	5.9	4.5	5.8	12.0	37.5
Louisville.....	8.0	5.5	9.7	19.7	52.7
Atlanta.....	10.9	11.0	14.2	31.4	58.4

outside cases were also traced to ice cream from the same source. It was suspected, but not proved, that the wife of the proprietor of the ice cream store was a typhoid carrier. This outbreak illustrates what has been frequently observed in the carrier transmission of disease; namely, that the carrier condition first comes to light in connection with group outbreaks. If some meal or article of food partaken of by a large number of persons furnishes the clue, then the existence of a carrier may be detected, while otherwise the occurrence of scattered cases at long intervals may make an almost impossible epidemiologic tangle. Such outbreaks strengthen the opinion that untraced, and with the available information untraceable, cases of typhoid may be due in relatively large proportion to carrier infection. New York City is apparently practically free from water-borne and milk-borne infection.

Philadelphia is another city in which careful records of typhoid in recent years are available. While the data for 1922 have not yet been published, those for

1921 are interesting for comparison. The source of infection was traced in 58 per cent. of the Philadelphia typhoid cases. Nearly one half of this number (43 per cent.) were attributed to out of town infection. Other sources named are: direct contact with other cases (twenty-two cases); bathing in polluted water (nineteen cases), and drinking polluted water from wells or springs (sixteen cases). No statement regarding carrier outbreaks is made for 1921, but it is fair to suppose that the proportion does not vary very much from that occurring in New York, since the other sources of infection seem very similar. The heavy toll paid by Philadelphia citizens for maintaining a polluted water supply for nearly fifty years may be seen by comparison of the rates in this city since 1860. In the first decade (1860-1870) the typhoid death rates ranged from about 60 to nearly 100, sometimes exceeding the latter figure. Between 1870 and 1880 the actual rate

TABLE 5.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 4 (FROM 150,000 TO 250,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1922	1921	Average 1916-1920	Average 1911-1915	Average 1906-1910
Syracuse.....	1.6	3.9	7.7	12.3	15.6
Worcester.....	3.1	3.2	3.5	5.0	11.8
Dayton.....	3.7	5.2	9.3	14.8	22.5
Omaha.....	4.4	4.0	5.7	14.9	40.7
Richmond.....	4.4	5.6	9.7	15.7	34.0
San Antonio.....	5.6	16.6	23.3	29.5	....
Dallas.....	5.8	12.7	17.2	....	....
New Haven.....	5.8	4.7	6.8	18.2	30.8
Memphis.....	8.9	9.0	27.7	42.5	35.3
Birmingham.....	12.5	17.0	31.5	....	....

was somewhat lower, but in 1876, the year of the Centennial Exposition, the rate again reached nearly 100. Little improvement was noted between 1880 and 1890, but in the next decade the rate fell in several years almost to 30. The period 1900 to 1910 was again a time of great typhoid prevalence, the rate exceeding 70 on two occasions. In 1912, filtration for the whole city was completed; pasteurization of the milk supply has been general since 1914, with the eminently satisfactory results shown in the table (only 4.9 for 1916-1920).

We have received an admirable report on typhoid fever in Baltimore. An unusually large proportion (65 per cent.) of the cases in 1922 were attributed with a high degree of probability to their source. About 35 per cent. of the whole number of cases were regarded as due to out of town infection. About 6 per cent. were regarded as due to household contact infec-

TABLE 6.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 5 (FROM 125,000 TO 150,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1922	1921	Average 1916-1920	Average 1911-1915	Average 1906-1910
Bridgeport, Conn. ....	0.6	2.7	4.8	5.0	10.3
Grand Rapids.....	0.6	2.8	9.1	25.5	29.7
Seranton, Pa. ....	1.4	6.5	3.8	9.3	31.5
Springfield, Mass. ....	1.4	4.4	4.4	17.6	....
Des Moines.....	1.5	1.4	....	....	....
Paterson, N. J. ....	2.1	5.8	4.1	9.1	19.3
Hartford, Conn. ....	2.8	7.2	6.0	15.9	19.0
Youngstown, Ohio.....	6.2	15.0	....	....	....
Houston, Texas.....	7.3	11.7	....	....	....

tion, and about the same number to carrier infection. Well water infection was considered to have caused nearly 7.5 per cent. of the cases. It is, of course, true that Baltimore has a high percentage of cases coming to



the city hospitals from rural communities in the neighborhood, and that, in a large proportion of these cases, infection was almost certainly contracted outside the

TABLE 7.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 6 (FROM 100,000 TO 125,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1922	1921	Average 1916-1920	Average 1911-1915	Average 1906-1910
New Bedford.....	0.0	2.3	6.0	15.0	16.1
Yonkers.....	0.0	2.9	4.8	5.0	10.3
Cambridge.....	0.9	10.8	2.5	4.0	9.8
Albany.....	1.7	4.3	8.0	18.6	17.4
Lowell.....	2.6	5.2	5.2	10.2	13.9
Salt Lake City.....	3.2	5.7	9.3	13.2	....
Fall River.....	3.3	2.4	8.5	13.4	13.5
Tacoma.....	4.0	3.0	2.9	10.4	19.0
Wilmington, Del. ....	5.1	4.4	....	....	....
Camden.....	5.7	6.6	4.9	4.5	....
Spokane.....	5.7	4.7	4.9	17.1	50.3
Norfolk, Va. ....	6.4	4.1	....	....	....
Kansas City, Kan. ....	7.0	4.8	9.4	....	....
Fort Worth.....	7.8	10.7	....	....	....
Reading, Pa. ....	9.2	11.7	10.0	31.9	42.0
Trenton.....	15.9	8.9	8.6	22.3	....
Nashville.....	16.2	20.4	20.7	40.2	61.2

city. The remarkable decline in urban typhoid everywhere naturally brings it about that outside infection is coming to bear a more and more important relation to the total number of city cases. Many other American cities are in much the same position as Baltimore as regards typhoid deaths of nonresidents in the city hospitals. New Orleans, for example, has probably an even higher proportion of nonresident deaths. An exact comparison between city death rates thus becomes a difficult task, unless in all cases nonresident deaths in

TABLE 8.—DEATH RATES FROM TYPHOID IN 1922

Honor Roll (from 0.0 to 2.0)		
New Bedford.....	0.0	Seranton..... 1.4
Providence.....	0.0	Springfield..... 1.4
Yonkers.....	0.0	Des Moines..... 1.5
Bridgeport.....	0.6	Jersey City..... 1.6
Grand Rapids.....	0.6	Syracuse..... 1.6
Cambridge.....	0.9	Albany..... 1.7
Chicago.....	1.0	Akron..... 1.9
Columbus.....	1.1	Minneapolis..... 1.9
Boston.....	1.4	St. Paul..... 2.0
First Rank (from 2.0 to 5.0)		
Paterson.....	2.1	Fall River..... 3.3
Cleveland.....	2.2	Portland..... 3.3
New York.....	2.2	Buffalo..... 3.5
San Francisco.....	2.2	Dayton..... 3.7
Milwaukee.....	2.5	Los Angeles..... 3.7
Rochester.....	2.5	Toledo..... 3.8
Lowell.....	2.6	Baltimore..... 4.0
Newark.....	2.7	Tacoma..... 4.0
Philadelphia.....	2.7	St. Louis..... 4.2
Hartford.....	2.8	Omaha..... 4.4
Seattle.....	2.8	Richmond..... 4.4
Cincinnati.....	2.9	Pittsburgh..... 4.6
Oakland.....	3.0	Kansas City, Mo. .... 4.9
Worcester.....	3.1	Detroit..... 5.0
Salt Lake City.....	3.2	
Second Rank (from 5.0 to 10.0)		
Wilmington, Del. ....	5.1	Youngstown..... 6.2
Washington, D. C. ....	5.2	Norfolk..... 6.4
Indianapolis.....	5.4	Kansas City, Kan. .... 7.0
San Antonio.....	5.6	Houston..... 7.3
Camden.....	5.7	Fort Worth..... 7.8
Spokane.....	5.7	Louisville..... 8.0
Dallas.....	5.8	Memphis..... 8.9
New Haven.....	5.8	Reading..... 9.2
Denver.....	5.9	
Third Rank (from 10 to 20)		
New Orleans.....	10.2	Trenton..... 15.9
Atlanta.....	10.9	Nashville..... 16.2
Birmingham.....	12.5	

city hospitals are deducted from the total. Since reliable information on this point is not in all cases available, this is a recognized source of error. It is nevertheless true that the existence of typhoid fever in territory sur-

rounding the large cities of this country should be a matter of concern for city officials. In some instances the prevalence of typhoid in the neighborhood of the city is now receiving attention, since it is apparent that such foci not only swell unduly the number of imported typhoid patients in city hospitals, but also serve as genuine centers of infection for the city population through contamination of milk and other foods destined for city consumption.

There is not much to be gained this year by comment on comparative records of individual cities. The 1922 rates are in nearly every case so low that comparison with the preceding year, or in most cases with one

TABLE 9.—AVERAGE DEATHS FROM TYPHOID PER HUNDRED THOUSAND IN EACH GROUP, 1916, 1917, 1918, 1919, 1920, 1921 AND 1922

Group	Year	No. of Cities	Total Population	No. of Typhoid Deaths	Average Deaths per 100,000
1	1916	9	13,743,746	854	6.2
1	1917	9	14,027,263	774	5.5
1	1918	9	13,809,901	598	4.3
1	1919	9	15,019,516	463	3.1
1	1920	12	16,526,740	460	2.8
1	1921	12	16,851,750	460	2.7
1	1922	12	17,037,727	441	2.5
2	1916	10	4,053,281	344	8.5
2	1917	10	4,150,099	329	7.9
2	1918	10	4,372,088	298	6.8
2	1919	10	4,511,181	204	4.5
2	1920	9	3,463,760	141	4.1
2	1921	9	3,498,783	174	4.9
2	1922	9	3,540,356	152	4.2
3	1916	10	2,635,983	248	9.4
3	1917	10	2,701,029	173	6.4
3	1918	10	2,773,716	193	6.9
3	1919	10	2,839,092	134	4.7
3	1920	12	2,951,373	142	4.8
3	1921	12	2,990,971	148	4.8
3	1922	12	3,047,937	112	3.6
4	1916	14	2,250,991	330	14.7
4	1917	14	2,310,372	307	13.3
4	1918	14	2,449,736	331	13.5
4	1919	14	3,564,860	210	8.2
4	1920	10	1,707,624	135	7.9
4	1921	10	1,740,300	143	8.2
4	1922	10	1,789,285	101	5.6
5	1916	17	1,983,918	235	11.8
5	1917	17	2,031,313	229	11.3
5	1918	17	2,053,215	240	11.7
5	1919	17	2,103,710	115	5.5
5	1920	7	962,436	46	4.8
5	1921	9	1,123,181	70	6.2
5	1922	9	1,263,044	35	2.7
6	1920	15	1,718,166	83	4.8
6	1921	17	1,948,414	132	6.7
6	1922	17	1,966,279	112	5.6
Total	1916	60	25,667,919	2,011	8.1
Total	1917	60	25,220,076	1,812	7.2
Total	1918	60	25,458,656	1,660	6.5
Total	1919	60	27,028,359	1,126	4.2
Total	1920	65	27,330,099	1,007	3.7
Total	1921	69	28,291,435	1,138	4.0
Total	1922	69	28,644,628	953	3.3

another, can have but little statistical significance. When a city like St. Paul, with a population of nearly 250,000, can report only seven deaths from typhoid, three of which were in nonresidents, it is plain that typhoid is at a low ebb.

The extent of the decrease in typhoid that has occurred in the large American cities is shown especially in Tables 8 and 9. Three cities, New Bedford, Providence and Yonkers, were able to report no deaths from typhoid for the calendar year 1922. The roll of honor this year, including all cities with a typhoid rate under 2.0, is larger than ever before reported. No fewer than eighteen cities find this year a place on the roll of honor, almost double the largest number previously recorded (ten in 1920). For the first time, too,



since these summaries were undertaken, there is no city in the fourth rank with a rate over 20. There are, indeed, only five cities with a rate over 10, as compared with nineteen cities of the third rank as late as 1917.

Southern cities have shared in this typhoid decrease along with the cities in the Northern states. Baltimore and Richmond have rates of 4.0 and 4.4, respectively. San Antonio and Dallas report much lower rates for 1922 than for 1920 and 1921. Nashville, which has the highest rate of any city, is in a region in which typhoid is apparently particularly prevalent, the state of Tennessee being debited by the U. S. Census Bureau with the highest typhoid rate in 1921 of any registration state. It is difficult, with typhoid-infested surroundings, for any community to keep reasonably free from typhoid infection. A great improvement has been effected in Nashville in spite of these disadvantages. The average rate was over 40 from 1911-1915, so that 16.2 in 1922 appears relatively low. It may be confidently anticipated that still further improvement will be effected in this city.

Trenton reports the highest typhoid rate for any Northern city, and finds itself in the third rank, having for its only companions four Southern cities with a large negro population, and surrounded by rural areas

TABLE 10.—TOTAL AVERAGE TYPHOID DEATH RATE  
(1910-1921)

	Total Population (57 Cities)* Estimated by the U. S. Census Bureau Methods	Typhoid Deaths	Typhoid Death Rate per 100,000
1910.....	20,996,035	4,114	19.59
1911.....	21,545,014	3,391	15.74
1912.....	22,093,993	2,775	12.56
1913.....	22,642,972	2,892	12.77
1914.....	23,191,951	2,408	10.38
1915.....	23,740,930	2,038	8.71
1916.....	24,205,359	1,842	7.61
1917.....	24,740,068	1,647	6.65
1918.....	24,971,278	1,557	6.23
1919.....	25,526,186	987	3.87
1920.....	26,154,013	921	3.52
1921.....	26,561,469	978	3.68
1922.....	26,936,843	851	3.15

\* Twelve cities are omitted from this summary because data for the full period are not available.

in which typhoid is far more prevalent than in the neighborhood of Trenton. Trenton and Reading might perhaps profit by an antityphoid campaign. Is there any reason why these cities should have consistently higher typhoid rates than Paterson and Scranton? A few cities seem to have suffered in 1922 from small special outbreaks. Kansas City, Mo., although its total rate is not high, had some milk-borne typhoid, and Washington, D. C., experienced an outbreak attributed to food eaten at a church supper which caused the illness of forty-four persons, and the death of one.

As appears in Tables 8 and 10, the year 1922 marks the lowest point yet reached in the typhoid record of the large cities of the United States. The slight check that occurred in 1921 to the almost steady decline of twelve years has been followed, as we predicted last year, by a further decrease. Compared with 1921, forty-six cities showed a diminished and only twenty-three an increased typhoid rate. It does not seem oversanguine, knowing what we do of modes of typhoid dissemination, to believe that city typhoid rates will decline still further. We are certainly not manufacturing typhoid carriers in the United States as abundantly as we were fifteen years ago.

## THE CARE AND FEEDING OF INFANTS

(Continued from page 627)

[NOTE.—This is the tenth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—Ed.]

### SUMMARY OF QUANTITATIVE AND CALORIC RELATIONSHIP OF THE FOOD CONSTITUENTS

In the diet recommended as a *minimum* for the average normal infant on a diet of cow's milk with added carbohydrates, namely; per pound, milk 1½ ounces, sugar 1/10 ounce and starch 1/60 ounce, or per kilogram, milk 100 c.c., sugar 6.6 gm. and starch 1.1 gm., the distribution of ingredients would be as in Table 11.

TABLE 11.—INGREDIENTS IN MINIMAL DIET

	Proportion of Amounts—			Distribution of Calories—		
	Per Pound Grams	Per Kilo-gram Grams	Per Cent.	Per Pound	Per Kilo-gram	Per Cent.
Fat .....	1.8	4.0	20.5	16.74	37.2	37.1
Protein .....	1.5	3.5	17	6.15	14.35	14
Sugar.. { in milk	2.0	4.5	62.5	22.55	49.61	49
{ added	3.0	6.6				
Starch .....	0.5	1.1				
Calcium oxid....	0.08	0.176				
Total....				45.44	101.16	

The ratio of the amounts of the components of the diet, when expressed in percentages, shows: fat, 20.5; protein, 17; carbohydrate, 62.5; that of the caloric distribution of the ingredients is: fat, 37; protein, 13.5; carbohydrate, 49.5.

The *amount* of fat in the diet, therefore, slightly exceeds the protein, while the carbohydrate is somewhat more than three times the fat or protein.

The *caloric value* of the diet, however, shows that the fats are about two and one-half times the protein, while the combined fat and protein calories about equal the carbohydrates.

Holt,<sup>40</sup> in studying the diets of a series of 106 children, ranging in ages from 1 to 18 years, found that the average percentage distribution of the food intake in calories was: fat, 35; protein, 15; carbohydrate, 50.

TABLE 12.—CALORIES IN FAT, PROTEIN AND CARBOHYDRATES

Fat .....	1 gram = 9.3 calories
Protein .....	1 gram = 4.1 calories
Carbohydrate .....	1 gram = 4.1 calories

The combined calories of food elements usually recommended for the normal infant average 45 for each pound, or 100 calories for each kilogram body weight. Clinical experience leads me to recommend this amount as the *minimum required* by the average artificially fed infant of the second month (see caloric needs). The greater needs of the individual infant for growth are to be met by increasing the total food given or such of the ingredients as may be indicated. Only under exceptional circumstances should the suggested proportions be deviated from to any considerable amount, and then only through the reparation stage if normal development is to be expected.

### NUMBER OF FEEDINGS IN TWENTY-FOUR HOURS

*Four-Hour Intervals.*—It has been proved that the usual cow's milk mixtures fed to infants do not leave

40. Holt, L. E.: Food, Health and Growth, New York, the MacMillan Company, 1922.



the stomach completely for at least three hours after ingestion. Most normal infants will be satisfied when placed on suitable mixtures at four-hour intervals. For several years, normal infants have been fed successfully on four-hour periods. The most suitable hours are 6 and 10 a. m., and 2, 6 and 10 p. m., with a 2 a. m. feeding if necessary. Most infants will be satisfied with five feedings daily from birth.

*Three-Hour Intervals.*—If the three-hour interval is indicated, one should begin with seven feedings in twenty-four hours for the first month (6, 9, 12, 3, 6, 10, 2); six feedings during the second and third months (6, 9, 12, 3, 6, 10), and five feedings by the fourth to the fifth month (6, 10, 2, 6, 10), according to the individual need.

Premature and delicate infants having a tendency to vomit, as such cases are exceptions, may be fed smaller amounts more frequently, even at two-hour intervals, if indicated. In case catheter feeding is necessary, the longer interval will usually suffice.

*Water to Be Added.*—It is most important to remember that young infants require a minimum of one fifth of their body weight of fluids daily (3 ounces per pound), and in their later months at least one sixth of their body weight (2½ ounces per pound) daily.

For the average normal infant, the amount of water to be added to the mixture is calculated by estimating that young infants, after their first few weeks of life, should be given 3 ounces of fluid daily per pound (200 c.c. per kilogram) of body weight, and older infants 2½ ounces. The difference between the total fluids required by the infant for a day's feeding, and the amount of milk fed, equals the amount of water to be added. The food mixture is divided into equal portions, the number of which will vary with the feeding interval. Infants having a tendency to vomit usually have to be limited to 2½ ounces of fluid per pound of body weight.

Underweight infants will require a total of fluids approximately 3 ounces, or at times even more per pound of body weight. Very fat infants will often be satisfied with somewhat less water than suggested.

After the fourth month, the average infant will take at least one quart of the food mixture daily. By this time a mixed diet may be instituted by adding a well cooked cereal to one or two of the day's feedings.

After the sixth month, four meals of 8 ounces each of a milk mixture may be given, and a fifth meal of a vegetable broth may be added. *Mixed feeding will be discussed more fully under Additional Foods.*

It has been found that a concentrated milk mixture does not disturb the infant's digestion when the milk is boiled, when cereal waters are used as diluents, or when it is alkalized by the addition of sodium citrate or lime water.

*Carbohydrates to Be Added.*—Having the necessary amount of milk and water, we ascertain the amount of carbohydrates to be added. Cane or milk sugar will satisfy the needs of the average normal infant during its first month when added in amounts of one-tenth ounce (3 gm.) per pound. Somewhat more than twice this quantity (6.6 gm.) should be added per kilogram of body weight to the day's mixture. Cane sugar mixtures are occasionally refused by infants when large amounts are added because they are too sweet. In such cases, part of the sugar can be replaced by milk sugar or maltose-dextrin compounds.

After the infant is 1 or 2 months old, from one-sixtieth to one-thirtieth ounce (0.5 to 1 gm.) of cereal or cereal flour for each pound of body weight may be added to the mixture. This is best given as cereal water. The addition of the second carbohydrate often has a very beneficial effect on the weight curve.

In underweight infants, the amount of sugar to begin with should be calculated on the basis of the existent weight, approximating the quantity needed for a full-weight infant as rapidly as the sugar tolerance permits.

Table 13 gives equivalents of 1 ounce by weight and the domestic measures of carbohydrates used in the artificial feeding of infants.

TABLE 13.—EQUIVALENTS OF AN OUNCE

	By Weight		By Measure	Spoonfuls, Leveled with Knife		
	Ounce	Gm.	Ounces	Table	Dessert	Tea
Cane sugar.....	1	30	1.00	2	3	6
Milk sugar.....	1	30	1.50	3	4.5	9
Maltose-dextrin .....	1	30	1.50	3	4.5	9
Flour (wheat).....	1	30	2.25	5	7.5	15
Flour (barley).....	1	30	1.50	3	4.5	9
Barley (pearl).....	1	30	2.50	5	8	15
Oats (rolled).....	1	30	2.50	5	8	15

1 tablespoonful = 1.5 dessertspoonfuls = 3 teaspoonfuls

*To Break the Curd to Assist Digestion of Cow's Milk.*—Many infants can digest raw cow's milk. When it is not well digested, the formation of large protein curds is obviated by boiling the milk from two to three minutes over the flame or, better, by putting it in a double boiler and heating it until the water in the outer vessel boils eight minutes. Although the curd is less finely divided by the use of the double boiler as compared with boiling over the direct flame, it answers the purpose for most infants and causes fewer changes in the milk. A small double boiler should be used, as in it the column of milk is deep and has a small surface. The milk should simmer rather than boil actively, and in the larger vessel boiling takes place more readily. Milk that has been simmered undergoes less change in taste than that which has been actively boiled and there is less loss of soluble protein, fat, sugar and salts.

The feeding of raw diluted cow's milk has certain unquestionable advantages; however, when its source is in any way doubtful or its subsequent handling is likely to have led to contamination, it should be either pasteurized or boiled.

Cereal water diluents cause the formation of fragile curds. Addition of sodium citrate to the milk mixtures also prevents the formation of hard protein curds. Sodium citrate may be prescribed either in 5-grain tablets, approximately one-half to 1 grain being added for each ounce of the milk mixture, or a prescription may be so written that each teaspoonful of the prescribed formula will contain sufficient sodium citrate for the day's food.

When lime water is added to cow's milk until it is neutral or faintly alkaline to phenolphthalein, a basic calcium casein is formed which is not acted on by rennet and will not form a curd, even in the presence of lime salts (Van Slyke). Lime water is commonly used in amounts equaling 5 per cent. of the milk in the mixture (1 ounce to 20 ounces of milk). In most instances no advantage is gained by adding alkalis to boiled milk mixtures. Occasionally the addition of sodium citrate or lime water to boiled milk will be found of advantage in cases of difficult feeding and in the presence of vomiting.

(To be continued)



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MARCH 10, 1923

## THE STATUS OF EPIDEMIC ENCEPHALITIS AS AN INDEPENDENT DISEASE

From the spring of 1920 until recently, there have been comparatively few new cases of epidemic (lethargic) encephalitis in North America, and interest in it has been kept up mainly by the surprising array of its somatic and psychic sequels. Within the last few weeks, however, reports have come of a large epidemic in Winnipeg, and smaller ones in Connecticut and elsewhere. Since 1917, nearly 2,000 articles on this disease have appeared, and, within the last two years, four comprehensive reviews in book form.<sup>1</sup> In addition, the French investigator Levaditi has written a book giving a comparative epidemiologic, pathologic and clinical study of the three closely related acute infectious disorders of the nervous system: encephalitis, poliomyelitis and herpes.<sup>2</sup>

The etiology of both acute encephalitis and poliomyelitis remains unsettled. The champions of the "globoid bodies" of Loewe, Hirschfeld and Strauss, and those of the streptococcus, have not yet agreed among themselves, or succeeded in convincing the majority of investigators to accept any exclusive view. It is agreed that the disease is caused by a microbe having a minute filtrable form that permits transmission by means of the filtrable virus to animals. It seems proved also that the virus exists in the nasopharynx, that the disease is mildly contagious, and that the usual period of incubation is ten days. No one now regards seriously the view of the English epidemiologist Crookshank that epidemic encephalitis and poliomyelitis are caused by the same virus or variations of the same virus. The relationship between influenza and encephalitis is most difficult to define. It does not seem reasonable that the appearance of the two diseases in epidemic form at the same time now and in the past can be a mere coincidence. There must be some connection, but

what is it? Encephalitis is certainly not a mere sequel of influenza, as most victims of the former do not give a history of having had the latter. Nor do encephalitis patients present the leukopenia and tendency to a peculiar form of pneumonia so characteristic of influenza. Furthermore, there is a form of encephalitis directly connected with influenza, which differs from the epidemic form in being more sudden and severe in its onset, and in having more severe and permanent focal symptoms, more signs of a complicating meningitis, and a marked tendency to multiple minute hemorrhages in the brain and sometimes to suppuration. Economo has suggested that the encephalitis virus requires activation by that of influenza, and it has also been thought that the damage to vessel walls caused by previous influenza renders a person more susceptible to encephalitis. Another theory, which at least cannot be said to have been positively disproved, is to the effect that encephalitis is caused by a highly neurotropic influenza virus. Stern offers the broad hypothesis that encephalitis is caused by a filtrable virus, which exists in a harmless form in the saliva of many persons, and may be activated not only by the influenza virus, but also by pneumococci, streptococci and other bacteria.

While, as yet, we have no proof of a specific causative virus, the nosologic independence of epidemic encephalitis appears proved when, following Stern, we assemble the main features: First, the clinical ones: (1) the prominence of somnolence, transient cranial nerve palsies, and atonic or hypertonic extrapyramidal motor disturbances (choreic and parkinsonian types); (2) the rarity of certain symptoms that are frequent in other forms of encephalitis, such as those indicative of destructive upper motor neuron lesions, as well as convulsions and anesthetics; (3) the relative frequency of "central" pains, sympathetic disturbances, especially salivation, and certain pseudospontaneous motions and disorders of respiratory rhythm, otherwise more commonly seen in psychogenic disorders than in organic disease; (4) the tendency to frequent variation in the grouping of symptoms in different epidemics and localities; (5) the presence of a chronic progressive form. To these we may add (6) the possibility of the development, after a free interval of years, of a progressive "para-encephalitic disease," analogous to the late nervous manifestations of syphilis. This usually is of a parkinsonian type, and may follow in the wake of an acute illness so mild that its nature becomes established only by the character of the subsequent symptoms.<sup>3</sup>

Anatomically, we have these principal features: (1) the insignificance of the gross changes; (2) the rarity of thrombosis and necrosis; (3) the lymphocytic character of the perivascular infiltrations; (4) the predilection of the inflammation for certain regions of the basal ganglions and brain stem.

1. Acute Epidemic Encephalitis: An Investigation by the Association for Research in Nervous and Mental Disease, New York, 1921. Encephalitis Lethargica. Reports on Public Health and Medical Subjects, No. 11, London 1922. Achard, Charles: L'encéphalite léthargique, Paris, 1921. Stern, Felix: Die epidemische Encephalitis, Berlin, 1922.

2. Levaditi, C.: Ectodermoses neurotropes: poliomyélite, encéphalite, herpes, Paris, 1922.

3. This aspect of the encephalitis problem was discussed by Bassoe, Peter: The Diagnosis of Epidemic Encephalitis, J. A. M. A. 79: 2223 (Dec. 30) 1922.



Much work has been done on the spinal fluid, and the views, at first quite divergent, have become crystallized. There is no pathognomonic feature, but there are two fluid "syndromes," thus defined by Eskuchen:<sup>4</sup> (1) lymphocytosis; globulin increase; luetic gold curve; increased sugar; (2) cell-globulin "dissociation," with relative increase in cells; luetic gold curve; increased sugar.

On the whole, the most valuable work in the last two years relates to the sequels, mental and physical, the number and variety of groupings of which are most surprising and bewildering, bringing new and unexpected problems in differential diagnosis. Postencephalitic states are easily confused not only with paralysis agitans and chronic choreas, but also with dementia praecox, general paresis, multiple sclerosis and brain tumor. Especially in children, in the absence of history, behavior disorders and other mental disturbances may lead to a wrong diagnosis of imbecility, "moral insanity," or plain, unaccountable wickedness.

#### ALIMENTARY GASES

Distention of portions of the alimentary tract by gases that fail to be absorbed or discharged from it is a familiar manifestation. Not infrequently it is a condition sufficiently distressing to call for special treatment to secure relief; consequently, some appreciation of the etiology of the accumulation of gases is desirable. The kinds of the latter that have at times been reported as occurring in different regions of the gastro-enteric tract are varied, including oxygen, nitrogen, carbon dioxid, methane and hydrogen sulphid. It has long been recognized that part, at least, of the occluded gases are derived from air swallowed or inevitably entangled in the meshes of ingested food. Part may be, and doubtless is, derived from fermentative changes in the enteric contents. Furthermore, it has been realized that diffusion must go on between the contents of the alimentary tube and its environment of blood and tissue fluids, to a greater or lesser extent.

Does the character of the residual gases determine some of the symptoms they may initiate? Such a question might be asked in connection with the belching so commonly noticed in patients. Before this widespread phenomenon is attributed offhand to pressure, to gastric "neurosis"—whatever that may be—or to reflex changes, it is worth while to consider the character of the gases concerned. Several years ago, Ylppö<sup>5</sup> found that atmospheric air, as such, disappeared from the stomach in from forty to sixty minutes, and that the residue had a rather constant oxygen-carbon dioxid ratio, which approximated that of blood gases. In general harmony with this is the recent study of Dunn and Thompson<sup>6</sup> of Omaha. They, too, found that atmos-

pheric air introduced into the stomach tends to come into equilibrium with the blood gases within one hour in the case of carbon dioxid, and considerably later, if at all, in the case of oxygen. All the carbon dioxid found in the stomach gas of normal persons, whether during fasting or after a full meal, can be accounted for by secretion or diffusion from the gastric mucosa. Although stomach contents devoid of "free" hydrochloric acid usually show evidence of fermentation with gas production, the presence of such acidity virtually precludes the production of carbon dioxid by fermentation. Consequently, the latter process can have little to do with the carbon dioxid content in the stomach gas of normal persons. As Dunn and Thompson reemphasize, the gaseous interchange in the stomach is a fundamental physiologic process governed by fixed laws.

This subject bears a relationship to the phenomenon of aerophagy, in which the repeated swallowing of air is followed by eructations of gases from the stomach. It is far from enlightening to dismiss this unique behavior as the manifestation of a neuropathic reaction. When patients suffering from cardiac or gastric disease experience relief after belching gas, they are tempted to repeat the process. To do so they must swallow more air. A study of aerophagy in the light of accurate gas analyses, Dunn and Thompson remark, may reveal "a cause of more compelling therapeutic interest for this unpleasant symptom complex than that which allows it to be viewed in the yellow light of 'neurotic perversity.'"

#### LIPEMIA IN DIABETES

It is an established fact that many diabetic patients exhibit not only a hyperglycemia but also an undue content of fat in the circulating blood—a lipemia. The latter has not received the amount of attention that has been given the abnormal level of the blood sugar, presumably because the latter usually discloses itself by a coincident glycosuria, and the fat estimations require a well trained analyst. If diabetes is to be interpreted as a derangement not only of the carbohydrate metabolism but also, in the severer cases, of the behavior of fat and protein in the chemical transformations of the organism, treatment may become a problem of adjusting the diet to the tolerance of the organism for each of the great classes of foodstuffs. For this reason the advocacy of a low protein, low carbohydrate, high fat diet by Newburgh and Marsh<sup>1</sup> has provoked considerable debate.

Ketosis is commonly regarded as an indication of inadequate metabolism of fats. It is a common manifestation of severer types of diabetes. If the high fat diet reported to be successful in the hands of Newburgh and Marsh does, in fact, allow the patients to

4. Eskuchen, Karl: *Ztschr. f. d. ges. Neurol. u. Psychiat.* **76**: 568, 1922.

5. Ylppö, A.: *München. med. Wchnschr.* **63**: 1650, 1916.

6. Dunn, A. D., and Thompson, Warren: The Carbon Dioxid and Oxygen Content of Stomach Gas in Normal Persons, *Arch. Int. Med.* **31**: 1 (Jan.) 1923.

1. Newburgh, L. H., and Marsh, P. L.: Use of a High Fat Diet in the Treatment of Diabetes Mellitus, *Arch. Int. Med.* **26**: 647 (Dec.) 1920.



become free from excretion of ketone substances, the circumstance should be reflected in a reasonably low content of blood fat. Bloor,<sup>2</sup> who has had a large experience in this field, regards lipemia in any event as a disturbance in the balance between inflow and outflow of fat in the blood. He assumes that diabetic lipemia represents an abnormally slow outflow.

It has become important, therefore, to ascertain by direct observation whether the mechanism for the utilization of fats breaks down in any way under the Newburgh-Marsh diabetic regimen. Blatherwick<sup>3</sup> has observed that patients with mild and moderate diabetes living on diets similar to those recommended by Newburgh and Marsh are apparently able to utilize satisfactorily large amounts of fat, as indicated by constancy of the blood fat level and by the absence of acetone substances in the urine. More recently, Marsh and Waller<sup>4</sup> have published records of diabetic patients on the same type of high fat diets in whom there was no increase in the lipid content of the blood during the periods of observation. In fact, in some of those showing a hyperlipoidemia when first examined the total fat fell to approximately normal levels. Hence Marsh and Waller conclude that the prevalent view, which assumes that diabetic hyperlipoidemia is dependent on the excessive ingestion of fat, is unwarranted. The explanation of this phenomenon must be sought in some other unusual feature of the diabetic state.

#### THE THERAPY OF CERTAIN FUNCTIONAL NERVOUS DISTURBANCES

The treatment of headache or migraine, like that of fatigue, mental lethargy, and the whole complex of neurasthenia, is admittedly unsatisfactory. The reason for this lies primarily in our ignorance of the genesis of these clinical disturbances. There seems to be a crying need of immediate further studies in this field of medical research. The failure of clinical medicine to make satisfactory progress in the management of certain types of functional nervous disturbances justifies us in giving a respectful hearing to any reasonable proposal. In this spirit, reference may be made to the suggestions of Pemberton<sup>5</sup> that many forms of neurasthenia, headache, migraine, most cases of neuritis, certain types of mental depression and melancholia—possibly a few supposedly organic conditions—are the result of interruptions in a chain of metabolic processes. Such statements, like the frequently made claim of “suboxidation” or “impaired oxygen” as a cause of disease, mean nothing unless they can be substantiated

by some sort of evidence that may be subjected to critical evaluation. Pemberton has been impressed by the similarity of the conditions mentioned to the neuropsychiatric symptoms observed in arthritic patients. He therefore assumes similar underlying causes; and since the treatment of many cases of arthritis from the standpoint of the existence of metabolic upsets has been favorable in his hands, Pemberton advocates an analogous procedure in the relief of the less complicated disturbances of the nervous functions.

For the conditions described, lowered sugar tolerance and changes in equilibrium of the blood gases and in the content of certain other constituents of the circulating medium have been among the features detected by laboratory examinations. These have been interpreted to be due to metabolic errors involving some phase of local or general oxidative functions. Treatment is therefore directed toward the relief of such conditions. As Pemberton expresses it, part of the metabolic process apparently concerned is, broadly speaking, oxidative in nature. In this is included the delivery of oxygen, the removal of the products of combustion, or both. Interruption of the normal course of events may be due to a large number of factors, among which are external physical conditions, the endocrine system, focal infection, malfunction of various viscera, and various metabolic insults. Appreciation of the general nature of this disturbance makes possible the stimulation of metabolic functions by a variety of measures, on the one hand, and adjustment of the metabolic load, on the other. A combination of the two measures is sometimes helpful or necessary.

One of the ways of “adjusting the metabolic load” is through the path of economy in diet. The load may be lightened by a reduction in food intake, often with success, as has been reported in the treatment of arthritis. Another scheme consists in the use of hydrotherapy or external application of heat, measures often attempted without much consideration of what they may actually bring about in the organism. In a recent issue of *THE JOURNAL*, Pemberton and Crouter<sup>6</sup> have indicated that the percentage oxygen saturation of the peripheral blood tends to rise with increased local or body temperature when this is caused by external heat. It was found that during electric “bakes” the sweat almost invariably changes its hydrogen-ion concentration or “reaction,” whatever this may have been at the start. It is generally about neutral at the outset, but becomes more alkaline or less acid as the bake progresses. This is merely a hint of deeper seated physiologic changes.

It would be rash, indeed, to expect to find a panacea for nervous ills in any specific form of physical therapy or dietotherapy; but there can be no harm in pointing to suggested possibilities.

2. Bloor, W. R.: Lipemia, *J. Biol. Chem.* **49**: 201 (Nov.) 1921.

3. Blatherwick, N. R.: Observations on Blood Fat in Diabetes, *J. Biol. Chem.* **49**: 193 (Nov.) 1921.

4. Marsh, P. L., and Waller, H. G.: The Relation Between Ingested Fat and the Lipemia of Diabetes Mellitus, *Arch. Int. Med.* **31**: 63 (Jan.) 1923.

5. Pemberton, Ralph: The Nature of Certain Functional Nervous Disturbances and Their Treatment Along Metabolic Lines, *Arch. Neurol. & Psychiat.* **9**: 208 (Feb.) 1923.

6. Pemberton, Ralph, and Crouter, Caroline Y.: The Response to the Therapeutic Application of External Heat, *J. A. M. A.* **80**: 289 (Feb. 3) 1923.



## THE FORMATION OF GALLSTONES

The current hypotheses regarding the formation of gallstones are numerous and somewhat discordant. A simple concentration of bile cannot be the foremost cause of concentration formation, for the secretion of the liver can be desiccated to a considerable extent without necessarily leading to the precipitation of less soluble constituents from the somewhat inspissated fluid. Of late we have been taught to believe that concentration of the bile in the gallbladder is a common physiologic phenomenon incident to the temporary storage of the secretion there. It would strain our belief in the fitness of nature to assume that the organism would commonly avail itself of a process easily liable to bring about deposition of bile constituents and consequent calculus formation. Increased concentration of cholesterol, bile pigments or calcium salts may well be contributing factors in the pathogenesis without being direct causes of cholelithiasis.

It is commonly taught, therefore, that infection of the biliary tracts usually plays a significant part in cholelithiasis. While the possible importance of the bacterial factor cannot be denied, there are evidences that infection is not the sole disturbance that may lead to the precipitation of bile constituents. It has been shown that a sterile thread inserted into the gallbladder may become encrusted with the calcium salts of the bile pigments, even though the organ remains free from infection. New demonstrations have been furnished recently by Rous, McMaster and Broun<sup>1</sup> of the Rockefeller Institute for Medical Research. They have observed calculus formation in the walls of tubes of rubber and glass adjusted under sterile conditions to collect bile from experimental animals. The stones were never present in the ducts themselves, and they did not occur when the collecting systems remained clear of organic debris, such as dead cells and mucus.

In the experiments just related, the stones were made up of calcium bilirubinate and calcium carbonate, with a scaffolding of organic material. Cholesterol was not demonstrable in them. The majority had a center of calcium bilirubinate surrounded by an envelop of crystalline, slightly pigmented carbonate; but stones consisting almost wholly of one or the other substance were encountered. Frequently a number of pigment stones were secondarily united in a matrix of carbonate. The relation of the calculi to the organic debris associated with them differed significantly. Those formed primarily out of carbonate originated in the midst of lumps of the debris, as the microscope showed, whereas the minute pigment stones were so situated as to suggest that they, or their original nuclei, had once been free in the bile, but had been caught in the debris and retained. Some of the pigmented

calculi were large and of such shape as to leave no doubt that deposition had occurred on them in situ.

In those cases in which infection does play a determining part in gallstone formation, it seems to act, according to Rous and his co-workers, by damaging the duct walls with resulting desquamation, and by lessening the ability of the bile channels to rid themselves of the cell debris. The latter induces, or furthers, the direct deposition of solids, and may catch and retain potential nuclei for stone formation, in the shape of pigment particles from higher up in the biliary system, which would under ordinary circumstances be voided with the bile. It should be recalled that the sterility of a hollow viscus or duct is maintained in large part by its free evacuation. Any stasis produces conditions favoring the growth of micro-organisms that may happen to lodge behind an obstructing mass. Secondary infections, sometimes due to an escape of bacteria into the bile from the liver, may lead to new gallstones or new layers of old ones. Indeed, it has been asserted that many of the more serious consequences of cholelithiasis are due to such infections rather than to the mechanical effects of the biliary calculi.

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*Current Comment*

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## FUMIGATION WITH HYDROGEN CYANID

A deadly poison in the hands of a person not fully aware of the danger inherent in it, or lacking intelligence and skill to guard against the hazard, is as much to be feared as dynamite. Manufacturers and distributors of such poisons who entrust them to ignorant and unskilled persons should be held jointly responsible with the users for the consequences. A community that permits the sale of a deadly poison to any adult who represents that it is to be used for a lawful purpose, without requiring him to show that he knows how to safeguard against danger inherent in its use, must hold itself, too, responsible for the results. And communities, manufacturers, distributors and users may all consider seriously the recent deaths of six persons in Chicago as the result of fumigation with hydrogen cyanid. On the night of March 3, the owners of a basement restaurant in Chicago turned over the restaurant to a man engaged in the extermination of insect pests, to have the roaches destroyed by him. This he undertook to accomplish by fumigation with hydrogen cyanid, generated by the interaction of sulphuric acid and a sodium cyanid solution. The operator claims that he sealed all openings leading from the restaurant into the upper stories of the building, which were used as residential flats, and that he warned the occupants to keep their windows open during the night. After the tragedy that followed, however, it was discovered that an opening through which a water pipe passed had been overlooked, and not sealed, and that the windows of the apartment on the second floor had been closed. The hydrogen cyanid leaked from the restaurant into the apartments above, and six of the occupants lost their

1. Rous, Peyton; McMaster, P. D., and Broun, G. O.: The Experimental Production of Gall-Stones in Dogs, in the Absence of Infection, Stasis and Gall Bladder Influence upon the Bile, *Proc. Soc. Exper. Biol. & Med.* **20**: 128, 1922.



lives. One man escaped, who happened to sleep, fortunately, near an open window. Hydrogen cyanid has been extensively used in the disinfection of ships, grain elevators, greenhouses and storage warehouses, and in army camps. Always the strictest precautions have been used, and recently those engaged in the work and liable to come within range of the fumes have been equipped with gas masks. To a certain extent, hydrogen cyanid has been used for the disinfection of dwelling houses and apartments, possibly more frequently than has been commonly recognized, for often the extermination of insects is undertaken on a commercial basis by persons who do not disclose the nature of the methods used. Here and there, a community, possibly awakened by a tragedy such as has just occurred in Chicago, has passed regulations to safeguard its people against such dangers; but generally, beyond limiting the sale of such deadly poisons as sodium cyanid and hydrocyanic ("prussic") acid to adults buying them for lawful purposes, no restrictions have been imposed. The seriousness of the situation is shown with tragic force by the accident in Chicago. The health authorities of the country should recognize the danger and take precautions against it, without waiting for deaths to occur within the communities which they serve.

#### THE ACTION OF DRUGS ON RESPIRATION

The remarkable coordination of the activities that characterize the phenomena of respiration has been one of the features responsible for the belief in the existence of a respiratory center in the medulla oblongata. Despite the usual exhibitions of function in which both inspiratory and expiratory muscles play their part in a well adjusted rhythm, every-day experience teaches that a certain degree of independence must exist between the two antagonistic phases of the respiratory act. In coughing, for example, the expiratory factor becomes greatly exaggerated. One mode of treatment consists in an attempt to decrease the rate of respiration by the use of drugs, familiar illustrations being afforded by the effects of alkaloids of the morphin group supposed to depress the respiratory center as a conspicuous feature of their general depressant action on the central nervous system. In a series of unusually interesting researches in the Laboratory of Pharmacology at the University of Pennsylvania, Schmidt and Harer<sup>1</sup> have furnished cogent evidence, for certain species at least, that some drugs may depress expiration selectively, or at least depress expiration more than inspiration. It was found to be conspicuously true of morphin and diacetylmorphin (heroin), which are looked on almost as specifics in their ability to relieve cough and to decrease the rate without affecting the depth of breathing. Various other depressants, such as ether, chloral hydrate and urethane, exhibit a marked tendency to make expiration passive without depressing inspiration; but usually they show this effect only in narcotic doses. Caffeine

and strychnin antagonize the depression of expiration; atropin does not. It is too early to dwell on the details of these interesting observations. If, however, they should pave the way to a cogent demonstration of the existence of a separate central nervous mechanism for the control of each of the phases of respiration, a great step in advance will be recorded. Perhaps the present conception of a respiratory center will be replaced by that of a twofold organ, an expiratory center and an inspiratory center, the former set at a higher threshold for chemical stimuli than the latter. Practical therapy is eagerly awaiting new clues for the discriminating use of drugs that act on respiration.

#### INCOME TAX: TRAVELING EXPENSES HELD NOT DEDUCTIBLE

The Commissioner of Internal Revenue has declined to reverse his ruling to the effect that the traveling expenses of a physician incident to attendance at a meeting of a medical society are not ordinary and necessary expenses incurred incident to the practice of medicine, and that they are, therefore, not deductible. Physicians are advised to file their returns without taking credit for any traveling expenses that they may have incurred by reason of attendance at such meetings. The ruling in this case seems so clearly inconsistent with the law and with the practice of the Bureau of Internal Revenue with respect to deductions for traveling expenses under other circumstances that efforts will be continued to obtain a review of the decision and its reversal.

### Association News

#### THE SAN FRANCISCO SESSION Scientific Exhibit

The following have been appointed on the Advisory Committee of the Scientific Exhibit: Dr. Charles C. Bass, New Orleans; Dr. Frank W. Hinman, San Francisco; Dr. W. T. Longcope, Baltimore; Dr. H. E. Robertson, Rochester, Minn., and Dr. Rea Smith, Los Angeles. The Committee from the Board of Trustees consists of Dr. D. Chester Brown, Chairman; Dr. Frank Billings, and Dr. Wendell C. Phillips.

The Scientific Exhibit will be located on the main floor of the Civic Memorial Auditorium. The Registration Bureau, Information Bureau and Commercial Exhibit will be on the same floor; also the sections will meet in this building, so that here will be the center of activities.

The Committee on Scientific Exhibit is desirous that the exhibits shall be presented in a way which will emphasize their scientific value; this may be done by carefully worded explanatory placards and by personal demonstration. Also, the general attractiveness of the exhibit is very essential, and to aid in the appearance, the Committee on Scientific Exhibit will do its part by having the booths appropriately painted.

In connection with the exhibits there will be a motion picture theater for the exhibition of lantern slides and motion pictures.

Application forms may be obtained from the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago. The committee will make no assignments previous to May 1, in order that the amount of space available may be apportioned to the best advantage of all concerned. All applications must be received before this date.

1. Schmidt, C. F., and Harer, W. B.: The Action of Drugs on Respiration, I, The Morphin Series, *J. Exper. Med.* **37**: 37 (Jan.) 1923; II, Ether, Chloroform, Chloral, Urethane, Luminal, Magnesium, Caffeine, Strychnine and Atropine, *ibid.* **37**: 69 (Jan.) 1923.



## San Francisco Hotels and Rates

The following partial list of San Francisco's leading hotels has been submitted to THE JOURNAL by Dr. W. E. Musgrave, chairman of the Local Committee of Arrangements. It will be noted that in certain instances it is stated definitely whether the rates apply to single or double rooms, while in

## LEADING HOTELS OF SAN FRANCISCO (ALL EUROPEAN PLAN), THEIR LOCATION AND RATES

Hotel	Street Address	With Bath	
		Single	Double
Argonaut .....	4th and Market Sts.	\$2.00-\$2.50	\$3.00-\$3.50
Baldwin .....	321 Grant Ave.		3.00
Bellevue .....	Geary and Taylor Sts.	3.50	5.00
Cartwright .....	524 Sutter St.	2.50-3.00	3.00-4.00
Cecil .....	545 Post St.	8.00	12.00
Chancellor .....	433 Powell St.	2.50	3.50-4.00
Clark .....	217 Eddy St.	2.00	2.50
Clift .....	Geary and Taylor Sts.		8.00
Court .....	205 Bush St.	3.00	4.00
*Fairmont .....	California and Mason.		7.00-10.00
Federal .....	1087 Market St.	2.50, 3.00, 3.50	
Golden West .....	Powell and Ellis.	3.00-4.00	
Grand .....	57 Taylor St.	2.00, 2.50, 3.00	
Herbert's (men only) .....	151 Powell St.	2.00-3.00	
Keystone .....	54 Fourth St.	2.50-3.50	
Lankershim .....	55 Fifth St.	3.50	
Larne .....	210 Ellis St.	3.00-4.50	
Manx .....	Powell and O'Farrell.	4.00-5.00	
*Palace .....		8.00-10.00	
Plaza .....	Post and Stockton Sts.	5.00-6.00	
Richelieu .....	Geary & Van Ness Ave.	5.00 (single or double)	
Somerton .....	440 Geary St.	2.00-4.00	
St. Francis .....	Union Square.	4.00-10.00	
Stewart .....	353 Geary St.	3.50-7.00	
Sutter .....	Sutter and Kearny Sts.	4.00	
Stratford .....	Powell and Geary.	6.00	
Turpin .....	Powell at Market St.	3.00-3.50	
Victoria .....	Bush & Stockton Sts.	2.50-4.00	
*Whitcomb .....	Market & Civic Center	4.00-8.00	
Wiltshire .....	340 Stockton St.	3.00-4.50	

\* Reservations all booked.

other instances this information is not given in the list. It will also be noted that three hotels marked with an asterisk have already booked their capacities, and no further reservations are available. Those who wish to secure hotel accommodations at San Francisco may write direct to any hotel listed below or to Dr. W. E. Musgrave, Chairman, Local Committee of Arrangements, 806 Balboa Building, San Francisco.

## Invitation from Medical Society of Hawaii and Governor Farrington

The following telegram, transmitted by wireless to San Francisco and thence by usual telegraphic communication, has been received at the offices of the American Medical Association:

I am pleased transmit cordial invitation of Medical Society of Hawaii to Fellows and members American Medical Association visit Hawaii after Annual Meeting San Francisco. I trust large number your members be able accept. Farrington, Governor Hawaii.

## Steamship Service Between Los Angeles and San Francisco

Those who go by way of Los Angeles to the annual session may proceed from Los Angeles to San Francisco by steamship if they will stipulate when tickets are purchased that they read via the Los Angeles Steamship Company. No additional charge will then be incurred. The Steamships *Yale* and *Harvard* of this company operate four times a week each way between San Francisco and Los Angeles, leaving Los Angeles at 4 p. m. every Tuesday, Wednesday, Friday and Sunday. Eighteen hours is required for the ocean trip from Los Angeles to San Francisco.

## Special Train for Massachusetts Medical Society

A special tour for the Massachusetts Medical Society has been arranged under the direction of the Raymond and Whitcomb Company for the Fellows of that society and their

friends who will attend the Annual Session. Leaving Boston at 2:10 p. m., June 14, the Massachusetts party will go to San Francisco by way of Chicago, Colorado Springs, the Royal Gorge, Salt Lake City, Riverside, Los Angeles, Yosemite and Big Trees, reaching San Francisco, Sunday, June 24. The return trip may be made either by way of Portland, Seattle, Vancouver and the Canadian Rockies, or by the direct Overland route by way of Ogden, Omaha and Chicago. For more detailed information concerning this tour communicate with the Raymond and Whitcomb Company, 112 South Dearborn Street, Chicago, or 17 Temple Place, Boston.

## ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

The annual congress met in the Florentine Room of the Congress Hotel, March 5, at 9:30 a. m., and was called to order by Dr. Arthur Dean Bevan, chairman of the Council on Medical Education and Hospitals. Dr. Louis B. Wilson, Rochester, Minn., presented a report of the Committee on Graduate Medical Education. Dr. E. Stanley Ryerson, secretary of the Faculty of Medicine of the University of Toronto, presented a paper on "Coordination of the Courses as a Means of Increasing the Efficiency of the Medical Curriculum." Dr. Arthur Dean Bevan presented a plan for revision of the medical curriculum. There was a full discussion. Dr. Robert W. Lovett, chairman, presented a preliminary report of the Committee on Trained Nursing and Dr. Richard Olding Beard of Minneapolis presented a minority report for this committee.

At the afternoon session a paper by Dr. H. M. Platter, secretary of the Ohio State Medical Board, was presented on the "Enforcement of the Medical Practice Act." Dr. K. C. Babcock of the University of Illinois read a paper, "Some Needed Revisions in Medical Licensure." Dr. Alexander Macalister discussed "The Hospital Intern Year as an Essential for the License." Dr. C. F. Humiston discussed the new medical practice act for the state of Illinois.

At the session of Tuesday, March 6, the following papers were read and discussed:

**Medical Education:** "The Danger of the Stereotyped Curriculum," Dr. Charles P. Emerson, dean and professor of medicine of the Indiana University School of Medicine, Indianapolis. "Present Ideals of the Physical Plant in Medical Education": (a) Dr. Charles R. Bardeen, dean and professor of anatomy of the University of Wisconsin Medical School, Madison; (b) Dr. G. Canby Robinson, dean, Vanderbilt University School of Medicine, Nashville, Tenn. "The Art of Medicine," Dr. Irving S. Cutter, dean, University of Nebraska College of Medicine, Omaha.

**Hospital Service:** Introductory remarks, Dr. Frank Billings, president of the American Conference on Hospital Service, Chicago. "The Role of Nonmedical Clinical Assistants in Hospitals, Without Interns," Dr. S. S. Goldwater, director, and Dr. W. M. Bluestone, assistant director, Mount Sinai Hospital, New York; discussed by Drs. Charles P. Emerson, John M. Dodson and N. P. Colwell. "Liability of the Hospital for the Acts of Its Servants," John A. Lapp, director, Department of Social Action, National Catholic Welfare Council, Chicago; discussed by Drs. M. L. Harris and A. R. Warner. "The Relation of the State University Hospital to the Medical Profession," Dr. C. P. Howard, professor of medicine, State University of Iowa College of Medicine, Iowa City; discussed by Drs. Ray Lyman Wilbur, Irving S. Cutter and C. R. Bardeen. Annual report of the Hospital Library and Service Bureau, by the director, Miss Donelda R. Hamlin, Chicago. A complete report of these sessions will appear in THE JOURNAL next week.

**Statue of Jenner in Japan.**—On the west coast of Japan in a small fishing town, until recently very isolated and formerly ravaged by smallpox, there stands a monument to Edward Jenner, erected by a grateful people.—*Med. Press*, Feb. 7, 1923.



## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALASKA

**Medical Missionary Needed.**—It is announced by the director of educational work for the Presbyterian Board of Home Missions of New York that a medical missionary is urgently needed for Cape Prince of Wales.

### ARIZONA

**Date of State Medical Meeting Changed.**—The thirty-second annual meeting of the Arizona Medical Association will be held at Grand Canyon, June 21-22, instead of at Phoenix in April, as previously announced. The change was made so that the meeting would just precede that of the American Medical Association in San Francisco. Dr. A. L. Gustetter, Nogales, is president of the society, and Dr. D. F. Harbridge, Phoenix, secretary.

### CALIFORNIA

**Dr. Deacon Exonerated.**—Dr. George Deacon, Pasadena, who, it is alleged, was charged with administering narcotics to an addict, was exonerated by the state board of medical examiners at Los Angeles, February 14.

**University Promotions.**—Twenty-five members of the faculty of Stanford University School of Medicine, San Francisco, have been given promotions, it was announced, February 21. The following associate professors have been promoted to professorships: Dr. Frank E. Blaisdell, surgery; Dr. John F. Cowan, surgery; Dr. Charles H. Danforth, anatomy; Dr. Ernest C. Dickson, medicine; Dr. Leonard W. Ely, orthopedics; Dr. Harold K. Faber, pediatrics. Assistant professors becoming associate professors are: Dr. W. Edward Chamberlain, radiology; Elmer E. Drew, physics; Dr. Ludwig A. Emge, obstetrics and gynecology; Dr. Henry G. Mchrtens, neurology, and Dr. Clelia D. Mosher, personal hygiene and medical adviser to women. Dr. Albert V. Pettitt, formerly instructor in obstetrics and gynecology, is now assistant professor.

### CONNECTICUT

**Epidemic (Lethargic) Encephalitis in Connecticut.**—The first cases of epidemic (lethargic) encephalitis in Connecticut were reported in 1919, the bureau of preventable diseases announces. There were forty cases reported in 1920; seventy-four in 1921, and forty-seven in 1922. Since January 1 of this year, thirty cases have been reported. The increase in the number of cases this year it is said, may be due to an increased interest in the disease and more accurate diagnosis. Encephalitis was made reportable to the state department of health, Nov. 11, 1921.

### ILLINOIS

#### Chicago

**Cook County Medical Examiner Appointed.**—Dr. Frank J. Pokorney, Chicago, has been appointed medical examiner for Cook County, it was announced by the president of the board of county commissioners, March 3. Preparation of a county civil service eligible list and the necessity for examination by a physician of many of the applicants caused the appointment of Dr. Pokorney. All persons about to be retired from the county's service on pensions or because of disability will also be examined.

**Tuberculosis Conference.**—The executive officers of the National Tuberculosis Association held a three day session at the Hotel LaSalle, February 26-28. It was stated there are 65,000 hospital beds available for tuberculous patients in the United States and that there are more than 1,000,000 cases of the disease. A standard system of home treatment teaching which would permit the discharge of a patient from the sanatorium in three months was outlined. A visiting service would care for the patient following his discharge. A total of \$5,000,000 was the goal set by the conference for 1923.

**Hospital News.**—The campaign to collect two thirds of a million dollars which was necessary before one third of a

million left by the will of John P. Wilson, for the benefit of the Children's Memorial Hospital, could be secured, was successfully completed, March 3.—Work will soon start on the nurses' home to be erected by Michael Reese Hospital.—The cornerstone for the training school for home and public nursing at Monroe and Loomis streets, was laid, February 18. The building will also house free dental clinics for the children of Chicago. Money for this project was derived from the Pagant of Progress exhibitions.

### INDIANA

**Epidemic Bacillary Conjunctivitis.**—Reports from Gilcad state that pink-eye is prevalent in the local schools. In some schools the incidence of the malady has been 100 per cent. of the pupils.

**Child Hygiene.**—The child hygiene division of the state board of health recently conducted a two weeks clinic in Clinton County. Lectures were given on child welfare, and moving pictures on health were shown in the public schools.

**Dinner for Dr. Bloodgood.**—Dr. Joseph C. Bloodgood, Johns Hopkins University, Baltimore, was the guest of honor at a dinner given by the Terre Haute Academy of Medicine, February 2. Following the dinner Dr. Bloodgood gave a stereopticon lecture on "Cancer of the Breast."

**Distribution of "Patent Medicines" to Be Stopped.**—The city health department of Indianapolis, of which Dr. Herman Morgan is secretary, is taking steps to stop the practice of distributing samples of "patent medicines" on porches of homes in Indianapolis. This practice is in violation of a city ordinance, which prohibits the distribution of samples of medicine, except by handing the samples directly to adults.

**Personal.**—Dr. Charles J. McIntyre has been elected president of the Indianapolis Association for the Prevention and Relief of Heart Disease.—Drs. Noah H. Thompson and Walter A. Domer were hosts at a banquet for the members of the Wabash County Medical Society at the Indiana Hotel, Wabash, February 15.—Dr. William M. Varble, Jeffersonville, has been elected secretary of the board of health of Clark County to succeed the late Dr. David C. Peyton.

### IOWA

**University News.**—The medical library of Sir Norman Walker of Edinburgh University, Scotland, has been offered to the State University of Iowa College of Medicine, Iowa City, through Dr. Walter L. Bierring, Des Moines. The gift has been accepted by the university. Sir Norman visited the university two years ago as a member of a commission of European physicians and surgeons and was favorably impressed by the medical work being done at the university.

**Personal.**—Dr. John J. Lambert, professor at the State University of Iowa College of Medicine, won the golf championship of Iowa City and Iowa University recently on the Country Club links.—Dr. John J. B. Morgan, director of the psychologic clinic in the State University of Iowa College of Medicine, Iowa City, addressed the twenty-third annual meeting of the Nebraska Conference of Social Workers at Omaha, February 12, on "The Menace of the Feebleminded."—President Harding has dismissed Surg. Waldo H. Sanford, Colfax, from the U. S. Public Health Service, it is reported.

### KANSAS

**Physician Convicted of Murder.**—The Kansas Board of Medical Registration and Examination reports the revocation of the license of Dr. W. A. Nixon, Great Bend. He was convicted of murder in the first degree, and was sentenced to the state penitentiary at Lansing for life.

### KENTUCKY

**Health Board to Conduct Free Examinations.**—Free physical examinations will be given to many thousands in Louisville under supervision of the faculties of the medical and dental colleges of the University of Louisville, it was announced, February 17, by Dr. Arthur McCormack, secretary of the state board of health, following a joint meeting of the faculties, the deans of the colleges and representatives of the board of health. The work will be done through the cooperation of the university officials with the Jefferson County Medical Society and the county dental society. This is the first step in a movement to demonstrate to the public the importance of periodic physical examinations for everybody, as a measure to reduce the death rate from preventable disease.



## LOUISIANA

**Hospital News.**—A state-wide campaign to collect \$400,000 for the Charity Hospital, New Orleans, will be inaugurated, May 12, National Hospital Day.

## MAINE

**Androscoggin Sanatorium Reopened.**—The tuberculosis sanatorium owned by the Androscoggin Antituberculosis Association, used until recently by the federal government for the care of ex-service men, has been reopened by the association for local use. Dr. Ralph Goodwin is the physician in charge.

## MARYLAND

**Epidemic (Lethargic) Encephalitis to Be Investigated.**—Dr. William T. Howard, former assistant commissioner of health, and Dr. John F. Hogan, director of the bureau of communicable diseases, Baltimore City Health Department, are studying the epidemic (lethargic) encephalitis situation in Baltimore, at the request of the state commissioner of health. The investigation will cover records in Baltimore for many years past, in order to obtain information on which to base an accurate statement as to the nature and cause of the present outbreak.

**Influenza and Pneumonia Records for Month.**—Seventy-nine deaths from influenza and 2,641 cases of the disease were reported in Baltimore during the month of February, according to a bulletin issued by the Baltimore City Health Department. There were 376 cases of bronchopneumonia, with 158 deaths. Of lobar pneumonia, there were 292 cases, with 102 deaths. During the month, seven cases of epidemic (lethargic) encephalitis were reported and six deaths, the heaviest monthly toll in the recent history of the health department. The influenza situation is showing considerable improvement.

**Personal.**—Dr. Thomas S. Cullen, professor of clinical gynecology at the Johns Hopkins Medical School and visiting gynecologist at the hospital, is a patient in the hospital, where he recently underwent an operation for gallstones.—Dr. Thomas B. Fletcher, associate professor of clinical medicine at the Johns Hopkins Hospital, is a patient at the Johns Hopkins Hospital, suffering from an attack of pneumonia. Dr. Daniel Jenifer has been appointed a health officer for Baltimore County, succeeding Dr. John S. Green, resigned.—Dr. John W. Ebert has been appointed physician to the Baltimore County Jail, at Towson, succeeding the late Dr. Joshua Royston Green.—Dr. Arthur P. Herring, commissioner of mental hygiene for Maryland, spoke to the members of the Democratic Women's Club of Baltimore, March 1, on "The Mental Hygiene Clinic."

## MASSACHUSETTS

**Illegal Practitioner Sentenced.**—According to press reports, Robert Thompson, Boston, was found guilty in the Suffolk superior criminal court, recently, and sentenced to three months in jail, for practicing medicine without a license.

**Entire Hospital Staff Resigns.**—Twenty-one members of the staff of the Quincy City Hospital, including Chief-of-Staff N. S. Hunting, resigned in a body, February 18. Recent changes in the management were said to be responsible for the resignations. Mayor Bates announced, February 20, that he had obtained a staff of physicians to replace those who resigned.

**Boylston Medical Prize Awarded.**—The Boylston Medical Prize of Harvard Medical School, Boston, has been awarded by a committee composed of Drs. Reid Hunt, William T. Porter, John Warren and Henry A. Christian to Prof. Alfred N. Richards, Ph.D., and Dr. Joseph T. Wearn of the University of Pennsylvania, Philadelphia, for an essay entitled, "Observation on the Composition of the Glomerular Urine with Particular Reference to the Problem of Reabsorption in the Renal Tubules." The prize awarded was \$500.

**Dinner to Dr. Schick.**—Under the auspices of the state board of health, the city board of health and the department of preventive medicine and hygiene of Harvard University Medical School, a dinner was given in honor of Dr. Béla Schick of Vienna at the Hotel Lenox, Boston, February 8. Dr. Francis X. Mahoney, city health commissioner of Boston, presided, and Dr. Rosenau was toastmaster. Dr. Schick was presented with a gold set of the equipment used by the city Schick staff. It was announced that 30,000 children in the city of Boston have been Schick tested since May 1, 1922.

**White Memorial Fund Health Unit.**—The trustees of the George Robert White fund have awarded the contract for

the construction of the first health unit to be erected with the income from the fund. The building will be erected on the site of the old police station at Commercial and Battery streets. The total cost will be about \$185,000. The building will be three stories high, and will contain an auditorium, an emergency hospital, dental clinics, medical examination rooms and the quarters for the district nursing association. Health Commissioner Mahoney expects to appoint the nurses, physicians and dentists for the clinic about December 1.

## MICHIGAN

**The Beaumont Lectures.**—The Beaumont Lectures for 1923 were delivered before the Wayne County Medical Society at Detroit, January 29-30. Dr. J. R. Macleod, professor of physiology at the University of Toronto, Canada, delivered the first two lectures on "The Physiology and Pathology of the Pancreas and the Demonstration of New Discoveries of Pancreatic Hormones." The third lecture was delivered by Dr. F. G. Banting of the University of Toronto, on "Clinical Work on Insulin."

## MINNESOTA

**Epidemic (Lethargic) Encephalitis in the State.**—Between thirty and thirty-six cases of epidemic (lethargic) encephalitis have been reported in Minnesota, according to records of the state department of health. Dr. A. J. Chesley, secretary, stated that the cases are distributed in the following counties: Anoka, Hennepin, Lake, Ramsey, Stevens, Ottertail, St. Louis, Olney, Polk, Swift, Faribault, Goodhue and Big Stone.

**Personal.**—Dr. Albert J. Chesley, executive officer of the state board of health, has been awarded the Cross of Valor of Poland for his services in that country during the World War.—Dr. Henry F. Helmholz of the Mayo Clinic, Rochester, spoke on "Diagnosis and Treatment of Pyelitis in Infancy and Childhood" before the Jackson County Medical Society at Kansas City, Mo., February 20.—Dr. Arthur T. Laird, Nopeming State Tuberculosis Sanatorium, St. Louis County, was recently elected president of the Minnesota Occupational Therapy Association in Minneapolis.—Dr. Hazel Bonness of the state board of health has been appointed chief of the division of child welfare of the Montana Board of Health.

## MISSOURI

**Health Unit Organized.**—In accordance with the recent decision of the St. Louis County Court to adopt a health unit system to replace the office of health commissioner for the county, Dr. William F. O'Malley, Webster Groves, was appointed head of the unit, February 23, for a period of three years.

**Professor Hinrichs Dead.**—Reports have been received of the death of Gustavus Detlef Hinrichs, a graduate of the University of Copenhagen and for many years professor of chemistry in St. Louis University School of Medicine. Professor Hinrichs founded in 1875 the first state weather service in the United States. Nearly fifty volumes of scientific memoirs in German, Danish, English and French came from his pen.

**St. Luke's Hospital Opened.**—St. Luke's Hospital, Kansas City, was formally opened to the public, February 25, by the Rev. Sidney Partridge, bishop of the Protestant Episcopal Diocese of Western Missouri. This institution, which was built and equipped at a cost of nearly \$700,000, has accommodation for 125 patients; but when fully completed will have a capacity of 400. One entire floor is designed and reserved especially for obstetric patients.

## NEW HAMPSHIRE

**Antivaccination Bill.**—A bill has been introduced into the legislature of New Hampshire which provides that children of parents opposed to vaccination be exempted from the requirement that they be vaccinated before attending school.

## NEW MEXICO

**State Medical Meeting.**—The forty-first annual meeting of the New Mexico Medical Society will be held at Albuquerque, June 19-21, under the presidency of Dr. Harry A. Miller, Clovis, just preceding the annual session of the American Medical Association.

## NEW YORK

**A Birth Control Bill.**—There is before the New York State Legislature a bill entitled "An act to amend the penal code relative to the furnishing by physicians of information and



articles for the prevention of conception." The text of the bill provides that

The giving by a physician to any person, married or having a license to be married, of any information or advice in regard to the prevention of conception, on application of such a person to a physician, is not an offense, neither is it an offense to supply, on written prescription of a physician, any article, instrument, drug, receipt or medicine for the prevention of conception.

**Physicians' Signatures Forged for Liquor.**—According to an announcement made by Gus J. Somons, chief prohibition officer of the state, signatures of physicians have been forged to prescriptions for liquor in a systematic manner, and many unscrupulous physicians and druggists are supplying liquor. As one method of obtaining signatures men representing themselves as prohibition agents visit physicians to check up on signatures and get copies of the physicians' signatures on pads. These signatures are then forged on prescriptions, and the prescriptions are sold to druggists at prices varying from \$1 to \$1.50 each.

**Investigation Into Causes of Ward's Island Fire.**—An investigation into the causes of the Ward's Island fire, in which twenty-five lives were lost, was conducted jointly by the state hospital commission and a committee from the board of managers of the hospital. It is understood that no agreement has been reached as to the exact cause of the fire. Governor Smith, in a special message to the legislature, recommends submitting to the voters of the state a proposal for a bond issue of \$50,000,000 for the erection of new state hospital buildings as well as an appropriation of \$1,438,950 for urgent repairs and the removal of fire hazards at these institutions.

#### New York City

**Fellowship in Pathology Founded at Mount Sinai Hospital.**—A dinner was tendered Dr. Emanuel Libman, February 23, by his associates and pupils as a tribute to his twenty-five years of active service as associate pathologist to Mount Sinai Hospital. Dr. Frederick S. Mandlebaum, pathologist of the hospital, was toastmaster. Following the dinner, it was announced that a fund of \$25,000 had been completed to found the Emanuel Libman fellowship in pathology.

**Personal.**—Dr. Simon Flexner delivered an address on "Poliomyelitis, Encephalitis and Allied Conditions" before the section on biology of the Academy of Sciences of the American Museum of Natural History, recently.—A reception was given recently in New York in honor of Dr. Rosalie S. Morton and Senator Royal S. Copeland. Dr. Morton, who was head of the American Women's Hospital during the World War, was recently decorated by the French government.

**Cancer Society Meets.**—The annual meeting of the American Society for the Control of Cancer was held, March 3, in the Pennsylvania Terminal Building. The following officers were elected for the coming year: Dr. Rudolph Matas, New Orleans, vice chairman; Dr. Howard C. Taylor, vice president; Calvert Brewer, secretary, and Thomas M. Debevoise, treasurer. The board of directors has elected the following physicians as members of the executive committee: Howard C. Taylor, Clement Cleveland, Haven Emerson, John C. A. Gerster, Howard Lilienthal, George H. Semken, Francis Carter Wood, Joseph Colt Bloodgood, Thomas S. Cullen, Robert B. Greenough and Edward Reynolds.

**Hospital News.**—The Polyclinic Hospital, which was turned over to the government in 1918 for the treatment of disabled veterans, was formally opened to the public, February 27, with memorial services for its founder, Dr. John A. Wyeth. The hospital has been renovated throughout.—A section of ground at Fifty-Fourth Street and Twelfth Avenue, originally bought by the New York Hospital for a site for a new building, has been sold for commercial purposes. According to the present plan, the hospital is to remain in its present location and an emergency hospital is to be built up-town.—The building at No. 31 Washington Square, now occupied by the Washington Square Hospital, has been sold, and will be remodeled into apartments when the hospital lease expires.—The trustees of Beth David Hospital held their annual banquet at the Hotel Commodore, February 4. More than 400 persons attended. Among the speakers were Bird S. Coler, commissioner of public welfare, and Dr. Royal S. Copeland.

**Low Infant Death Rates.**—According to Dr. Otto R. Eichel, director of the division of vital statistics of the New York State Health Department, Canandaigua, New Rochelle, Ossining, White Plains and Glen Falls have the best records among up-state cities in respect to infant mortality in 1922.

In Canandaigua, the death rate of babies per thousand born alive was 38; in New Rochelle, 48; in Ossining, 52; in White Plains, 53, and in Glen Falls, 54. Five years ago, the infant mortality rate in New Rochelle was 96. In many other cities in this state, the results of child welfare work is equally striking. The Union Hospital in the Bronx has just compiled statistics showing that the death rate for infants in that borough is the lowest in the city for the first two months of 1923. In February, it was 69.8 for every thousand babies under 1 year, while in Queens it was 100.6, and in Manhattan, 92.3. The infant death rate for the entire city for the first six weeks of this year was 75, in comparison with 89 during the same period last year.

#### NORTH CAROLINA

**Epidemic of Measles.**—Dr. Amzi J. Ellington, health officer of Goldsboro, reports 462 cases of measles in the city, 135 occurring in one week and thirty in one day. No fatalities have been reported. Goldsboro has a population of 11,296.

**Personal.**—Dr. Charles Daligny has been elected county health officer of Montgomery County.—Dr. Bomar A. Olds, Henderson, health officer of Vance County, has resigned to accept a position with the Rocky Mount Sanatorium. Dr. Fletcher H. Harris, Henderson, will succeed Dr. Olds.

#### OKLAHOMA

**Hospital News.**—The Durant Memorial Hospital at Durant will be purchased by several local physicians and operated under the direction of the Bryan County Medical Society, it was recently announced.

#### OREGON

**Tuberculosis Association Meets.**—At the annual meeting of the Oregon Tuberculosis Association held in Portland, February 23, A. L. Mills was reelected president. Dr. Caroline Hedger, Chicago, was the principal speaker at the meeting. It was announced that receipts from the Christmas seal sale amounted to nearly \$40,000.

#### PENNSYLVANIA

##### Philadelphia

**Personal.**—Dr. Florence E. Kraker, who was given a year's leave of absence from the Pennsylvania Women's Medical College, where she is lecturer on obstetrics, has arrived in Shanghai to establish a department of obstetrics for Chinese women medical students.—Dr. W. M. L. Coplin, Philadelphia, has published a history of Base Hospital No. 38, the Jefferson Medical College Unit.—Harry Dee Brown has been appointed director of the Philadelphia Health Council and Tuberculosis Committee, to succeed Dr. Blair Spencer, who resigned several months ago. Mr. Brown, who leaves a position with the New York State Committee on Tuberculosis and Public Health, has been engaged in the war against tuberculosis for nearly fifteen years.

#### SOUTH CAROLINA

**State Medical Meeting.**—The South Carolina Medical Association will hold its seventy-fifth anniversary home-coming meeting in the city of Charleston, April 17-19, under the presidency of Dr. C. F. Williams of Columbia. It is desired to get in touch with every South Carolina physician living outside the state, and every graduate of the Medical College of South Carolina. Communications should be addressed to the secretary, Dr. E. A. Hines, Seneca.

#### TEXAS

**State Health Commissioner Appointed.**—Dr. William H. Beazley, Lufkin, was appointed state health officer by Governor Neff, February 21, in succession to Dr. J. H. Florence. Dr. Beazley has been acting health officer since Dr. Florence's resignation, January 1.

**Cousins Medical Bill Passed by State.**—The senate, February 16, passed finally the Cousins medical practice bill, by a vote of 23 to 1. The power to revoke licenses of physicians, vested in the original bill in the state board of medical examiners, was placed by amendment in the district courts. Penalty for violation of the provisions of the bill was reduced by amendment from two to four years in the penitentiary to not more than six months in the county jail or one to four years in the penitentiary. An effort early in the day to exempt chiropractors from the provisions of the bill failed when the motion to that effect was tabled, 16 to 4.



## VIRGINIA

**Hospital News.**—The contract has been let for the construction of the Virginia Baptist Hospital, Lynchburg, at a cost of approximately \$200,000.

## WISCONSIN

**Physician Put on Probation.**—It is reported that Dr. William G. Wheeler, Racine, who was found guilty on a charge of manslaughter, growing out of an illegal operation, was recently put on four years' probation, under the state board of control.

**Personal.**—Dr. Wade H. Fortner, Princeton, who has served as city physician for several terms, has been reappointed for another period of two years.—Dr. L. A. Steffen, Antigo, has been appointed a member of the state board of health to succeed his father, the late Dr. I. D. Steffen.

**New Secretary for State Society.**—Following the lead of the state medical societies of Ohio and Virginia, the State Medical Society of Wisconsin has employed a fulltime lay executive secretary. The council at its annual meeting, January 29, elected Mr. J. G. Crownhart, Madison, to fill the position, with headquarters in Milwaukee. In addition to his duties as secretary, he will, under direction of the council, be the business manager of the association and managing editor of the *Wisconsin Medical Journal*. Dr. L. Rock Sleyser, Wauwatosa, who is giving up the work after ten years of service, will remain as editor of the state journal and as delegate to the American Medical Association.

## WYOMING

**Eugenics Law Passed.**—The state legislature of Wyoming has passed a law under the terms of which a prospective bridegroom must present a physician's certificate showing that he is free from venereal disease in communicable form before a marriage certificate will be issued to him.

## HAWAII

**Effect of Vaccinia on Leprosy.**—The U. S. Public Health Service for January 5 describes the results of vaccination of a number of lepers in the Kalihi Hospital at Honolulu. Twenty-seven patients were vaccinated. Of these, sixteen had the nodular type, four the anesthetic type and seven the mixed. Vaccination was successful in nineteen cases. In the persons unsuccessfully vaccinated, no evidence of any change of the leprosy lesions was noted. Of the nineteen successfully vaccinated patients, eleven developed acute leprosy eruptions in the two weeks following the date of vaccination; in eight cases there was no apparent change in the leprosy lesions.

## PORTO RICO

**Personal.**—Dr. Manuel Pavía has returned to Porto Rico from the United States, where he visited the principal medical centers. He is a member of the legislature of Porto Rico and returned to be present at its opening.—The *Bulletin* of the Porto Rico Medical Association states that Dr. Esteban García Cabrera has left for the United States and will visit the institutions studying genito-urinary problems.

## GENERAL

**Meeting of Medical Women.**—The annual session of the Medical Women's Association will be held in San Francisco, June 25-26, under the presidency of Dr. Grace N. Kimball, Poughkeepsie, N. Y., at the same time as the annual meeting of the American Medical Association. Dr. Kate Campbell Hurd Mead, Middletown, Conn., is president-elect. Headquarters will be at the Hotel Plaza.

**Association of American Medical Colleges.**—At the thirty-third annual meeting of the association, at Ann Arbor, March 2-3, the following officers were elected: president, Dr. Irving S. Cutter, Omaha; vice president, Dr. Ray Lyman Wilbur, San Francisco; secretary, Dr. Frederick C. Zapffe, Chicago; executive council, Dr. Nathaniel C. Allison, St. Louis, and Dr. Walter L. Niles, New York. The next annual meeting will be held at Omaha.

**Birth Rate Decreasing.**—According to statistics compiled by the provisional census bureau of the department of commerce, the birth rate declined and the death rate increased during the last nine months of 1922. The mortality rate ranged from 7.8 in Idaho to 14.3 in Maine, and averaged 11.7 in the states from which statistics were taken for each thousand of population in the period, as compared with an average of 11.6 during the first nine months of 1921. The birth rate

ranged from 18.3, in Washington, to 30, in North Carolina, and averaged 22.8 in the first nine months of 1922, as compared with an average of 25 in the same period in 1921.

**Filled Milk Bill Passes.**—The Filled Milk bill that previously had passed the House of Representatives was adopted by the Senate in the closing days of Congress and thereby was enacted into a law. It declares filled milk an adulterated article of food, injurious to public health, and states that its sale constitutes a fraud on the public. In defining filled milk, it is referred to as any milk, cream or skimmed milk, whether or not condensed, evaporated, concentrated, powdered, dried or desiccated to which has been added or with which is blended any fat or oil other than milk fat. The measure was opposed vigorously throughout the country by manufacturers of filled milk.

**Joint Resolution on Narcotics Passes.**—House Joint Resolution No. 430, calling on the President to urge the governments of Great Britain, Persia and Turkey to limit the production of opium and the growth of the poppy, and on the governments of Peru, Bolivia and the Netherlands to curtail the production of coca leaves, passed both houses of Congress before adjournment, March 4. The resolution prescribed that the minimum production of these narcotics be fixed at the amount necessary for strictly medicinal and scientific purposes. In both houses of Congress the measure went through without a record vote, the sentiment being strongly in favor of its adoption so that no time would be lost in appealing to these foreign governments to stop the increase in the consumption of these habit-forming drugs, both by the American people and by people of other countries. The President is requested in the resolution to report back to Congress on the first Monday in December, 1923, the result of his action.

**Cornerstone of Gorgas Memorial Institute Laid.**—The cornerstone of the Gorgas Memorial Institute for research in tropical diseases and the study of preventive medicine was laid, February 18, in the exposition grounds in the city of Panama. Dr. Belisario Porras, president of the Republic of Panama, and originator of the Gorgas Memorial Institute idea, was the principal speaker. Dr. Porras contrasted the Panama of his student days with that of today. He said it was the most natural thing in the old days to pass friends in the streets who were hurrying home in the grip of malarial chills, or with some other pernicious fever, but that, thanks to Gorgas, the tropics have been redeemed, and Panama has been made one of the healthiest cities. Drs. Franklin H. Martin, acting president of the institute, and Augusto S. Boyd, responded to Dr. Porras' address. Bronze medals commemorating the event were distributed. Following the ceremonies, a reception was given at the presidential palace. The institute will be governed by a board of directors of which Rear Admiral W. C. Braisted, retired, is president. Dr. Richard P. Strong, director of the Harvard University School of Tropical Medicine, has been chosen scientific director.

## LATIN AMERICA

**Mexican Society Elects Officers.**—The Monterey branch of the Mexican Medical Association has elected officers as follows: president, Dr. José Baragán; secretary, Dr. Jesús Lozano; treasurer, Dr. Cristóbal Guajardo.

**New Medical Practice Act in Colombia.**—A recent law adopted in Colombia restricts the practice of medicine to graduates from Colombian schools or from countries having reciprocity agreements with Colombia, and Colombians graduating from foreign schools. In communities having no regular physician, permission to practice medicine, but not surgery, will be granted any individual with a good reputation who is endorsed by at least twenty-five prominent persons. Foreign physicians will be allowed to practice only after passing a written and practical examination in Spanish before a board, the subjects being prescribed by the Bogotá medical faculty. The fees for foreigners will include all the fees charged students during their entire course, plus 200 pesos.

## FOREIGN

**Royal College of Physicians of London.**—The recently issued list of fellows, members, and licentiates of the college contains the names of 370 fellows, 600 members and 14,448 licentiates.

**New British Medical Journal.**—*Nutrition and Pediatrics* is the title of a new British publication dealing with the diet and disorders of infancy and childhood. The magazine will be issued quarterly.



**Another Centennial.**—The Vienna ophthalmologist, Prof. Karl Stellwag von Carion, known best by his sign in exophthalmic goiter, was born early in 1823. His "Manual of Ophthalmology," 1862, has been translated into several languages.

**Afghanistan Invites German Physicians.**—The *Münchener medizinische Wochenschrift* states that the government of Afghanistan is offering inducements for German physicians to settle in Afghanistan. Ten are wanted at once in the army, hospital and contract practice or private practice. The Leipzig League is in charge of the matter.

**Artificial Limbs for Ex-Service Men in Roumania.**—The minister of war of Roumania and the board of public hygiene have issued a proclamation to the war cripples of Roumania irrespective of nationality stating that those possessing worn-out or useless artificial limbs should appear at the nearest military hospital, where measurements will be taken and suitable limbs supplied. Free railway transport and free board in hospital will be provided where necessary.

**Foreign Congresses.**—The sixth annual meeting of the Australasian Association for the Advancement of Science was held at the Victoria University College, Wellington, New Zealand, January 9-10.—The annual congress of the Royal Institute of Public Health will be held in Scarborough, England, May 16-21, under the presidency of Lord Riddell.—The next annual congress of the Ophthalmological Society of the United Kingdom will be held in London, April 26-28, under the presidency of Dr. A. Maitland Ramsay.

**Rockefeller Foundation Aids German Scientific Research.**—The *Klinische Wochenschrift* states that Dr. H. Poll is the secretary of the committee in charge of the \$50,000 which the Rockefeller Foundation has agreed to give annually for a number of years to aid scientific research. The money is to be used to provide means for scientific research which otherwise could not be carried out. The members of the committee are Professors Matthes, von Frey, Versé and Willstädter, and a representative of the Rockefeller Foundation.

**Expeditionary Research Association.**—At a meeting, January 3, in London, held under the presidency of Sir Kenneth D. MacKenzie, it was decided to form a scientific expeditionary research association for the purpose of facilitating and promoting scientific research by means of expeditions to all parts of the world. There will be an advisory council composed of members of the councils of all the scientific bodies interested in or affiliated with the association. It was announced that a research expedition to the South Pacific Ocean would be organized in the summer, covering a period of about ten months, at a cost of approximately £45,000 (\$203,000).

**Medical News from China.**—A special commissioner, sent by the League of Nations, will go to the Far East to make an investigation of infectious and contagious diseases. Dr. Wu Lien-teh has been selected by the ministry of the interior of China to accompany the commissioner.—During the recent hostilities in China, the hospitals were handicapped by lack of roentgen-ray equipment. The Peking Union Medical College and the Shantung Christian University School of Medicine, Tsinanfu, sent operating and roentgen-ray units to aid local hospitals. General Wu, in gratitude, purchased a complete roentgen-ray outfit and presented it to the Mission Hospital at Paotingfu, and General Feng followed this example at K'aifengfu.—The Chinese churches recently organized a public movement to abolish licensed prostitution.

**Venereal Disease in New Zealand.**—The report of the committee of the New Zealand Board of Health, appointed to investigate venereal diseases in the dominion, has recently been issued. The most important finding was the very general ignorance among the public on the subject of venereal disease. It was estimated that one person in every 428 of the population of the dominion is being treated by registered medical practitioners for venereal diseases, or its after-effects. Dr. J. F. S. Hay, inspector general of the mental hospitals of New Zealand computes the number of persons now in the country who have or have had syphilis to be 33,000, or one in every thirty-eight of the population. Among the recommendations proposed were (1) that persons intending to marry should make an affidavit as to their freedom from communicable disease; (2) that a provision of the Queensland Act be adopted making venereal disease a ground for annulling a marriage contract, and (3) that a law be passed, compelling persons suffering from venereal disease to take treatment or be segregated.

**International Health Course.**—The Health Organization of the League of Nations, with the assistance of the Rockefeller

Foundation, has commenced the practice of interchange of public health personnel (THE JOURNAL, February 17, p. 488). The first interchange of public health personnel was held in Belgium. Plans for the second interchange, which is to be held in England, were outlined in the *Lancet*, February 10. At the request of the ministry of health, arrangements are being made by the Society of Medical Officers of Health, which has appointed a special committee for this purpose. The party will consist of twenty-five persons, drawn from fourteen countries: Austria, Belgium, Czechoslovakia, Denmark, Finland, France, Hungary, Italy, Norway, Poland, Roumania, Russia, Serbia and Sweden. The officers will make their headquarters at the offices of the society, 1 Upper Montague Street, London. The first week will be spent in London. At the end of the week, the party will divide into groups of four or five persons, for study of health administration. The areas chosen, with the officers responsible for conducting the course follow: Birmingham and Warwickshire, Prof. John Robertson; Bradford and York, Dr. J. J. Buchan; Glasgow and Lanarkshire, Dr. A. K. Chalmers; Liverpool and Lancashire, Prof. E. W. Hope; Manchester and Cheshire, Dr. Veitch Clark, and Newcastle and Durham County, Prof. Harold Kerr. The groups will remain in the areas to which they are assigned till March 28. They will reassemble in London, April 3, and, until April 6, will study port sanitary administration. April 11, the international representatives, with five British medical officers, will depart for Austria, where a similar course will follow before the officers return to their respective countries.

**Personal.**—Mr. N. Gist Gee, for twenty years professor of biology at Soochow University, China, has been appointed adviser on premedical education to the China Medical Board of the Rockefeller Foundation of New York. He will make a study of the teaching of chemistry, physics and biology at colleges in China.—The *Medizinische Klinik* states that Professor Meyerhof, the physiologist of Kiel has been invited by the secretary of the Rockefeller Foundation to deliver a series of lectures at New York, Boston and Baltimore, and has accepted. He spoke in Cambridge last year on his research on cell respiration and muscular energetics.—The friends of Prof. M. Letulle of Paris, one of the editors of the *Presse médicale*, are collecting a fund to present him with an engraved plate on the occasion of his promotion in the Légion d'honneur. Each person subscribing at least 60 francs will be presented with a replica of the plate. M. P. Masson, 120 boulevard Saint-Germain, Paris, is the treasurer of the fund. The list of Letulle's works on internal medicine is a long one.—Prof. J. Hirschberg delivered an address recently, at a special meeting of the Berlin Medical Society, on "The Greek Canon of Ophthalmology." It demonstrated anew his wonderful familiarity with the classics and with this oldest work on ophthalmology, and its influence on Arabic literature and on the centuries that followed. Hirschberg is now 79.—The seventy-fifth birthday of Prof. James Israel of Berlin was celebrated by his friends recently with considerable ceremony. The congratulations of the German Surgical Society were presented by Bier; of the Berlin Surgical Society, by Körte; of the Berlin Medical Society, by Kraus; of the German Urologic Society and the Berlin Urologic Society, by Posner, and von Lichtenberg presented Israel with a special number of the *Zeitschrift für chirurgische Urologie*, published in his honor.—The *Klinische Wochenschrift* states that the former surgeon-general of the Russian guards, Dr. von Untersberger, aged 75, is living retired at Dorpat, having lost everything by the revolution. He was awarded a gold medal at the Tuberculosis Congress at Washington.

#### Deaths in Other Countries

Dr. Alfred E. Harris, for nineteen years medical officer of health for Islington, London.—Dr. Alfredo Ferrán Funallega of Ponce, Porto Rico.—Dr. Muñoz Urra of Talavera, known for his research on the histology of the eye.—Mme. Francq-Celse, who practiced at Boulogne-sur-Mer.—Dr. Antonio Molina de St. Remy, an otolaryngologist, who settled in Porto Rico in 1898, but lately moved to Santo Domingo.

#### CORRECTION

**Dr. Scott Did Not Resign from Veterans' Bureau.**—In THE JOURNAL, February 24, under Government Services, it was stated that Dr. T. Hugh Scott, formerly executive officer of the U. S. Veterans' Bureau, had resigned. This was incorrect. Dr. Scott has not resigned, but was recently transferred to the U. S. Veterans' Bureau Hospital at Muskogee, Okla., as officer in charge.



## Government Services

### Colonel Forbes in Message on Veterans' Bureau

On his retirement as director of the U. S. Veterans' Bureau, Col. C. R. Forbes declared that the greatest need of the bureau was the establishment of a board of consultants consisting of four or five specialists to be paid not less than \$20,000 a year to care for the 25,851 hospital patients under treatment in government institutions. Colonel Forbes recommended that this board of consultants consist of one neuropsychiatric, one tuberculosis, one general medical and surgical, one eye, ear, nose and throat, and one orthopedic expert. An educational director was also suggested to supplement these members of the proposed board. Physicians considered by Colonel Forbes of the type necessary to serve the Veterans' Bureau and help solve the difficult problems were: neuropsychiatric: Dr. W. F. Lorenz of the Wisconsin Psychiatric Institute; Dr. D. W. Salmon, formerly director of the National Society of Mental Hygiene; Dr. W. A. White, head of St. Elizabeth's Hospital; tuberculosis: Dr. E. R. Baldwin, president of the Trudeau Sanatorium of New York; Dr. S. M. Rinehart of the Veterans' Bureau; Dr. Frank Billings of Chicago; general medical and surgical: Dr. Charles Mayo of Rochester, Minn.; Admiral E. R. Stitt, Surgeon-General of the Navy; Dr. L. B. Rogers, assistant director of the Veterans' Bureau, in charge of the medical division.

Colonel Forbes asserted that mental cases were increasing among disabled soldiers, the figure at present standing at 9,243. The bureau is caring for 10,915 tuberculosis patients and 5,693 general medical patients, according to the latest figures.

### Commanders of Navy Hospitals Change

Several changes have been made in the command of U. S. Navy hospitals. Capt. N. J. Blackwood has been transferred from the command of the hospital at Boston to New York; Capt. James F. Leys, from the command of the hospital at Newport to Boston, and Capt. H. T. Lowndes from the command of the hospital at New York to the hospital at Washington, D. C.

### Senate Committee to Investigate Veterans' Bureau

The Senate passed the Reed resolution authorizing a committee of three senators "to investigate leases and contracts executed by the U. S. Veterans' Bureau or the Treasury Department for vocational schools and hospitals, and for the purchase, rentals and sales of real estate and supplies used directly or indirectly for the benefit of the veterans of the World War." The preamble of the resolution states that it is claimed that an unnecessarily large proportion of the appropriations made by Congress for the relief of veterans is being improperly consumed in overhead expense and duplication of duties, and in the employment of an unnecessarily large number of agents, physicians, instructors and other persons. The investigating committee will consist of Senators D. A. Reed (Pa.), chairman, D. I. Walsh (Mass.), and T. L. Oddie (Nev.). Senator Reed informed the President that the committee would organize at once. A statement was issued by the new director of the Veterans' Bureau, Brig.-Gen. Frank T. Hines, as follows: "The books and records of the U. S. Veterans' Bureau in Washington and in the field will be made available for Senator Reed's committee at all times. Full cooperation in every way will be given, and it is to be hoped that the inquiry will be beneficial not only to the veterans, but also to the bureau itself."

### International Cooperation on Health Matters

Assistant Surg.-Gen. J. D. Long has been detailed, on request of the state department, to accompany the delegates to the fifth International Conference of American States, to be held at Santiago, Chile, March 25, 1923. Dr. Long, in addition to his duties in charge of the division of foreign quarantine of the public health service, is assistant to the director of the international sanitary bureau of the Pan-American Union. After the completion of the International

Conference of American States at Santiago, it is expected that Dr. Long will visit various countries of South America to establish cordial relations with the health authorities of the countries visited. There are many international sanitary problems constantly present in the countries of South America due to such diseases as plague, smallpox, yellow fever and leprosy, and control of these diseases may best be had through the international cooperation and mutual understanding that will follow such visits. Assistant Surgeon-General Long has been selected for this detail because of his experience in the Philippine Islands and the Orient for ten years, during which time he was director of health and chief quarantine officer of the Philippine Islands.

### Vacancies in Navy Medical Corps

Arrangements are being made to fill the thirty-three vacancies in the Medical Corps of the Navy. The examinations will be conducted by subsidiary boards at the naval station nearest the candidate's home, and the papers given a final mark by the central board of the department at Washington.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Feb. 10, 1923.

### Victor Horsley Memorial Lecture

In 1920, a committee was formed to commemorate Sir Victor Horsley's services to science. It may be remembered that he died while on service with the army in Mesopotamia, in 1916. Subscriptions amounting to \$5,000 were received from all over the world. The committee, over which Sir Charles Ballance presides, and of which Sir Frederick Mott is treasurer, resolved that the money should be invested in the name of a board of trustees, who should triennially appoint some one to deliver a lecture in London under the title of the Victor Horsley Memorial Lecture. No limitation is placed as to the country or profession from which the lecturer shall be appointed, or as to the subject of the lecture. Sir Edward Sharpey Schafer, professor of physiology in the University of Edinburgh, has accepted the invitation of the trustees to deliver the first lecture, which will probably be given in the autumn.

### Zinc Poisoning

An outbreak of zinc poisoning is rare. One occurring recently among the inmates of an institution near London makes evident the danger that may arise from the use of galvanized iron vessels in cooking. About 400 persons were served at tea with hot stewed apples. Within a few minutes, more than half of them complained of dizziness, nausea or sickness, and tightness in the throat. There were also some cases of diarrhea. The medical officer at once administered a bismuth and chalk mixture, and within a short time most of the sufferers recovered. Only ten were seriously ill, and all were sufficiently well next day to carry on their ordinary work. The apples had been freshly gathered, and stewed in large galvanized iron "slops," which were placed in iron steamers. The slops were used because on a previous occasion the apples had turned black when placed directly in the steamer. Analysis of some of the apples showed that they contained 7 grains of zinc, in the form of zinc oxide, in a pound. This is equivalent to 20 grains of hydrated zinc sulphate to a pound. The dose given in the British pharmacopeia is from 1 to 3 grains (0.065 to 0.195 gm.), and the emetic dose, from 10 to 30 grains (0.65 to 1.95 gm.). Each person who ate the stew may be assumed to have taken about 20 grains (1.3 gm.) of the sulphate. Its presence in the apples can be explained by the solvent action of vegetable



acids on zinc. Hence, galvanized iron vessels are not sold for cooking; and in private houses never appear to be used for this purpose. But managers of public institutions seem to require instruction as to the risk.

#### Vital Statistics of 1921

The report of the registrar general for 1921, for England and Wales, which has just been published, shows that the standardized death rate was 11.5 per thousand, the lowest recorded. In all age groups up to 65, the rates are lower than ever before. The figures show the progressive saving of life in this country:

Decade	Death Rate
1841-1850.....	22.4 per thousand
1871-1880.....	21.4 per thousand
1901-1910.....	15.4 per thousand

Thus, the present death rate is only just over half that of the period 1841-1850. This table gives the principal causes of death:

#### DEATHS IN 1921

Cause	Number	Per Cent. of Total in Round Figures
Total .....	458,629	..
Heart disease.....	53,710	12
Cancer .....	46,022	10
Tuberculosis .....	42,678	9
Pneumonia .....	34,708	8
Bronchitis .....	33,684	7
Influenza .....	8,995	..

The smallness of the influenza figure compared with previous years is noteworthy:

#### INFLUENZA DEATHS

Year	Number
1918.....	112,329
1919.....	44,801
1920.....	10,665
1921.....	8,995

In 1921, the tuberculosis, bronchitis, and pneumonia rates were also exceptionally low. On the other hand, the cancer rate showed a slight increase, and was higher than in any year since 1918. Infant mortality was 83 per thousand births, a rate second only to that of 1920. When this rate is compared with that of 153, in decade 1841-1850, the great improvement is evident.

#### A New Element Isolated in London

A new element, called hafnium, has been isolated in London by Dr. Alexander Scott. He showed specimens of the oxid, a cinnamon colored powder, at a meeting of the Chemical Society. A short time ago, two young chemists, Coster and Hevesy, working in the laboratory of Professor Bohr at Copenhagen, announced that, by roentgen-ray spectroscopy, they had found an unknown element occupying position 72 in the table of the elements, as arranged by Moseley. French chemists had already assigned this number to a supposed rare earth element, which they called celtium; but the Danish chemists presented reasons for doubting their results. The element to which they gave the name of hafnium they believed to be a metal in the group of titanium and zirconium. They inferred its presence to 1 per cent. in a Norwegian zirconium mineral, but had not isolated it.

In 1913, Dr. Scott received for analysis from New Zealand samples of black sand, from which he extracted a cream colored sand containing 75 per cent. magnetic oxid of iron and 25 per cent. titanium oxid. In further tests on the titanium oxid, he always found small quantities of a highly

refractory residue. He continued to collect these, labeling them "new oxid," but until a few weeks ago, he could not pursue his investigations. Knowing from the similarity of the compounds it made with potassium and fluorin to those of titanium and zirconium that it was a likely candidate for position 72 in the atomic table of the elements, he began to work as soon as he heard of the Danish discovery. He found the atomic weight to be approximately 180 and the chemical characters to be those which roentgen-ray spectroscopy would assign to hafnium. The black sand deposit of New Zealand is said to be more than 7 miles long and of unknown depth, so that if hafnium has a commercial value it can be turned out in bulk. From its analogies to zirconium and titanium, it may be of value in making incandescent mantles. Dr. Scott is a director of scientific research at the British Museum, and is well known for his investigations on the chemical deterioration of museum objects and the methods of restoring them. He is constantly consulted as to the preservation of the relics from the tomb of Tutankhamen. His discovery is the most striking chemical event in this country since Ramsay's isolation of helium.

#### Crippled Children of London

A careful survey made of London's crippled children has been embodied in a report by Mr. Elmslie, orthopedic surgeon to St. Bartholomew's Hospital, to Dr. Hamer, health officer for London. Acute poliomyelitis has now become the most important cause of crippling, tuberculosis having fallen to the second place.

#### CAUSES OF CRIPPLING

Infantile paralysis .....	961
Tuberculous disease .....	732
Congenital deformities .....	180
Other deformities .....	421
	2,294

Infantile paralysis is mainly a disease of the first two years of life, as the analysis of 559 cases shows:

#### INFANT MORTALITY

Age at onset.....	1	2	3	4	5	6	7	7-10
Number of cases...	211	168	87	50	26	3	7	7

Mr. Elmslie finds that the treatment of acute poliomyelitis in London is very unsatisfactory and that a new method is called for. He emphasizes the importance of early diagnosis and treatment. His criticisms of existing methods are severe in contrast to the favorable opinion expressed as to the treatment of tuberculosis. Tuberculosis as a cause of crippling occurs later in life than poliomyelitis:

#### TUBERCULOSIS

Age at onset.....	1	2	3	4	5	6	7	7-10
Number of cases...	31	73	100	68	88	48	42	55

The report does not treat of the causes of these diseases, which are regarded as a problem of preventive medicine.

#### Campaign Against Venereal Diseases

The seventh annual report of the National Council for Combating Venereal Diseases, which has just been published, brings the story of this movement up to June, 1922. One of the great difficulties in the control of venereal diseases is to secure continuous treatment. The figures of attendance at clinics are: 1918, 46,000; 1919, 82,000; 1920, 85,000; 1921, 67,000. These figures have been interpreted as showing that at first the clinics were new and less numerous, and that at



last a definite drop took place in the incidence of the diseases. But many patients did not continue under treatment until cured. It has been estimated that 60,000 patients disappeared in the years 1919-1920 from the records of the clinics before they ceased to be a danger to others as well as to themselves. An obvious remedy would be compulsory treatment, and arguments for it, drawn from countries in which it has been tried, are given in the report. But compulsion is repugnant to the ideas of liberty that prevail in this country. Still there is hope that some limited form, for those who discontinue treatment, may be introduced by the ministry of health.

#### Centenary of Pasteur in London

In celebration of the centenary of the birth of Pasteur, a lecture was given in the rooms of the Royal Society, under the auspices of the Alliance française, by Dr. Pasteur Vallery-Radot, a grandson of Pasteur and a distinguished pathologist and physician of the Paris hospitals. Sir Charles Sherrington, president of the Royal Society, who was in the chair, said that Pasteur was not only a great Frenchman and a great man of science, but also a great benefactor to the human race and to animal kind, both intellectually and practically. The lecturer has under preparation the complete annotated works of his illustrious grandfather. In his address, Dr. Pasteur Vallery-Radot said that nothing could be dearer to Pasteur than the knowledge that England, the land of Jenner and Lister, and the home of some of his greatest friends and warmest partisans, was paying homage to his memory. At the age of 25, Pasteur was already a great scientist. His study of crystals led him to discoveries in fermentation and the question of spontaneous generation. Pasteur was insistent on results, and by showing the various industries the benefit of his studies, gave practical help in the production of wine, beer, milk, vinegar and bread. His well known discoveries of the causes of infectious diseases followed. His work, by its logical linking and its incalculable consequences, was one of the most wonderful products of man's genius; he had an extraordinary imagination, but he tempered it by the most strict experimentation. His ideal was to see humanity led to peace by the aid of science.

#### Australian Institute of Tropical Medicine

The Australian Institute of Tropical Medicine was opened at Townsville in 1913, in the part of the great continent that lies within the tropics. Although Australia is relatively free from tropical disease, it was felt that, when the north became more populated, malaria, yellow fever, amebiasis and other exotic diseases were likely to be imported, as the trade routes bring it into contact with countries in which these diseases are rife. The importance of training Australian physicians in tropical medicine was therefore realized. The project of making the institute a postgraduate school for tropical hygiene failed, as few graduates availed themselves of the facilities offered. But the other function of the institute—to conduct research into the tropical diseases—remained. Dr. Anton Breinl, a pathologist well known for his work on tropical diseases in England, was appointed the first director, with three assistants. Some excellent work was done by them. The "White Australia policy," which is as important in Australian politics as the Monroe doctrine is in America, raised the question, Can the white man and woman live and maintain health in tropical Australia? Dr. Breinl and his collaborators made some valuable researches whose results answered this question affirmatively. Dr. Breinl resigned in 1921, and the institute became dormant. But with the creation of the commonwealth department of health, the institute was reconstructed. Its activities include the establishment of laboratories to render assistance to physicians in bacteriologic, protozoological and biologic work, and the

organization of a service to deal with tropical diseases in Australia and her dependencies. Work on hookworm disease has been done with the assistance of the Rockefeller Foundation. The whole of Australia and her dependencies have been surveyed, and the distribution of hookworm disease has been determined. It is proposed to establish permanent measures of control and thus to eradicate the disease. By arrangement with the Rockefeller Foundation, a section of the work will be carried out with the collaboration of the Australian Institute of Tropical Medicine. Also, an inquiry into the incidence of malaria and filariasis has been begun. The staff is being reappointed, and Dr. R. W. Clíento, a recent graduate of Adelaide University, has been appointed director. He has been sent on a tour to Java, Ceylon, India, Italy, England, the United States and the Panama zone to study the methods of control of tropical diseases. Arrangements have been made with the Universities of Melbourne and Sidney for the instruction in tropical medicine required for a diploma.

#### PARIS

(From Our Regular Correspondent)

Feb. 9, 1923.

#### Measles as Modified by Preventive Injections of Convalescents' Serum

The method of prophylaxis of measles by the injection of the serum of convalescents from this disease, which has been recommended, since 1916, by C. Nicolle and E. Conseil, and which has been widely experimented with in America and in Germany, has been the subject of a series of studies in France (P. L. Marie, Nobécourt and Paraf, Cheinisse). However, at a recent meeting of the Société médicale des hôpitaux de Paris, Drs. R. Debré and Ravina held up against the method the transitory character of the immunity it confers. By a previous injection of convalescents' serum, they have proposed to secure an attenuated type of measles in children who become exposed rather than to suppress the disease entirely. To accomplish such a result, a preventive injection at the end of the period of incubation, between the seventh and the tenth day, should be given the patient. Under these conditions, a very peculiar type of measles is observed. The incubation period is sometimes prolonged and the period of invasion is practically suppressed; in some cases it expresses itself by a slight rise of temperature, without any catarrhal symptoms; Koplik's spots have not been observed. In such cases, the eruption is sometimes discrete, sometimes more or less confluent, but not associated with catarrhal manifestations. The fever is mild or very light; the general condition remains entirely satisfactory throughout the course of the disease, which is very short. There are no complications. There is no tuberculin anergy. The serum of patients convalescent from this modified type of measles possesses the same preventive properties as the serum of those convalescent from ordinary measles. From these facts it would seem that children treated by this method have acquired, in a simple manner and without danger, a satisfactory immunity to measles.

#### Intoxications Resulting from the Manufacture of Artificial Pearls

Dr. André Léri reports observing in two women, engaged in the manufacture of artificial pearls, a peculiar form of polyneuritis, characterized by a paralysis affecting chiefly the interosseal muscles of the feet and hands, and, to a lesser degree, the extensor muscles of the feet and the flexor muscles of the hands; an anesthesia in the region of the interosseal branches of the extremities; abolition of all the tendon reflexes; paralysis of the soft palate, associated with suppression of the pharyngeal reflex, and paralysis of the orbicularis oculi and the orbicularis oris. These two women filtered the



nacreous varnish by hand, and also dipped the "pearls" in this varnish, which contained a high percentage of tetrachlorethane, a very volatile and toxic chlorine compound of carbon. These findings caused Léri to look into the matter more carefully; he found that all the women engaged in the dipping or the mounting process presented quite serious manifestations affecting the peripheral nervous system: dilatation of the pupils or unequal size of the pupils with a weakened light reflex, paralysis of the extensors of the fingers, paralysis of the soft palate, with diminution or disappearance of the pharyngeal reflex, and frequently abolition of the tendon reflexes. Some of these women (those engaged in the mounting process, for example) merely breathed an atmosphere charged with the vapors of tetrachlorethane, without coming in direct contact with this substance. It was very evident, therefore, that intoxication occurred by way of the respiratory passages.

His attention having been once directed to the subject, Léri did not take long to become convinced of the great frequency, hitherto unsuspected, of intoxications through the industrial use of tetrachlorethane, which is used, not only in the manufacture of artificial pearls, but also as a solvent in a number of industries. Strict hygienic measures should therefore be employed in factories in which tetrachlorethane is used, and particularly in the artificial pearl industry. Braying of the nacreous varnish should not be done by hand, but a mechanical process should be substituted. The dipping vats containing the nacreous varnish should be kept closed as much as possible, and the toxic vapors as they rise should be sucked away from below. Only the employees absolutely needed should be allowed to remain, for any length of time, in the contaminated atmosphere. The employees should receive a medical examination, from time to time, and those showing the first signs of intoxication should be eliminated without delay; the abolition of reflexes may be regarded as an alarm signal. In this manner, grave intoxications; for instance, certain types of commonly fatal icterus such as have been observed, can doubtless be prevented.

#### Seventy-Fifth Anniversary of Society of Biology

May 26, 1923, the Société de biologie of Paris will celebrate the seventy-fifth anniversary of its foundation. The affiliated societies will also take part in the ceremonies. These are located at Bordeaux, Marseilles, Nancy, Petrograd, Lille, Barcelona, Strasbourg, Lyons, Buenos Aires, Lisbon, Athens, Bukarest, Cluj and Jassy, including the societies of Denmark, Sweden, Lithuania and Belgium. The Société de biologie and its affiliated societies will meet in plenary assembly, on which occasion three questions will be discussed: Generation and Fecundation, Dr. A. Brachet; Physiologic Action of Potassium and Calcium, Dr. H. Zwaardemaker, and the Problem of Immunity in Invertebrates, Dr. J. Cantacuzène.

#### Death of Dr. G. Bardet

Dr. G. Bardet, secretary of the Institute of Hydrology in Paris and formerly president of the Société de thérapeutique, has died at the age of 71. He was for many years chief editor of the *Bulletin général de thérapeutique*.

#### Medical Expeditions

Those who took part in the fifteenth and sixteenth medical expeditions were invited recently to a reunion held in the Laboratoire de thérapeutique of the Faculté de médecine. Each guest was presented with a beautiful plaquette in memory of the occasion. Many lantern slides of climatic stations and mineral springs visited on these two expeditions were shown at the meeting.

Since the war, these expeditions, which were formerly directed by the late Dean Landouzy, have been under the scientific direction of Prof. P. Carnot, who succeeded Lan-

douzy to the chair of therapeutics, and of Assistant Prof. F. Rathery. Dr. Gerst has charge of the material equipment for the expeditions. The next expedition will include the climatic stations and the mineral spring resorts of the Jura, Savoy and Dauphiné. Confrères from other countries, who may wish to join the expedition, will be heartily welcome.

#### VIENNA

(From Our Regular Correspondent)

Jan. 26, 1923.

#### Cocainism in Vienna

The number of victims of the cocaine habit in this city has suddenly increased. The police are attempting to stop the illicit trade in this drug, which is new in our country, having been introduced by visitors. Our laws prohibit the dispensing of cocaine by any chemist or apothecary unless on a regular prescription from a duly qualified and registered medical practitioner, and then only in solution, except when sold to hospitals or medical men. Thus it is clear that the quantities required for addicts can be obtained only by smuggling. Although no great harm has yet been done, the public is aroused to the possible danger.

#### Honorary Titles Relinquished

All medical members of the University of Vienna have given up the honorary titles conferred on them by the former or the present governments, such as councilor of the court and councilor of the emperor, retaining only those titles that have been obtained from the university by scientific work and teaching, such as professor or privat-doцент (or lecturer). These honorary titles were misleading, as they were looked on as evidence of special knowledge, while in fact they were only "ornaments" conferred for prolonged public service, or as a substitute for higher salaries. There was for many years a craze among German-speaking people for titles. The general medical practitioners had often demanded that physicians forego such titles, but the mentality of middle Europe was not yet ready for such a change in public life.

#### Congress on "Logopedy" Proposed

The Vienna phonetic society, which has done a great deal to promote the study of the physiology and pathology of the human voice, is endeavoring to arrange a "logopedic" convention in this city. Invitations to meet this summer have been sent to the leading men in Europe engaged in this kind of research, and if the acceptances are numerous enough, the convention will take place. It is intended to hold a symposium on aphasia, phonetic problems in adolescents and peripheral disturbances of the speech. Otolaryngologists and rhinologists will also be invited.

#### Charts on Mortality and Births in Vienna

In a paper on vital statistics, which Dr. Hecke of the Board of Public Health presented before the Sociologic Society of this city, charts were exhibited which show that since 1919 a small but significant increase of births has taken place. This, however, cannot yet compensate for the increased loss of life and the decrease in births during the war years. About the same ratio between births and deaths existed in 1921 as in 1915; the exact figures for 1922 are not yet available, but the very low figures of 1918 are already greatly exceeded. While in 1911 the total mortality amounted to 33,664, the birth rate stood at 41,030. In the next year, both figures dropped in nearly parallel lines, the deaths numbering 32,161, the births 39,801. In 1913, the deaths increased a little, numbering 32,319, and the births diminished to 37,367. Similar conditions prevailed in 1914, when the deaths rose to 33,268, and the births dropped to 36,378. The mortality figures went up by leaps and bounds in 1918 and 1919, so that the curve



on the chart resembles a human arm outstretched in despair, while the birth curve falls in a steep decline.

In 1917, only 20,688 children were born, while 46,131 persons died from influenza and other diseases. The climax was reached in 1918, when there were 19,257 births and 57,497 deaths. In 1919, the number of births rose to 29,218; the deaths dropped to 40,922. This satisfactory trend continued in the next year with 27,821 births and 34,197 deaths; in 1921, there was a slight excess of births over deaths: 28,798 against 28,297, respectively.

#### Scientific Research in Austria in 1922

In a short report to the government, which demonstrated the meagerness of the regular appropriations to the scientific research institutes, Professors Becke and Rademacher asked for larger appropriations, and enumerated the most important investigations conducted last year in this country. Apart from the publications dealing with the geographic and ethnographic researches in the Balkans in 1915-1918, when our armies occupied these countries, the results of which were made known in 1922, one of the most important papers was that by Dr. Schedler, who made geomagnetic surveys in thirty different places and found marked differences and changes from the values heretofore accepted.

The Vienna Radium Institute, a private concern, has done excellent work in the investigation of radioactive substances. It has been shown that the age of certain mineral deposits can be estimated according to the proportion of transformation or decay of the radioactive substances contained in them. While the uranium-pitchblende of Bohemia is about 200 million years old, in Norway there are minerals at least twice as old, and in Ceylon the layers of thorium have been found to be at least 500 million years old.

A tremendous amount of work is still going on in the biologic institute (Vienna). Here the problems of transplantation have attracted the attention of a number of gifted investigators. The pupils of Przibram study especially the physiology of transplanted eyes, hearts and legs. Koppányi has succeeded in transplanting eyes in rats, and these eyes seem to be functioning. At a recent meeting of the Vienna Ophthalmologic Society, his experiments were vehemently attacked by the oculists, but just as vehemently defended by the physiologists. Dr. Weiss transplanted entire limbs in amphibia, exchanging, for instance, arms and legs, and demonstrated that these transplanted limbs functioned normally after a few days. In a group of these animals, he could even transplant whole hearts into the peritoneal cavity. These transplanted hearts obtained an organic union with the new host, the animal thus having two hearts.

In the chemical laboratories of the university, important researches on the catalytic effects of copper and of the methyl-groups of methylated benzene compounds are in progress. In the physical institute, studies on colors and their differentiation are conducted by Dr. Duschek-Frankfurt. A prehistoric cave, discovered in the Styrian Alps near Mixnitz, gave opportunity for the study of animals and plants of diluvial times, while the results of botanic researches in the Far East and in the African Sudan, begun by Austrians before the war, have been published recently.

All these important contributions to science have been made in spite of an appalling lack of funds, indicating what might be done if the scientific spirit were not subdued.

#### Graduate Work for Vienna Practitioners

The progress of medicine has made it necessary for practitioners to keep in touch with the latest achievements, but it is not an easy matter to attend the so-called postgraduate courses organized by the university. These courses last a

fortnight, are conducted through the day and are not therefore accessible to the average practitioner, who simply cannot spare a fortnight four times a year for this purpose. The Wiener medicinisches doktoren Kollegium (a private medical corporation) has instituted the Seminar Abende (instruction evenings), which are open to all medical men free of charge. Any physician in Vienna may inform the secretary of the kollegium that he desires instruction on a certain point or subject. These notices are collected. Eminent lecturers then take charge of the queries and summarize them under dermatology, pathology, gynecology or other subjects. Every Monday at 6:30 p. m., one or two of the lecturers speak on the subject, and, as far as possible, answer the questions submitted a week before. Meanwhile, the lecturer has time to look up the latest references.

Discussion is, as a rule, encouraged. The new departure has been given a warm reception by the profession, and is considered a great success. Practitioners from Germany, the provinces and foreign countries have asked permission to attend these evenings, so as to be able to introduce new methods in their own cities or countries. The university has approved these "evenings," and one of the largest classrooms has been placed at the disposal of the kollegium for a weekly lecture. Eminent specialists are now eager to enlist as lecturers and referees, and the kollegium has only to select the man best suited for presenting the subject of the evening.

#### The Problem of Alcohol in Teaching

In a paper presented before the Austrian Society for Hygiene, Reichel discussed the difficulties of presenting the alcohol problem in schools: how to impress on adolescents the detrimental effects of alcohol. A large percentage of the population is of the opinion that moderate consumption of alcohol is not detrimental. It is noticeable that total abstainers not infrequently are vegetarians, or faddists of another kind, and thus cannot be regarded as commendable examples. Poets of all nations have always glorified wine as an excellent beverage, and in religious acts of several creeds wine plays an important part. Therefore, youth must be taught that self control is the principal means of insuring a sound mind in a sound body.

The lecturers do not believe it advisable, in the case of young persons, to demonstrate the harmful effects of alcohol by pathologic specimens. It is much more effective to prove to them that drinkers are more subject to disease and illness than abstainers. Statistics of insurance societies; mortality statistics of alcohol-consuming classes (waiters, barmen) and of moderate drinkers, and of drinking races (French, German, Russian) should be shown, to emphasize that the person who uses alcohol is more likely to be sick than persons who do not use it. This method appeals to the instinct of self-preservation.

Especially interest is evoked in the youthful minds by the experiments and observations on sportsmen. Durig has collected statistics of record holders among German athletes. The absolute superiority of total abstainers over even moderate drinkers is a revelation to young men, whose interest in sport is intense even in our countries. It is easy to convince them that mental health is inconsistent with bodily ill health. Reichel thinks that children should be taught to refuse even to taste alcohol. The supposed increase of mental activity under the influence of alcohol can easily be shown to be misleading. The figures on temporary mental derangements, even of lasting mental harm due to alcohol, can be easily traced. The statistics of hospitals for the insane offer excellent proof. It is important that the school physician himself set an example of total abstinence and that school boards appoint only teachers who are abstainers.



## BERLIN

(From Our Regular Correspondent)

Feb. 10, 1923.

## Effect of Economic Conditions on Hospitals

On account of the bad economic conditions, the private hospitals have begun to experience difficulties. In Berlin, at the present time, the cost of maintenance per patient in the public welfare hospitals amounts to more than 3,500 marks a day. The city contributes, however, only 1,980 marks and the health insurance societies only 1,500 marks per patient. Consequently, the total indebtedness of the municipal general hospitals has reached the sum of 4,200,000,000 marks, while the deficits of the forty private hospitals (denominational institutions, homes for the aged, etc.) amount to 100,000,000 marks. The municipal government will therefore be compelled to lend its aid, and it has been proposed that the price of gas be raised 5 per cent. for the benefit of municipal welfare institutions.

## The Prussian Academy of Sciences

At the last two sessions of the Academy of Sciences, Prussia's most distinguished scientific body, Professor Beckmann spoke on the subject of protection to human life through improvement in nutrition. For his proper nourishment, man needs, chiefly, digestible carbohydrates and albuminous substances. The latter he derives mainly through the mediation of domesticated animals. It lies in the interest of man's nutrition, therefore, to provide our domesticated stock with plant foods that are as easily digestible as possible. For example, through maceration of straw by treating it with alkali hydroxid, carbohydrates may be made more digestible, and, by the application of leaching with water, lupine seeds may be detoxicated, so that their albuminous substances may be utilized to advantage for the feeding of stock. An increase in the digestibility of stock foods, or any other improvement in them that can be effected, immediately redounds to the benefit of human nutrition. Any conservation of foodstuffs is also of advantage to human nutrition. There are many experiments in progress in these fields of endeavor.

Professor Correns, the director of the Kaiser Wilhelm Institute for Biologic Research, located in Dahlem, a suburb of Berlin, delivered a lecture on the "Numerical Relationship of the Sexes." Whereas Süssmilch in 1741 referred in one of his works to "God's interposition" in the distribution of the sexes of mankind, modern science is endeavoring to acquire an influence over the determination of sex. Süssmilch sought to explain teleologically the fact that for every 100 girl births there were from 104 to 105 boy births by citing statistics to the effect that boys, during childhood, are subject to a greater mortality. However, the figures vary in different countries and are also subject to secular changes; wars, especially, affect the numerical relationship of the sexes. Internal or external conditions may change the relationship quite markedly; for instance, influences may be brought to bear on the sperm cells. Such influences may affect the numerical relationship in two ways: either one kind of sperm cell may be strengthened or weakened at the expense of the other, or the physiologic conditions under which they exist may be modified by the voluntary act of man. Up to the present time, however, science has not progressed very far in its experimental endeavors looking toward sex determination, so that "God's interposition" still holds, as a matter of fact.

## The Institute for Roentgenologic Research

The Institute for Roentgenologic Research, which, since the death of Geheimrat Grunmach in 1919 has been lying fallow, as it were, is at last to have a new director. The selection of a new director for this neglected post has been delayed, owing to the fact that there has been a difference

of opinion between the government and the university faculty as to the course that the institute should follow. While the government was inclined to put the administration of the institute in the hands of a roentgenologist, the faculty voiced the opinion that a physicist should be put at the head of affairs, on the ground that clinical roentgenology and other phases of radiotherapy were sufficiently well provided for in the various clinics, not only from the diagnostic but also from the therapeutic side. There was a need for the development of roentgen-ray research, and for that reason a physicist would seem to be indicated rather than a medical man. The deliberations on the subject have now been brought to a close, and the institute, which was formerly a laboratory for roentgen-ray examinations, has been changed into an institute for roentgenologic research, and a physicist, Prof. W. Friedrich, head of the Radiologic Institute of the Women's Hospital in Freiburg, has been appointed as director. At the same time, the position has been raised to the rank of a head professorship. Friedrich, working sometimes alone and sometimes in collaboration with Professor Gauss of Freiburg and the late Professor Krönig, has performed meritorious service in the field of roentgenologic research and in its practical application.

## Personal

Prof. Dr. James Israel, Berlin surgeon, celebrated, February 2, in an enviable state of physical and mental health, his seventy-fifth birthday.

Hermann Hartmann, the founder of the Wirtschaftliche Organisation der Aerzte Deutschlands (Leipziger Verband), died at Leipzig, January 20, at the age of 59. Hartmann was a natural-born leader and a strong, self-reliant personality. At a time when physicians were helplessly exposed to the caprice and exploitation of the directors of the health insurance societies, Hartmann saw the value of organizing; thus he became, at the turning-point of the century, the first man in Germany to effect a union of professional men for economic purposes. By persistent, energetic effort he forced the medical profession to recognize the medical organization he had founded, and at last brought it about that this organization gained a powerful influence with the government and in parliament, and came to be regarded as possessing equal rights with the directors of the health insurance societies in matters pertaining to health insurance. He was later chosen as the representative of the medical profession on the Reichswirtschaftsrat (economic council). Establishment of the principle of free choice of physician was the method Hartmann employed to restore the liberties of the physicians in their struggle with the health insurance societies. The Hartmann League, as the economic organization of the medical profession has been called in his honor, has, through his efforts, been placed on such a solid foundation that what he has wrought will persist in spite of the death of the founder.

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Marriages

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PERCY J. CARROLL, major, M. C., U. S. Army, Jefferson Barracks, Mo., to Miss Helen Byrnc of St. Louis, February 3.

JAMES M. MILLER, captain, M. C., U. S. Army, Fort Eustis, Va., to Miss Bessie E. V. Keil of Walhalla, S. C., February 3.

JOHN MAURICE HAYES, Decatur, Ill., to Miss Helen D. Hogan of Assumption, recently.

CARLE E. BENTLEY to Mrs. Katherine Oakman, both of Little Rock, Ark., February 10.

FRANKLIN W. SELLS, Osceola, Iowa, to Miss Clara L. Black of Los Angeles, January 3.

LONNIE WOODFIN GROVE to Miss Dorothy Haverty, both of Atlanta, Ga., January 19.



## Deaths

**Cyrus Lee Stevens** ♂ Athens, Pa.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; consulting surgeon at the Robert Packer Hospital, Sayre, where he died, February 19, aged 71, following a long illness. Dr. Stevens was born at Stevensville, Pa., in 1851. Following his graduation, he visited hospitals in New York, London and Paris and was appointed professor of obstetrics and surgery, Medical Department Central Turkey College, at Aintab, Turkey, where he remained for three years. Returning to the United States in 1884, he was appointed medical superintendent at the New York Post-Graduate School and Hospital. He served as member of the board of trustees, secretary and president of the Medical Society of the State of Pennsylvania; president and secretary of the Bradford County Medical Society; member of the board of health; the borough council, and editor of the *Pennsylvania Medical Journal*. Dr. Stevens was a member of the House of Delegates of the American Medical Association for six years, a member of the reference committee on amendments to the constitution and by-laws for three years, and chairman of the reference committee on credentials for one year. He was a member of the American Association for the Advancement of Science, and in 1907 was made a member of the Pennsylvania House of Representatives.

**Sir Thomas George Roddick**, Montreal, Canada; honorary president of the Medical Council of Canada; died, February 20, of arteriosclerosis, aged 76. Dr. Roddick graduated from McGill University Faculty of Medicine, Montreal, in 1868, and was appointed professor of surgery in 1890; dean of the medical faculty, 1901-1908, governor, 1908, and at the time of his death, emeritus professor of surgery. He had served as consulting surgeon at the Royal Victoria and the Montreal General hospitals, and was a member of the Canadian parliament from 1896 to 1904. Dr. Roddick was appointed first colonial president of the British Medical Association in 1896, and was knighted in 1914.

**John Bernard McGee**, Cleveland; Western Reserve University School of Medicine, 1878; at one time professor of therapeutics and secretary of the faculty, Cleveland College of Physicians and Surgeons, and associate professor of therapeutics at his alma mater; member of the Ohio State Medical Association, the American Association for the Advancement of Science, the American Anthropological Association, the Cleveland Medical Library Association, the Cleveland Clinical Club, and formerly president of the Cleveland Academy of Medicine; on the staff of St. Joseph's Orphan Asylum; aged 69; died, February 10, following a long illness.

**Daniel Hughes Du Pree** ♂ Athens, Ga.; Johns Hopkins University Medical Department, Baltimore, 1907; formerly assistant professor of clinical medicine at the University of Georgia Medical Department, Augusta; member of the American College of Physicians; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 39; died, February 22, of angina pectoris.

**Charles William Franzoni** ♂ Washington, D. C.; Medical Department of Columbian College, 1869; member of the Biological Association of Washington; formerly president of the Medical Society of the District of Columbia and for thirty-five years treasurer of the Washington Medical Society; Civil War veteran; aged 85; died, February 17, of bronchopneumonia.

**Lem Walter Spriggs**, San Francisco; College of Physicians and Surgeons of San Francisco, 1899; Jefferson Medical College of Philadelphia, 1904; formerly dean, and professor of abdominal surgery and gynecology at the College of Physicians and Surgeons of San Francisco; aged 51; died, February 16, of chronic myocarditis and angina pectoris.

**Joseph Weinstein** ♂ New York; University and Bellevue Hospital Medical College, 1899; member of the American Academy of Ophthalmology and Oto-Laryngology, and the Berlin Laryngological Society; on the staffs of the Sydenham, Beth David and Beth Israel hospitals, New York; aged 45; died recently, at Frankfurt, Germany.

**Stephan Alexander Hunter**, Pittsburgh; Jefferson Medical College of Philadelphia, 1878; ordained Presbyterian ministry, 1877; served as a missionary in China, 1879-1891; author of "A Manual of Therapeutics and Pharmacy" and "An Analysis of the Book of Hebrews" (both in Chinese); aged 71; died, February 20, of senility.

**Tunis C. Quick** ♂ Buffalo; Medical Department of Columbian University, Washington, D. C., 1895; member of the Medical Society of Virginia; served in the M. C., U. S. Army, during the World War; surgeon in the U. S. Public Health Service at the time of his death; aged 52; died, February 21, of heart disease.

**Herbert James Hall** ♂ Marblehead, Mass.; Medical School of Harvard University, Boston, 1895; former president of the American Occupational Therapy Association; since 1912 medical director of the Devereux Mansion Sanatorium, where he died, February 19, aged 52, following a long illness.

**Henry Albert Hutcheson** ♂ Oaklandon, Ind.; Medical College of Indiana, Indianapolis, 1903; formerly associate in clinical surgery at Indiana University School of Medicine, Indianapolis; aged 49; died, February 15, at St. Vincent's Hospital, Indianapolis, following an appendectomy.

**William Shannon** ♂ New York; New York University Medical College, 1889; formerly clinical instructor of pediatrics at Cornell University Medical College; on the staffs of Willard Parker, Riverside, and Misericordia hospitals; aged 59; died, February 19, of pneumonia.

**Enos John Hughes**, Chicago; College of Physicians and Surgeons, Keokuk, Iowa, 1876; University of Michigan Medical School, Ann Arbor, 1886; for more than thirty years medical examiner for the Baltimore and Ohio Railroad; aged 65; died, March 2, of heart disease.

**James John Dickinson**, Pittsburgh; Jefferson Medical College of Philadelphia, 1913; member of the Indiana State Medical Association; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 35; died, February 16, of pneumonia.

**Ransom J. Chase**, Springfield, Colo.; Hahnemann Medical College and Hospital of Chicago, 1903; served in the M. C., U. S. Army, during the World War; served with the American Red Cross in Russia for four years; aged 44; died, February 3, of pneumonia.

**Eugene Francis Daum**, Chicago; Northwestern University Medical School, Chicago, 1900; member of the Illinois State Medical Society; served in the M. C., U. S. Army, during the World War; aged 46, died, March 1, of acute endocarditis following influenza.

**George Washington Faller** ♂ Oyster Bay, N. Y.; New York University Medical College, New York, 1878; member of the New York Academy of Medicine; formerly on the staff of the Nassau Hospital, Mineola; aged 68; died, February 19, of heart disease.

**George Woodruff Johnston**, Washington, D. C.; University of Pennsylvania School of Medicine, Philadelphia, 1882; formerly on the staff of the Emergency Hospital; aged 64; died, February 20, of heart disease while delivering an address.

**Paul Tudor Jones**, Columbus, Ga.; University of Virginia Department of Medicine, Charlottesville, 1872; Bellevue Hospital Medical College, New York, 1873; member of the Medical Association of Georgia; aged 71; died, February 9.

**George Harcourt Willis**, Winslow, Ill.; Rush Medical College, Chicago, 1900; served as mayor of Winslow for two terms, and for eleven years as secretary of the board of education; aged 50; died, February 17, of pneumonia.

**Andrew A. McMeans** ♂ Monterey, Mexico; Trinity Medical College, Toronto, Canada, 1889; member of the State Medical Association of Texas; served for several years as American vice consul in Monterey; aged 56; died, February 9.

**Lemuel B. Spung**, New Lexington, Ohio (licensed, Ohio, 1897); member of the Ohio State Medical Association; aged 63; died, February 11, at the Bethesda Hospital, Zanesville, of peritonitis, following an appendectomy.

**Domer Gheen Smith** ♂ Freeport, Ill.; Jefferson Medical College of Philadelphia, 1899; for several years secretary of the Tri-State Medical Society (Illinois, Iowa, Wisconsin); aged 56; died, February 28, of pneumonia.

**Robert Beardsley Goodyear**, North Haven, Conn.; Yale University School of Medicine, 1868; member of the Connecticut State Medical Society; Civil War veteran; aged 87; died, February 21, of senility.

**James Fotheringham Kendrick**, West Burke, Vt.; University of Vermont College of Medicine, Burlington, Vt., 1899; member of the Vermont State Medical Society; aged 52; died, January 15, of paralysis.

**Lester Ours**, Wheeling, W. Va.; Jefferson Medical College of Philadelphia, 1922; aged 25; intern at the Ohio Valley General Hospital, where he died, February 13, of appendicitis.



**William Morrison**, Brooklyn; Long Island College Hospital, 1909; also a clergyman; formerly pastor of the First Baptist Church of Flushing, N. Y.; aged 74; died, February 20, of cerebral hemorrhage.

**Cornelius Abram DeMund**, Ridgewood, N. J.; Cornell University Medical College, New York, 1900; member of the Medical Society of New Jersey; aged 44; died, February 3, of valvular heart disease.

**George Alexander Graham**, Raeford, N. C.; New York University Medical College, New York, 1876; member of the Medical Society of the State of North Carolina; aged 70; died, February 1.

**Altero Lipa B. Weindrug**, New York; University and Bellevue Hospital Medical College, 1900; member of the Medical Society of the State of New York; aged 49; died, February 20, of pneumonia.

**Louis Lawrence Wilencheck**, Fairfield, Idaho; University of Colorado School of Medicine, Denver, 1916; member of the Idaho State Medical Association; aged 31; died, January 27, of influenza.

**Albert Ai Pratt**, Enosburg Falls, Vt.; University of Vermont College of Medicine, Burlington, 1904; member of the Vermont State Medical Society; aged 53; died, January 12, of myocarditis.

**Oscar W. Whitacre**, West Frankfort, Ill.; St. Louis College of Physicians and Surgeons, St. Louis, 1909; member of the Illinois State Medical Society; aged 40; died, February 11, of tuberculosis.

**Charles Marchant Ramsdell**, Cove, Ore.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1877; aged 68; died, February 8, following a long illness.

**Charles Bellamy Young** ♂ Middletown, Conn.; Medical Department of Columbia College, New York, 1894; on the staff of the Middlesex Hospital; aged 54; died, February 1, of diabetes.

**Arthur M. Eastman**, Minneapolis; Hahnemann Medical College of Philadelphia, 1879; president of the Minnesota State Board of Medical Examiners; aged 67; died, February 23.

**William Blaine Judy** ♂ Mount Vernon, N. Y.; Northwestern University Medical School, Chicago, 1919; formerly on the staff of Mount Vernon Hospital; aged 30; died, February 19.

**George Francis Caldicott**, Worcester, Mass.; Tufts College Medical School, Boston, 1921; on the staff of Worcester City Hospital, where he died, February 11, of pneumonia, aged 26.

**Thomas Hartley Hall**, Dublin, Ga.; Pennsylvania Medical College, Philadelphia, 1859; member of the Medical Association of Georgia; aged 85; died, February 12, of senility.

**John Wesley Corman** ♂ North Tonawanda, N. Y.; University of Toronto Faculty of Medicine, Toronto, Canada, 1874; aged 73; died suddenly, February 8, of heart disease.

**Minerva A. Kline**, Chicago; Hahnemann Medical College and Hospital of Chicago, 1892; aged 60; died, March 2, at the Hahnemann Hospital, of myocarditis.

**William P. Burge**, San Francisco; Western Homeopathic College, Cleveland, 1866; aged 89; died, February 1, at the Old People's Home, of arteriosclerosis.

**George Benjamin Phelps**, New York; Medical Department of Columbia College, New York, 1883; aged 68; died suddenly, February 15, of heart disease.

**John Alfred Remington** ♂ Central Falls, R. I.; Bellevue Hospital Medical College, New York, 1891; formerly state senator; aged 55; died, February 13.

**Lyman A. Clark**, Utica, N. Y.; New York Homeopathic Medical College, New York, 1869; aged 77; died, February 7, at the Masonic Home, of senility.

**William H. H. Tate**, Heflin, Va.; Louisville Medical College, Louisville, Ky., 1875; Confederate veteran; aged 81; died, February 2, of senility.

**Joseph B. Morrison**, Maryville, Mo.; Jefferson Medical College of Philadelphia, 1861; Civil War veteran; aged 86; died in February, in New York.

**Stewart Newell Pool** ♂ Pittsburgh; University of Pennsylvania School of Medicine, Philadelphia, 1891; aged 55; died, February 19, of pneumonia.

**Norton Hills Pardon**, Glendale, Calif.; University of Michigan Medical School, Ann Arbor, 1894; aged 54; died, February 9, of heart disease.

**Thomas Leo Callen**, East Newark, N. J.; University of Tennessee College of Medicine, Memphis, 1902; aged 42; died, February 21, of influenza.

**Charles Walter Connell**, Fall River, Mass.; Medical School of Harvard University, Boston, 1887; aged 63; died, February 7, of heart disease.

**J. H. Morrow**, Blue Ridge, Texas; St. Louis College of Physicians and Surgeons, St. Louis, 1890; aged 69; died, January 27, of influenza.

**James Massey Jones**, Interlachen, Fla. (licensed, Florida, 1889); Confederate veteran; also a druggist; aged 79; died, February 12, of senility.

**John Mason Phillips**, Evansville, Miss.; Vanderbilt University Medical Department, Nashville, Tenn., 1882; aged 63; died, February 8.

**Ezra Grumbine**, Lebanon, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1868; aged 77; died, February 16, of senility.

**William E. Wisner**, Columbus, Ind.; Cincinnati College of Medicine and Surgery, Cincinnati, 1870; aged 90; died, February 8, of senility.

**W. H. Emmons**, Phoenix, Ariz.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1874; aged 82; died, January 26, of senility.

**George W. Stevenson**, Phoenix, Ariz.; Curtis Physio-Medical Institute, Marion, Ind., 1894; aged 53; died, January 23, of tuberculosis.

**Robert N. Cartwright**, Fairfield, N. C.; Jefferson Medical College of Philadelphia, 1884; formerly state senator; aged 65; died recently.

**Elijah J. Shelton**, Bloomfield, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1864; aged 91; died, February 18, of senility.

**George W. Helmick**, Columbus, Ohio; Starling Medical College, Columbus, 1877; aged 65; died, February 22, of heart disease.

**A. Neal Wood**, Ashdown, Ark.; University of Arkansas Medical Department, Little Rock, 1890; aged 57; died, December 15.

**John Irvine Hostetter**, Colo, Iowa; Chicago Medical College, Chicago, 1880; aged 67; died, February 16, of cerebral hemorrhage.

**Edwin D. F. Phillips**, Kansas City, Mo.; Kansas City (Mo.) Medical College, 1876; aged 81; died, December 24, of chronic nephritis.

**Samuel E. Nixon**, Burlington, Iowa; Hahnemann Medical College and Hospital of Chicago, 1874; aged 73; died, February 10.

**Samuel William Allen** ♂ Chicago; University of Arkansas Medical Department, Little Rock, 1882; aged 61; died, February 10.

**Milton C. McBride**, Dallas, Texas; Memphis Hospital Medical College, Memphis, Tenn., 1883; aged 64; died, February 7.

**William O. St. Sure**, Sheboygan, Wis.; Rush Medical College, Chicago, 1893; also a druggist; aged 74; died, February 6.

**Callie A. Rennoe**, South Bend, Ind.; Rush Medical College, Chicago, 1892; aged 54; died, February 11, of heart disease.

**Theodora Tiffie Purkitt** ♂ Willows, Calif.; Cooper Medical College, San Francisco, 1894; aged 66; died, February 8.

**Henry L. Mann**, Kansas City, Mo.; Starling Medical College, Columbus, Ohio, 1875; aged 75; died, February 13.

**Oliver H. Fisher**, Reading, Pa.; University of Pennsylvania School of Medicine, 1872; aged 76; died, February 4.

**Leroy Gullick**, Denver; Baltimore Medical College, Baltimore, 1906; aged 40; died, February 4, of pneumonia.

**Hamlin Joseph Walters**, Lincoln, Neb.; Miami Medical College, Cincinnati, 1875; aged 72; died, February 4.

**Calvin K. Jayne**, Madison, Wis.; Jefferson Medical College of Philadelphia, 1879; aged 66; died, February 4.

**John O. Moxley**, Lewiston, Idaho (licensed, Idaho, 1899); also a druggist; aged 77; died, February 8.

**Edward J. Thayer**, New York; Rush Medical College, Chicago, 1893; aged 57; died, February 15.

**Levi D. Allen**, Amsterdam, Ohio (licensed, Ohio, 1896); aged 79; died, January 18, of senility.

**L. W. Early**, Phoenix, Ariz. (licensed, years of practice); aged 68; died, January 31.







otherwise are reproducing it *verbatim et literatim*. We also give a photographic reproduction of part of the letter in order more clearly to show its obviously illiterate character. Here is the letter:

"Sirs, Mister Kirpatic School. I want to rite letter an see if i can be kirpatic dr. if you can make a kirpatic dr. for how much money i got about 2 thousand dolers that my husband got wen he died from the insurance company that paid 3 thousand dolers but I had ode lots of money and funerl an everything cost more 1 thousand dolers. Could i be kirpatic dr. for this much money about 2 thousand dolers in bank. i been nurse some and help drs. and kirpatic dr say i am strong and pretty an i make a good kirpatic dr. since my husband die I can live with my ant here in \_\_\_\_\_ but it is my money in bank. My ant say i have not been in school enuff but my father live on ranch an work wen I was girl and I go to school 3 years. My husband die with apensitis in his side an drs. say it to late after they operate an lots of pus an kirpatic dr. say he could cure him if i had called him but i did not no it that is why i did not send for him an i want to be kirpatic dr so i can cure apensitis sometime. I been ritin some other kirpatic schools and kirpatic colleges but they send me books and dont anser my letters so i can no. if you will anser my letter an tell me if you can make me a kirpatic dr. on how much money i got an how long it will be if i am a widow 24 years old and i will come right away.

Mrs. \_\_\_\_\_, Texas."

In due time the writer of the letter received an answer (which we reproduce in miniature) from the Carver Chiropractic College. The letter ran:

"Dear Madam: Your most interesting letter stating that you were very much interested in the study of the subject of Chiropractic and reciting the incidence [*Sic!*] leading to the death of your husband and the information that you had received from some of your Chiropractic Doctor friends that his death was all unnecessary, had a Chiropractic Doctor waited on him instead of an M. D. I think you are entirely correct, however, that is an incidence. [*Sic!*] That is a condition we must all meet. While it grieves us to give up the ones we love, your husband showed forethought in providing for you in a way and I can not think of a better means to put your money to than preparing yourself for a real life's work.

"Chiropractic is a profession based upon a science. While your education may be limited you have the intelligence and the determination and sufficient education to understand the English language you would have no difficulty in getting a knowledge of this subject so that you could go out and practice and be efficient. You can enter at any time and in eighteen months, upon making your grades, can be graduated. If you can come at once it will be well for you to do so, but if not, make your arrangements to be here sure by the first Monday in April. Living conditions here are very reasonable. You will find no difficulty in getting good and economical living quarters. We will do what we can to help you when you come. You will find the student body a fine working, virile body. Oklahoma City is a city of 125,000 which offers the advantages of a city of this size and you will enjoy life while here.

"I am sending you a catalogue under separate cover which will give you all the information I have not given you in this letter.

"Trusting that we will hear from you or see you in a short time, I am.

"Very truly,

"CARVER CHIROPRACTIC COLLEGE  
"H. E. Thompson."

Here we have documentary evidence of the type of education and intelligence that one chiropractic college requires for matriculation. According to this "college" the writer of the letter was sufficiently educated and intelligent to get "a knowledge of this subject [chiropractic] so that you could go out and practice and be efficient."

**Oroya Fever.**—Since at least the time of the Incas, Peru has suffered from a strange disease which has swept over the country from time to time in the form of frightful epidemics, some of which have cost thousands of lives. One of the severest recent outbreaks occurred among the workmen building the Peruvian Central Railway between Lima and Oroya, and it is estimated that at least 7,000 individuals died in it. In 1906 at least one tenth of 2,000 workmen employed building tunnels and bridges on the Central Railway died of the fever, and one bridge in particular, which was the scene of a great many deaths from the disease, has come to be known as the Oroya Fever Bridge. Oroya fever has been constantly confused with other diseases, and it was not until the South American expedition of the Harvard School of Tropical Medicine made an investigation of the disease that some order was brought out of the confusion. Malaria, paratyphoid, and particularly verruga peruviana are the diseases which have been most frequently confused with Oroya fever. —Chandler, Animal Parasites and Human Disease, 1922.

## Correspondence

### MELANIFEROUS LEUKOCYTES IN THE DIAGNOSIS OF MALARIA

*To the Editor:*—In and about St. Louis, a district in which the manifestations of malaria are protean in character and of endless variety, it seems strange that a means of diagnosis in malaria is ignored that is used by the American government in the Philippines, employed in the malarial zones of the British Empire, and warmly advocated and championed by no less an authority than Sir Patrick Manson. Since the discovery by Laveran, we have been in a position to explain the observation of Loomis, who forty years ago drew attention to the relationship that existed between pigmented leukocytes and malaria. That plasmodial pigment is engulfed by the phagocytes no one will deny, but in scientific proselytizing I have found that to gain assent in reasoning back from effect to cause, from plasmodial pigment to the plasmodium itself, is quite another matter.

In G. A. Gibson's Text Book of Medicine 1:311, Manson says: "Pigmented leukocytes are easily made out and are quite as pathognomonic of malaria as the actual plasmodium itself." To those who, after the fashion of the Scotch verdict "not proven," decline to make a positive diagnosis of malaria in the absence of the plasmodium, I would recommend a careful consideration of the foregoing statement. If they will only make a few trials, search unstained blood films for pigmented leukocytes, and control their provisional diagnosis by quinin, I will venture to assert that they will be surprised to find how many cases will prove to be malarial which after blood examinations with most approved staining have been returned as negative by reason of the fact that no plasmodia have been found.

It is not to be expected that plasmodia are always to be found in the peripheral circulation, and therefore it follows that the diagnosis in actual cases of malaria must often rest in abeyance, to the confusion of the physician and the detriment of the patient.

On the other hand, pigmented leukocytes are always to be found in the peripheral circulation in malaria uninfluenced by paroxysm or quinin, and are infallible and ever present guides to diagnosis. In children, especially, in whom usually the paroxysms are not well marked, the search for plasmodia must necessarily often prove futile, whereas the pigmented leukocytes are always present. For myself, I have followed Manson's teaching for the last twenty years, having made almost a thousand blood examinations with this object in view, and can speak with enthusiasm of the labor-saving and time-saving truth of his statement.

The color of the pigment lends itself to a differential diagnosis. Light yellowish or red pigment denotes a simple type of malarial infection, while jet black pigment is indicative of the presence of the estivo-autumnal parasite. The amount of pigment present in the white corpuscles is also helpful in the interpretation of cases.

When the pigment granules in the leukocytes are few in number to the leukocyte, we are necessarily dealing with a case of recent infection. On the other hand, in long standing and chronic cases we should expect to find, and do find, the leukocytes crowded with pigment.

The diagnosis of malaria by Manson's method is simplicity itself. All that is requisite is a microscope with a one-sixth inch objective, a film of freshly drawn, unstained blood, and the ability to recognize small black specks of pigment on the white background of the leukocyte. The only possibility of mistake lies in regard to the pigmented leukocytes found in



the subjects of melanotic sarcoma—a differentiation that may be safely ignored.

JAMES ROSS CLEMENS, M.D., Webster Groves, Mo.  
Professor of Pediatrics, St. Louis  
University School of Medicine.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### PAN-SECRETIN

To the Editor:—Is the pan-secretin compound, manufactured by Henry R. Harrower, Glendale, Calif., useful in the treatment of diabetes?

F. P. CAPRON, M.D., Providence, R. I.

ANSWER.—Harrower's pan-secretin compound, according to the advertising circular, is "an endocrine combination embodying: (1) A specially prepared extract of *Islets of Langerhans* (pancreas tail), rich in its incretory glycolytic product; (2) An acid extract of the duodenal mucosa containing the pancreatic activator *secretin*, and (3) A small dose of desiccated calves *tonsil*." This formula emphasizes the fact that some of the commercial houses are carrying us back to the days of the shotgun nostrum. It would seem hardly necessary to say that such a combination as that quoted above is unscientific and that, so far as we know, there is no scientific evidence to warrant the belief that such a combination is of value. Four years ago, the Council on Pharmacy and Chemistry published a report (*THE JOURNAL*, Jan. 18, 1919, p. 213) on some of the Harrower "pluriglandular" mixtures, and gave reasons why such unscientific combinations were not acceptable for New and Nonofficial Remedies. Recently this form of therapy was discussed in the Section on Therapeutics and Pharmacology of the Royal Society of Medicine of London, and Dr. Swale Vincent, professor of physiology at the University of London, in the course of his remarks, stated that many foolish notions are abroad, one, for example, being that a preparation from the pancreas, tonsil and duodenal mucosa, taken by the mouth, is a remedy for diabetes (*British Medical Journal* 1:105 [Jan. 20] 1923). It is a sad reflection on those physicians—the number surely is comparatively small—who allow themselves to be influenced by "literature" that is sent out by commercial houses to sell their products. It appears to be difficult for some men, physicians included, to resist "the will to believe" and to substitute "the will to question" in these matters.

### ELIMINATION OF OXYURIS VERMICULARIS

To the Editor:—I have tried in the last six or seven months to get rid of pinworms (*Oxyuris vermicularis*) in a child, aged 4 years, but apparently have not had good results. I have followed very carefully the instructions given in the textbooks of pharmacology. Please outline a treatment for this condition. I have used santonin in one-fourth grain doses. Please omit my name.

V. M., Ohio.

ANSWER.—It is not surprising that the use of santonin did not lead to a cure of *Oxyuris vermicularis* infestation. These worms, at least in their adult state, live in the large intestine, where an effect from anthelmintics given by mouth cannot be expected. The only justification for the peroral administration of anthelmintics, such as santonin, in this condition lies in the fact that the worms live in the small intestine while they are immature and during impregnation. Santonin treatment might therefore be used in conjunction with the much more important treatment by means of enemas.

The chief emphasis of the treatment must be laid on the prevention of reinfection, as these worms do not proliferate in the intestine. The difficulty lies in the fact that the female worms, each of which carries many thousands of ova, begin to migrate as soon as the ova are ripe. On escaping from the anus, the worms are likely to be crushed, most especially because of the itching and consequent scratching they cause. Thus, the ova become smeared over the anal region, and sooner or later enter the mouth, chiefly by way of the hands. The reason this infestation is so much more common in children than in adults is that the child is much less cleanly and much more prone to carry unclean hands and fingers into its

mouth. From this it will be seen that the chief enemy to be exterminated is the sex-ripe female, which has its habitat in the large intestine, most especially the cecum and the rectum. If we succeed in keeping the rectum free from worms for a sufficient length of time, thereby breaking in on the vicious circle of reinfection, the patient will be cured. Hence, it is necessary to employ for a considerable time—several weeks—daily enemas of soap solution, salt solution, dilute vinegar, or even plain water. The presence of chemicals in the enema is probably of no importance. Cleanliness is everything. Not only should we aim to prevent infection of the anal region by consistent enema treatment; but we should also keep the hands and the finger nails scrupulously clean. If several children are closely associated, simultaneous treatment of all is necessary in order to prevent mutual reinfection.

### ABORTION AND PREMATURE LABOR

To the Editor:—What is the prevailing interpretation among the profession of the terms "abortion" and "miscarriage"? Some authors, such as Hirst, define abortion as interruption of pregnancy before the fourth month and miscarriage from the fourth to the seventh, while others, such as DeLee, use application of the term abortion to interruption before the seventh month, and refer to miscarriage as a term only popularly used by the laity.

LOUIS TUFT, Pittsburgh.

ANSWER.—"Abortion" is generally used to mean any interruption of pregnancy which occurs before the fetus is viable; interruptions of pregnancy which occur after the fetus is viable, but before full term, are designated "premature labor." There is no sharp line of division, but, as a rule, the end of the twenty-eighth week is taken as such. Physicians use the term "miscarriage" but little in scientific discussions; laymen employ it to designate any premature interruption of pregnancy at any time. In law, any interruption of pregnancy before full term is designated an abortion.

### CAUSE OF SUBNORMAL TEMPERATURE

To the Editor:—Please give me the etiology and prognosis of subnormal temperature. Can it be owing to a defect in the endocrine glands?

M. S. CANFIELD, M.D., Frankfort, Ind.

ANSWER.—The preservation of a normal temperature depends on the balance between heat production and heat dissipation. The former is a function chiefly of the muscles, and is the result of metabolic changes. Heat loss is provided for in many ways, chiefly by the exposure of blood in the skin to lower temperatures, and the cooling that comes from sweating and evaporation. A subnormal temperature may result either from diminished heat production or from excessive loss. Under modern conditions of life, with the possibilities for regulating the atmospheric temperature and the skin exposure by variations in the clothing, a subnormal temperature from excessive loss of heat is rare, but may occur from exposure and privation. Diminished heat production occurs in many states of lowered vitality and diminished metabolism; it is likely to be associated with subnormal body temperature. This is almost a normal occurrence in the aged, and is common in many conditions of cachexia and inanition, such as those of convalescence from fevers and in cancer. All conditions of diminished oxygenation, such as congenital heart disease, cardiac failure, alcoholism, jaundice, uremia and pernicious anemia, are likely to cause a subnormal temperature. Endocrine gland disorders associated with diminished basal metabolism of any severity are almost inevitably accompanied with subnormal temperature. Among these conditions, special reference should be made to Addison's disease (suprarenal deficiency) and myxedema (thyroid insufficiency). Subnormal temperatures are often noted in the early stages of tuberculosis, especially in tuberculous meningitis. They also accompany serious shock, such as that due to very severe abdominal inflammations or perforations of a hollow viscus.

### USE OF INITIALS TO INDICATE MEMBERSHIP IN AN ORGANIZATION

To the Editor:—As a matter of curiosity, I write to inquire whether it is considered good form to place after one's name initials indicating membership in certain societies; for example, F.A.C.S. or F.A.C.P., as the case may be. Could one with equal propriety use the letters F.A.M.A. as indicating fellowship in the American Medical Association or other societies, varying the letters accordingly?

W. F. VON ZELINSKI, M.D., Fort Bragg, N. C.

ANSWER.—The use of such initials as F.A.C.S., F.A.C.P. or F.A.M.A. to indicate membership in an organization is purely a matter of taste.



Medical Education, Registration and  
Hospital Service

COMING EXAMINATIONS

IDAHO: Boise, April 4. Dir., Mr. Harry L. Fisher, Boise.  
IOWA: Des Moines, March 8-10. Sec., Dr. Rodney P. Fagen, State House, Des Moines.  
MAINE: Portland, March 13-14. Act. Sec., Dr. Adam P. Leighton, 192 State St., Portland.  
MONTANA: Helena, April 3. Sec., Dr. S. A. Cooney, Power Bldg., Helena.  
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.

FURTHER DATA ON THE ALLEGED LACK OF  
PHYSICIANS AND THE DISTRIBUTION  
OF IRREGULAR PRACTITIONERS

E. P. LYON, PH.D., M.D.  
Dean, University of Minnesota Medical School  
MINNEAPOLIS

In *Minnesota Medicine*, February, 1923, I published certain facts with regard to the distribution and supposed need of physicians in Minnesota and neighboring states. Something concerning the distribution of osteopaths and chiropractors was also indicated. These facts were obtained from a study of notices of locations for physicians on file in my office and from a study of the American Medical Association Directory, in comparison with a list of incorporated places in Minnesota as reported by the United States census of 1920.

My conclusions were that a real lack of physicians exists in the Northwest only in a few new and sparsely settled communities; and that the increase in irregulars is not due to a lack of physicians, the osteopaths and chiropractors being located where there are already abundant physicians and not where there are no physicians.

It occurred to me that further light on the questions in which I was interested might be obtained by direct inquiries addressed to the villages of this state. A return post-card was sent to every place in Minnesota with a population between 100 and 1,000. There were 540 places on the list, and 381 replies, or 70 per cent., were received.

The return card bore information as to the (1) number of physicians (M.D.'s); (2) number of osteopaths, and (3) number of chiropractors, with a column for remarks.

The results are summarized in the accompanying table.

SUMMARY OF REPLIES						
Population of Place	Number of Replies	Have Physicians (M.D.)	Percentage Having Physicians	Have Osteopath	Have Chiropractor	Osteopath or Chiropractor but No Regular Physicians
From 100 to 199	61	6	10	0	0	0
200 to 299	87	34	38	0	1	1
300 to 399	79	53	67	0	2	0
100 to 399	227	93	41	0	3	1
400 to 499	46	37	93	1	4	1
500 to 599	33	32	97	0	2	0
600 to 699	22	20	91	0	1	0
700 to 799	27	26	97	1	5	0
800 to 899	17	16	95	0	3	0
900 to 999	15	15	100	0	4	0
400 to 999	154	146	95	2	19	1

It will be noted that 95 per cent of places from 400 to 999 population have physicians. Above 900, all places have physicians. Only two places have osteopaths or chiropractors unless they also have regular physicians. In fact, while 239 places in Minnesota of from 100 to 999 population have physicians, only twenty-one irregulars are found in the whole

381 places replying to the questionnaire. The sectarians are in the larger places—places above 1,000 in population.

In my opinion, these figures substantiate the view that there is no widespread lack of physicians, no ground for the statement that osteopathy and chiropractic are filling a need of physicians, no necessity for lowering standards or increasing registration in medical schools.

The line labeled "Remarks" brought out a variety of comments. Many small places without physicians asserted a need for physicians, or stated that good openings existed. Sixteen places of from 100 to 199 population, and twenty-seven of from 200 to 299 made such statements. As soon as one reaches a population of 300 these requests become less, there being twelve requests from towns of from 300 to 399, two requests from towns of from 400 to 499, and none from towns of from 500 to 999.

On the other hand, two small towns with two physicians each make the comment: "We have one doctor to spare."

The places of from 200 to 299 present the most urgent appeals. Several state that they have previously had physicians, and indicate irritation that they cannot get them again. Says one: "Nearest town, 10 miles. We need a doctor and can support one of the right kind. The doctors in this part of the country have all moved to the county seat, and we can either die or be robbed. Just a matter of choice with us. However, it is fine for the doctors." Another says: "We have had several doctors locate in the village in the last twenty years. All made a stake and then moved away to some larger place."

These comments indicate that the farming population is not adjusted to the good roads-automobile-telephone combination. Furthermore, with distance, fees have increased and the farmer objects to that. While country patients may be as well cared for as in the days when physicians were more scattered, the people are not so well satisfied. Probably much of the talk of need for physicians arises from this fact.

Michigan Reciprocity Report

Dr. Beverly D. Harison, secretary, Michigan State Board of Registration, reports that from Jan. 1, 1922, to Jan. 1, 1923, eighty-four candidates were licensed by reciprocity. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Alabama.....	(1911)	(1911)	Georgia
University of Arkansas.....	(1917)	(1917)	Arkansas
Yale University .....	(1903)	(1903)	Connecticut
Georgetown University .....	(1902)	(1902)	Dist. Colum.
Howard University .....	(1895)	(1895)	Iowa
College of Phys. and Surg., Chicago.....	(1895), (1905)	(1895), (1905)	Illinois
Bennett College of Eclectic Medicine and Surgery...	(1907)	(1907)	Illinois
Hahnemann Medical College and Hosp. of Chicago...	(1906)	(1906)	Illinois
Loyola University.....	(1922, 2)	(1922, 2)	Illinois
Northwestern University.....	(1910), (1921)	(1910), (1921)	N. Dakota
Rush Medical College.....	(1897) Illinois, (1899) (1900), (1916), (1917), (1920, 2), (1921) Illinois, (1915) Arizona	(1897) Illinois, (1899) (1900), (1916), (1917), (1920, 2), (1921) Illinois, (1915) Arizona	Utah
University of Illinois.....	(1912), (1913)	(1912), (1913)	Wisconsin
Indiana University .....	(1921)	(1921)	Indiana
Medical College of Indiana.....	(1892) Indiana, (1898)	(1892) Indiana, (1898)	Texas
State University of Iowa College of Medicine.....	(1920)	(1920)	Iowa
Hospital College of Medicine, Louisville.....	(1900)	(1900)	Tennessee
Louisville Medical College.....	(1906)	(1906)	Indiana
University of Louisville.....	(1910)	(1910)	Kentucky
Tulane University.....	(1910), (1919)	(1910), (1919)	Louisiana
Medical School of Maine.....	(1907)	(1907)	Maine
College of Physicians and Surgeons, Baltimore.....	(1913)	(1913)	Maryland
Johns Hopkins University.....	(1918), (1920)	(1918), (1920)	Maryland
Maryland Medical College.....	(1900)	(1900)	Maryland
Harvard University.....	(1908) Ohio, (1919)	(1908) Ohio, (1919)	Minnesota
Tufts College Medical School.....	(1917)	(1917)	Mass.
University of Minnesota Medical School.....	(1915)	(1915)	Minnesota
Washington University .....	(1919)	(1919)	Missouri
Barnes Medical College.....	(1898)	(1898)	Kentucky
Ensworth Medical College.....	(1903)	(1903)	Oklahoma
Kansas City Medical College.....	(1891)	(1891)	Nebraska
St. Louis College of Physicians and Surgeons.....	(1918)	(1918)	Missouri
St. Louis University School of Medicine.....	(1911), (1918), (1921), (1922)	(1911), (1918), (1921), (1922)	Iowa
Creighton University .....	(1910)	(1910)	Nebraska
Columbia University .....	(1916), (1918)	(1916), (1918)	New York
University and Bellevue Hospital Medical College....	(1920)	(1920)	New York
University of Buffalo.....	(1891) Illinois, (1910), (1920)	(1891) Illinois, (1910), (1920)	New York
Leonard Medical College.....	(1909)	(1909)	Georgia



Eclectic Medical College.....	(1899)	Ohio
Medical College of Ohio.....	(1897)	Indiana
Ohio State University College of Medicine.....	(1910)	Ohio
Starling Medical College.....	(1891)	Illinois
University of Cincinnati.....	(1921)	Ohio
Western Reserve University.....	(1909)	Mass.
Jefferson Medical College.....	(1920)	Virginia
Medico-Chirurgical College of Philadelphia.....	(1915)	Penna.
Temple University.....	(1920)	Delaware
Meharry Medical College.....	(1909)	Georgia
University of Vermont.....	(1892)	Vermont
University of Virginia.....	(1918)	Iowa
McGill University.....	(1914)	Maryland
University of Toronto.....	(1910)	Illinois
University of Vienna, Austria.....	(1883)*	Illinois
University of Helsingfors.....	(1907)*	Mass.
University of Budapest, Hungary.....	(1915)*	Ohio
Catholic University, Louvain, Belgium.....	(1894)*	Mass.

\* Graduation not verified.

## Book Notices

**PREMATURE AND CONGENITALLY DISEASED INFANTS.** By Julius H. Hess, M.D., Professor and Head of the Division of Pediatrics, University of Illinois College of Medicine. Cloth. Price, \$5.50. Pp. 397, with 189 illustrations. Philadelphia: Lea & Febiger, 1922.

Medicine has become so enormous in its scope and its facts, and hypotheses concerning disease have accumulated to such an extent that the abbreviations necessary in the general textbooks fall short of the necessary knowledge of the diseases of which these textbooks treat. It is becoming increasingly necessary, therefore, to consult monographs to obtain an adequate idea of any subject in which one may be interested. It is to meet just such a need that this volume appears. It is the only book in English, and the only book of any claim to prominence, if, indeed, it is not the only book that has ever appeared on the subject. In view of the absence of background, it is surprising that the writer should have assembled and systematized his facts so well. The book is well written and beautifully illustrated; what is more, the illustrations are to the point. The literature has evidently been studied thoroughly, though it is not quoted exhaustively. The book begins with a short chapter on definitions, followed by one on classification which takes up the etiology of prematurity. This is followed by an excellent chapter on physiology. One is struck after reading this by the fact that our knowledge of the physiology of the premature infant is certainly very limited, although the author has evidently used every endeavor to get at all the facts. In this chapter the roentgen-ray examination of the skeleton presents a new feature and is thoroughly covered. In the clinical chapters one is struck by the great detail in the portions devoted to treatment, a necessary thing since the subject is not well understood by the average physician. On the whole, the book is conservative, well written and instructive. It deals with a subject about which we know little, but such a book is calculated to arouse interest and therefore is of value, not only for the practical information it contains, but also because of the increased interest it is likely to arouse in the subject.

**DISEASES OF THE HEART.** A Handbook for Students and Practitioners. By I. Harris, M.D., L.R.C.P., Honorary Physician in Charge, Cardiological Department, Liverpool Northern Hospital. Cloth. Price, \$3.50. Pp. 196, with 49 illustrations. New York: William Wood & Co., 1922.

This book is supposed to give a complete account of the diseases of the heart, and it was written for the student and the practitioner. The author did not in either of these respects carry out his intentions. The book is far from being, even in an abbreviated form, a complete presentation of our present knowledge of the subject. Many essentials are omitted: the discussion of chronic adhesive pericarditis may be cited as an example. No mention is made of the marked increase in the size of the heart, or of the perihepatitis with the associated ascites that is so often the outstanding feature in those patients in whom the condition is diagnosed during life. The author is not always in accord with recognized authorities on points generally accepted. Adam-Stokes syndrome is not considered under the subject of heart block. The mechanism of this disorder is explained on the basis of an increase in the refractory period of the ventricle rather than attributed to a defective conduction of the auriculo-

ventricular bundle. The subject matter is poorly presented. The reader is often in doubt as to the point the author wishes to make. This feature alone would make the book undesirable for the student.

**GREEK BIOLOGY AND MEDICINE.** By Henry Osborn Taylor. Cloth. Price, \$1.50. Pp. 151. Boston: Marshall Jones Company, 1922.

**GREEK BIOLOGY AND GREEK MEDICINE.** By Charles Singer. Cloth. Price, \$1. Pp. 128, with 8 illustrations. New York: Oxford University Press, 1922.

Dr. Taylor's volume is part of a series on "Our Debt to Greece and Rome." It comes at a time when it must be inevitably compared with a similar recently published book by Charles Singer of England. The book by Taylor is divided into sections on early biology, the hippocratic writings, Aristotle's biology, progress in anatomy, the system of Galen, and linkage with our modern times. It is thus a series of orderly essays progressing according to a definite scheme, and thereby excellent teaching material. On the other hand, the book by Singer is a delightfully written essay, easily readable, wandering almost nonchalantly among the achievements of the ancient Greeks, picking up a thought or an example here and there, and, on the whole, presenting an excellent picture of the medicine of the classic Greek school. In both books one is confronted by the fact that modern authors incline to read into the philosophy of the ancients knowledge of facts that they could not possibly have known. Such synthesis is so simple as to be exceedingly attractive, but it is likely to be a source of historical error. It is Taylor's belief that the Greeks recognized particularly the fundamental fact in biology and medicine that the organic is distinguishable from the inorganic by its power to heal itself when diseased, or, in other words, that Nature is the greatest healer, and that, regardless of our many discoveries today, we must return to this conclusion. After all, however, we have come a long way in understanding the methods by which the beneficent Nature brings the healing about, and our advances of the last half century need not be slighted in our admiration for the far-sightedness of the ancient observers.

**UNIVERSITY OF IOWA STUDIES IN PSYCHOLOGY.** Psychological Monographs, Vol. VIII. Edited by Carl E. Seashore. Pp. 378. Princeton: Psychological Review Company, 1922.

In this monograph are fourteen articles on sound perception, two on measurements of motor control, and one on measurement of coordination of eye and hand. In these articles, instruments, technic and norms are discussed. As such they serve as a point of comparison and departure for studies of the diseased. The results of some of the tests of tone perception show a wide range between individuals. The methods and tests are rather too elaborate to lead to their use in the medical clinical laboratories.

**YEAR-BOOK OF PHARMACY.** Comprising Abstracts of Papers Relating to Pharmacy, Materia Medica, and Chemistry, Contributed to British and Foreign Journals from July 1, 1921, to June 30, 1922, with the Transactions of the British Pharmaceutical Conference at Its Fifty-Ninth Annual Meeting. London: J. & A. Churchill, 1922.

The British Pharmaceutical Association is to be congratulated on the prompt publication of the annual year book. While it does not contain the abstracts for all the year 1922, it covers a large portion of the year and includes the 1921 abstracts left over from the previous edition. This is in favorable contrast with the American Pharmaceutical Association, which has just issued the year book for 1920. The British book contains abstracts in the usual divisions, such as alkaloids, bacteriologic and clinical tests, essential oils, plant analysis, newer remedies, pharmacology and therapeutics, and other phases affecting pharmacy. About one third of the book is devoted to the proceedings and scientific contributions of the British Pharmaceutical Conference.

**ENCÉPHALITE HYPERTHERMIQUE.** Guérie à Lourdes, le 8 Septembre 1922. Observation Médicale avec Courbe de Température. Par les Drs. H. et J. Bon. Paper. Price, 3 francs. Pp. 23, with 3 illustrations. Paris: A. Maloine et Fils, 1923.

This is plainly faith cure propaganda in the guise of a scientific medical report which is devoid of merit. There is no good reason offered for the diagnosis of encephalitis.



## Medicolegal

### Agreement Creating a Partnership

(*Runo v. Rothschild (Mich.)*, 189, N. W. R. 183)

The Supreme Court of Michigan says that the plaintiff made an affidavit in which he stated that prior to a certain date he had practiced his profession as an urologist, and the defendant was his assistant. On the date mentioned the plaintiff offered to permit the defendant to continue to occupy the suite of offices, to make use of the laboratory and to practice his profession for the plaintiff's patients, the income from practice and laboratory work to be used to pay all the bills necessary to the maintenance of the offices, the practice and the laboratory, after which the proceeds of the income were to be divided share and share alike. The defendant accepted the offer, and entered on the performance of the agreement, but subsequently failed to pay certain bills and make proper division of the proceeds, it was alleged.

Did this agreement imply a mere hiring of the defendant or a partnership between the parties? The defendant contended that it indicated a partnership, and that therefore the plaintiff's remedy was by way of an accounting, and not an action at law and for the arrest of his copartner; with which the court agrees, in affirming a judgment dismissing this action at law when there was such an arrest. The affidavit, the court says, showed an agreement under which the defendant was to take charge of the plaintiff's offices and equipment and carry on the business for their joint benefit, pay all expenses out of the income, and divide the profits with the plaintiff. This severed their previous relations, under which the defendant was but an employee, and constituted the parties copartners.

While the law has always considered the partnership relation one of contract and intention, it determines the status of the parties from their agreement, and draws their intention from their acts. The defendant had the right to manage and control the business, and his share of the profits was not in the nature of compensation for services rendered to the plaintiff. The plaintiff did not hire the defendant to carry on his practice, but entered into relations with him wholly inconsistent with those of master and servant or employer and employee. The defendant was empowered to act for both in the management of the business, and both were liable for the expenses if the income was not sufficient to pay the same. This was not a mere joint adventure, but a community of interests, with all the essential incidents of partnership rights and liabilities. The agreement delegated to the defendant the power and authority to manage and control practice and laboratory for their common benefit and profit. The plaintiff contributed toward the earning of profits, in the practice to be conducted by the defendant, his offices, laboratory and equipment, and his clientele; and the defendant contributed his time, labor and skill, and such new business as he could command; and these contributions were dedicated to the enterprise for the profits to be derived therefrom.

### Validity of Award Based on Condition When Discharged by Physicians

(*London Guarantee & Accident Co., Limited, et al. v. Industrial Commission et al. (Colo.)*, 210 Pac. R. 70)

The Supreme Court of Colorado says that a claimant for compensation under the workmen's compensation act of that state was injured, Aug. 8, 1919. September 19, a voluntary agreement, which the state industrial commission approved, was entered into by the insurance carrier and the claimant, for the payment to him of \$10 a week for ninety-two weeks. The case was then set down for hearing, to determine whether the claimant was entitled to any further compensation, and the extent of his permanent disability, if any. It plainly appeared that, at the end of sixty days following the accident, the claimant was told by the attending physicians furnished by the employer, or the insurance carrier, that they could do nothing further for him. Being thus left to shift for himself, he consulted surgeons, who performed two serious and

unusual operations, the result of which was an improvement in his condition. His health was not restored, nor did he regain his normal ability to perform manual labor. On the final hearing by the industrial commission, in the latter part of 1921, it appeared to that body, and it so found, that the claimant's disability, at the expiration of the sixty days from the time of the accident, was 80 per cent., and would have so continued had not these operations been performed, but that after the operations were performed the permanent result of the accident was still a loss of 33 1/3 per cent. of the use of his right leg. Under these circumstances, the award for permanent disability was computed on the basis of an 80 per cent. loss of the use of the claimant's leg. None of it was for medical attention, but for a permanent disability actually existing when the physicians of the employer or insurance carrier discharged him at the end of the sixty-day period. The making of this additional compensation, which might be equal to, or greater than, the amount of the claimant's expenses incurred for the two operations, was not equivalent to an award by the commission for medical attention in excess of the sum of \$200, the maximum allowed by the statute for medical attention during the sixty days immediately following the accident; nor was it equivalent to an award for attention given after the period of sixty days following the accident. Neither the statement that the commission's award for increased permanent disability was an indirect method of payment for medical attention beyond the period of sixty days following the accident, nor one that the award compelled the employer and insurance carrier to pay for an assumed disability which the claimant did not suffer, was borne out by the findings of fact. The statute authorizes the commission, of its own motion, at any time, after notice to the parties interested, to review any award previously made, and on such review to make another award diminishing, maintaining, or increasing the compensation previously awarded, subject to the maximum and minimum provided in the act. The commission, therefore, was authorized in this case to increase the award which it first tentatively made, and had the right to fix the permanent disability as of the date when the physicians of the employer and insurance carrier notified the claimant that they were unable to do anything further for him. If the theory of the employer and insurance carrier to the contrary were sustained, it would be equivalent to penalizing the claimant for taking measures to protect himself by diminishing his disability to perform labor. Considering the wide discretion vested in the commission, and the spirit and purpose of the statute, the court holds that the commission acted humanely as well as fairly to the employer and the insurance carrier, in reaching its ultimate conclusion. Wherefore, a judgment approving the findings and the award is affirmed.

## Society Proceedings

### COMING MEETINGS

- Alabama, Medical Association of the State of, Mobile, April 17-20. Dr. H. G. Perry, State Board of Health, Montgomery, Secretary.
- American Association of Anatomists, Chicago, March 28-30. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.
- American Association of Pathologists and Bacteriologists, Boston, March 29-30. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.
- American Association of Physicians, Atlantic City, May 1-3. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.
- American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.
- Georgia, Medical Association of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.
- Kansas Medical Society, Kansas City, May 2-4. Dr. J. F. Hassig, 800 Minnesota Avenue, Kansas City, Secretary.
- Louisiana State Medical Society, New Orleans, April 10-12. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.
- Maryland, Medical and Chirurgical Faculty of Baltimore, April 24-26. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore, Secretary.
- North Carolina, Medical Society of the State of, Asheville, April 17-19. Dr. L. B. McBrayer, Sanatorium, Secretary.
- Ohio State Medical Association, Dayton, May 1-3. Mr. D. K. Martin, 131 East State Street, Columbus, Secretary.
- South Carolina Medical Association, Charleston, April 17-19. Dr. Edgar A. Hines, Seneca, Secretary.
- Tennessee State Medical Association, Nashville, April 10-12. Dr. Larkin Smith, 154 Eighth Avenue, N., Nashville, Secretary.
- Western Electro-Therapeutic Association, Kansas City, Mo., April 19-20. Dr. Charles Wood Fassett, 115 E. 31st Street, Kansas City, Secretary.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Ophthalmology, Chicago

January, 1923, 6, No. 1

- Mists and Halos of Glaucoma. R. H. Elliot, London, England.—p. 1.  
Ophthalmoscopy by Red Free Light. A. S. Green and L. D. Green, San Francisco.—p. 16.  
Formalized Cartilage Implants Following Enucleation W. B. Doherty, New York.—p. 19.  
Action of Miotic Drugs on Diseased Intraocular Structures. R. J. Curdy, Kansas City, Mo.—p. 22.  
Accommodation Rule with New Features. C. Berens, Jr., New York.—p. 26.  
Etiology of Sympathetic Ophthalmia. H. H. Stark, El Paso, Tex.—p. 29.  
Graduate Teaching of Ophthalmology. L. Post, St. Louis.—p. 33.  
Parinaud's Conjunctivitis with Eosinophilia. T. W. Weaver and W. G. Gillett, Wichita, Kan.—p. 36.  
Unsuspected Foreign Body in Lens. I. A. Abrahamson, Cincinnati.—p. 37.  
Indirect Rupture of Sclera. A. Brav, Philadelphia.—p. 38.

#### American Review of Tuberculosis, Baltimore

January, 1923, 6, No. 11

- Clinical Pathology of Pulmonary Tuberculosis in Adults: Analysis of Five Hundred Necropsies. J. Walsh, Philadelphia.—p. 975.  
Statistical Study of Decline in Number of Deaths from Tuberculosis of Lungs in Boston, 1898-1921. J. O. Emerson, Boston.—p. 994.  
\*Pulmonary Tuberculosis Among Negroes. H. G. Carter, Burkeville, Va.—p. 1002.  
\*Chronic Bronchiectasis Terminating in Phthisis Florida. H. A. Bray, New York.—p. 1008.  
Mechanism of Compensation in Pulmonary Tuberculosis and Its Relation to Physical Signs. H. A. Bray, New York.—p. 1013.  
\*Complement Fixation Reaction as Applied to Tuberculosis. J. D. Aronson and P. A. Lewis, Philadelphia.—p. 1024.  
\*Resistance to Experimental Peritoneal Tuberculosis Following Oil Injections. W. F. Petersen and S. A. Levinson, Chicago.—p. 1035.  
Preservation of Cultures of Human and Bovine Tubercle Bacilli. H. J. Corper and H. Gauss, Denver.—p. 1040.  
\*Periodic Variations in Basal Metabolism Rate in Tuberculous Women. P. H. Pierson, San Francisco.—p. 1046.

**Pulmonary Tuberculosis Among Negroes.**—Carter records the results of treatment of pulmonary tuberculosis in negroes in such a way that an intelligent comparison can be made with those of institutions admitting whites. The results at Piedmont Sanatorium prove beyond question that the negro, although he shows less resistance against the disease than the white man, will respond to treatment for pulmonary tuberculosis, and that if treatment is begun in the early stages of the disease the large percentage of them will continue well. Syphilis as a complication of tuberculosis renders the prognosis more grave than simple tuberculous infection. Syphilis as a disease of the lung has been demonstrated in four clear cut examples in a series of sixteen cases in which the sputum was negative and the Wassermann was positive. If the "young adult type" of tuberculosis is indicative of lessened resistance on account of absence of contact, then the Piedmont records will go to show that the high death rate from pulmonary tuberculosis among negroes is due to absence of contact rather than unsanitary surroundings. The records continue to show that the mulatto has a better resistance against pulmonary tuberculosis than the pure bred negro.

**Chronic Bronchiectasis Terminating in Acute Phthisis.**—Bray's patient presented evidence of a localized pulmonary lesion at the base of the left lung for a period of at least seven years. This was attended by productive cough and mucopurulent sputum, partly residual and negative for tubercle bacilli. The woman's features were somewhat cyanosed and her fingers clubbed. These clinical manifestations suggested some condition other than tuberculosis, probably bronchiectasis. This suspicion was heightened by the absence of any striking change in the clinical manifestations of the disease during this period, by the negative radiographic examination, and finally by the contrast in the clinical picture, physical and radiographic findings when the condition became complicated by phthisis florida.

**Complement Fixation Reaction in Tuberculosis.**—Aronson and Lewis believe that they are justified in concluding that

in the recent past those who have worked with complement fixation in tuberculosis have given undue weight to the antigen and have paid too little attention to other fundamental factors concerned in the reaction. They found no evidence of more than one antigenic substance, and this was found in acceptable form in several preparations. Petroff's glycerin extract, Besredka's antigen, the alcoholic extract of the tubercle bacillus used by Craig, the simple suspension of the living tubercle bacillus and doubtless the "autolysate" of Corper are of essentially equal worth. The most important feature of the reaction is that the time of primary incubation is longer than in the classical Wassermann reaction (from two to four hours, as against one-half hour). The longer time is necessary to secure comparable results with the bacillary suspension which becomes less practical on this account, as well as by reason of its limited keeping qualities. The authors assert that their experience has continued to show that the application of the reaction in practice is limited by the fact that about 10 per cent. of clinically normal persons give a positive reaction. This is not materially different with any antigen.

**Resistance to Experimental Peritoneal Tuberculosis Following Oil Injections.**—Petersen and Levinson found that the experimental intraperitoneal injection of oils (sperm oil, peanut oil, liquid petrolatum) in rabbits, following an intraperitoneal inoculation with human tubercle bacilli, occasionally prevents the development of local tubercles in the peritoneum but does not alter the development or course of the tuberculosis in other organs. When bovine strains were used this effect was not apparent. Inasmuch as liquid petrolatum seems as effective as the animal or vegetable oils used, the effect is probably due to the mild peritoneal irritation brought about by the oils which can be demonstrated by histologic examination. In view of the fact that olive oil has been observed to influence the implantation and development of cancer transplants (Nakahara) the authors suggest that it is probable that the mechanism involved in this increased resistance is similar in tuberculosis and cancer.

**Variations in Basal Metabolism in Tuberculous Women.**—Pierson found a menstrual or premenstrual rise in the basal metabolic rate in tuberculous women, followed by a fall during the postmenstrual period in the few cases studied. He thinks that this variation may explain some of the differences in opinion as to the basal metabolic rate in tuberculosis and should be taken into account when figures are presented regarding this test. There is added evidence that the thyroid or several endocrine glands are involved in the ability of an individual, or a family, to resist tuberculosis.

#### Archives of Surgery, Chicago

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- \*Bile Factor in Pancreatitis. F. C. Mann and A. S. Giordano, Rochester, Minn.—p. 1.  
\*End-Results of Five Hundred Cases of Chronic Appendicitis. J. B. Deaver and I. S. Ravdin, Philadelphia.—p. 31.  
\*Experimental Traumatic Shock. VI. Action of Ether on Circulation in Traumatic Shock. M. Cattell, Boston.—p. 41.  
Roentgenologic Aspect of Chronic Appendicitis. H. K. Pancoast, Philadelphia.—p. 85.  
\*Relation of Heart, Pericardium and Heart Valves to Anterior Chest Wall. L. T. LeWald, New York.—p. 89.  
\*Value of Pericardiotomy in Diagnosis and Treatment. J. B. Roberts, Philadelphia.—p. 101.  
Chronic Noninflammatory Lesions of Knee Joint. M. S. Henderson, Rochester, Minn.—p. 118.  
\*Gastrojejunal Ulcer: Experimental Study. A. H. Montgomery, Chicago.—p. 136.  
\*Mesenteric Vascular Occlusion. L. Brady, Baltimore.—p. 15.  
Bilateral Chronic Open Pneumothorax Cured by Negative Tension. Report of Case. E. M. Eberts, Montreal, Canada.—p. 168.

**Bile Factor in Pancreatitis.**—The bile factor in pancreatitis was investigated by Mann and Giordano from two chief aspects, the anatomic and the experimental. The investigation proved that an anatomic and physiologic basis for the theory that reflux of bile may occur in the pancreatic duct does exist. The evidence indicates that such a reflux of bile may rarely be the cause of chronic pancreatitis. The possibility of bringing into play a physiologic mechanism which can infiltrate the pancreas with sterile bile to an extent actually to produce acute pancreatitis is questionable. Granted that the necessary anatomic, physiologic, and patho-



logic factors are present and that the reflux of sterile bile under such conditions does produce pancreatitis, such cause for the condition must be very rare; few cases are on record. It is emphasized that any mechanism which will afford the possibility for bile to pass into the pancreatic duct will also obstruct the flow of pancreatic juice. Furthermore, bile has been found in the pancreatic duct without acute pancreatitis. It is urged that pathologists should, in cases of pancreatitis, examine the relationship of the two ducts to the duodenum and to each other in order to determine whether it is anatomically possible for bile to pass into the pancreatic duct. These observations prove conclusively that the explanation of the cause of most cases of pancreatitis must be sought elsewhere.

**End Results of Chronic Appendicitis.**—The analysis made by Deaver and Ravdin shows that the most frequent symptom of chronic appendicitis is periodic pain in the right iliac fossa, and in a patient carefully studied this symptom is suggestive. The symptoms in seven cases of tuberculous appendicitis and one case of carcinoma did not differ in any way from the remaining cases in the series. The mortality in the cases in which operation was performed during the quiescent period was 0.27 per cent., while in the cases in which operation was performed during the acute stage it was 2.7 per cent. There seems to be a definite relation between appendicitis and upper abdominal disease and between appendicitis and pelvic disease. Hematemesis may be a manifestation of chronic appendicitis. Of the patients followed up, 83.1 per cent. were entirely relieved, 9.7 per cent. were partially relieved and 7.07 per cent. were unrelieved. The latter group was partly due to pathologic conditions unrecognized because of faulty study and exploration.

**Action of Ether on Circulation in Traumatic Shock.**—Cattell discusses the effects of ether on the blood pressure, its action on the heart, vasomotor system and blood vessels, and from the point of view of the circulation as a whole, together with a consideration of the changes occurring in shock. In the normal animal, the inhalation of strong ether results in a sudden drop in the arterial pressure, which is quite temporary. As the anesthesia deepens, the pressure gradually recovers until, by the time the eye reflex has disappeared, it may have returned to its original level. In the shocked animal, there is no recovery of the blood pressure after the primary fall, and the pressure continues to fall to zero even before the eye reflex disappears. Observation on the heart volume of intact cats, and on the contractions of the isolated cold blooded heart, together with deductions from blood pressure records, showed that the administration of ether, from its very beginning, results in a depression of the heart and a decrease in its output, which is sufficient to account for the fall in pressure in both the normal and the shocked animals. Determinations of leg volume with a plethysmograph, perfusion rate measurements, and results obtained by the injection of ether directly into the circulation, together with the form of the blood pressure curves, indicate that ether causes a contraction of the peripheral vessels. In the blood pressure curves resulting from the administration of ether in the normal animal, the primary drop is probably due to an influence on the heart; and the subsequent recovery of the blood pressure, to a compensatory vasoconstriction. In the shocked animal, no evidence of a vasoconstriction produced by ether was obtained, and pressor effects from asphyxia or sensory nerve stimulation become less or are entirely absent. The condition of ether sensitiveness is brought about by any circumstances which tend to depress the general condition of the animal, such as low blood pressure, hemorrhage, severe operations or the injection of acid into the circulation. The cause of the greater depressing influence of ether on the blood pressure in shock appears to be due to a disturbance of the vasomotor system. The usual compensatory constriction no longer occurs to offset the decreased output of the heart, and the pressure continues to fall.

**Determining Relation of Heart and Its Valves.**—LeWald describes the method he used to make teleroentgenograms which would show the exact position of the heart valves. Cadavers were used in the first study. The position of the heart valves was established by means of wire loops.

**Pericardiotomy for Diagnostic Purposes.**—Experience in pericardial surgery has given Roberts strong evidence in support of the opinion that careful investigation should always be made by percussion, auscultation and roentgenographic study before resort is had to tapping, or other surgical attacks, as the line of treatment in suspected pathologic conditions of the heart. Recent researches and numerous war experiences in treatment of thoracic wounds and the acknowledged innocuousness of pericardial incisions indicate that it may be at times not only wise, but imperative, deliberately to open the sac of the heart for diagnosis.

**Experimentally Produced Gastrojejunal Ulcer.**—Of sixty-three dogs that were subjected to a gastro-enterostomy by Montgomery (the pylorus being left patent), a definite gastrojejunal ulcer was found in four. In every case the ulcer was a fairly large, solitary lesion, somewhat indurated and well defined. Macroscopically and microscopically, it showed all the characteristics of a chronic ulcer. These ulcers have a tendency to perforate and are similar in other respects to gastrojejunal ulcers found in man. They seem to occur following hematomas that affect the jejunal mucous membrane at the cardiac angle of the stoma where suturing and hemostasis are imperfect. Hematomas situated at other places along the suture line may be absorbed and produce no damage. These ulcers occurred independent of the kind of suture material employed.

**Mesenteric Vascular Occlusion.**—Fourteen instances of mesenteric vascular occlusion are analyzed by Brady. In three cases there was no formation of an intestinal infarction and the mesenteric thrombosis was discovered only at necropsy. In thirteen cases, the superior mesenteric vessels were involved; in one instance the inferior. The mesenteric arteries were involved in four cases, the veins in eight. In two cases it was impossible to tell which of the two caused the infarction. These findings are at variance with those of most observers, the majority of whom found the veins involved much less frequently than the arteries. When the mesenteric veins are occluded, it is always due to thrombosis. Either embolism or thrombosis may cause occlusion of the mesenteric arteries. In ten of the cases, the following etiologic factors were found (in four cases no cause for the occurrence of the thrombosis could be found): endocarditis with aortic insufficiency and stenosis clinically, marked arteriosclerosis, and cirrhosis of the liver, two cases each; Raynaud's disease, carcinoma of the pancreas with metastases to the liver and neighboring glands, polycythemia, and partially strangulated inguinal hernia with abscess formation, one case each. In all of the cases there had been a history of abdominal pain and vomiting, and on examination abdominal tenderness and muscle spasm were demonstrated. The majority of the patients, even from the first, were greatly prostrated and looked ill. The picture is indistinguishable from that of acute intestinal obstruction due to causes other than mesenteric thrombosis. Brady says that there is just one method of treatment—immediate laparotomy.

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Present and Future in Thoracic Surgery. S. Robinson, Santa Barbara, Calif.—p. 247.

\*Surgical Treatment of Esophagus. H. Fischer, New York.—p. 256.

\*Posterior Mediastinotomy. H. Lilienthal, New York.—p. 274.

Teratoma of Right Chest Cavity. Report of Case. W. Whittemore, Boston.—p. 282.

Radium Needle for Esophagoscope. S. Hankauer, New York.—p. 288.

\*Differential Diagnosis Between Tuberculosis and Lung Abscess. L. T. LeWald and N. W. Green, New York.—p. 303.

\*Lung Abscess. A. L. Lockwood, Toronto.—p. 314.

\*Surgical Treatment of Bronchiectasis; Report of Three Cases of Removal of Lobe of Lung. E. A. Graham, St. Louis.—p. 321.

\*Lung Abscess. G. J. Heuer, Cincinnati, and P. M. MacCready, Baltimore.—p. 337.

Interrelationship and End-Results of Chronic Suppurative Diseases of Lungs. W. S. Lemon, Rochester, Minn.—p. 343.

Fibrosis of Lung Following Ligation of Pulmonary Artery, Combined with Phrenicotomy and Following Partial Occlusion of Pulmonary Veins. K. Schlaepfer, Baltimore.—p. 358.

\*Lung Suppuration and Its Treatment. W. Meyer, New York.—p. 361.

**Surgical Treatment of Esophagus.**—While the results of today in this field are not such that one should be boastful about them, Fischer believes that a more hopeful attitude is justified. So far, only in cases of carcinoma of the cardiac



portion of the esophagus has the patient recuperated from the operation and lived.

**Posterior Mediastinotomy.**—The principle on which the approach made by Lilienthal depends is that of the retraction of the divided ribs at right angles to their long direction, shingling them, one on the other, thus making the deep exposure from below upward, the extent of available space being determined by the length of the wound, especially that portion which divides the intercostal extrapleural structures. Lilienthal asserts that by the methods he has worked out, the exposure is so complete that not only the posterior but also the middle and superior divisions of the mediastinum can be reached with facility and with comparative safety.

**Lung Abscess.**—Twelve cases form the basis of the report made by LeWald and Green. Eight patients were operated on and the diagnosis established; all of these recovered. Four were not operated on for lung abscess, and, of these, three recovered and one died. The disease in these cases had been either postpneumonic or postoperative. Two cases followed tonsillectomy. One case followed operation on the gall-bladder. In none of this series was a foreign body demonstrated as the cause. The outstanding symptom was a persistent cough with profuse sputum with a fetid odor, accompanied by a loss of weight.

**Lung Abscess.**—Contrary to the opinion of early writers that abscess of the lung is a common sequel to lobar pneumonia, a survey made by Lockwood of cases reported during the last century indicates that it is a rare sequel. Lockwood is convinced that surgery should not be employed so soon as the diagnosis has been made, except as indicated. Instead, thorough medical treatment, with postural rest and drainage, should be instituted. When this fails, pneumothorax should be produced in selected cases, and surgery reserved for those patients who do not respond to the other two methods.

**Lobectomy for Bronchiectasis.**—Lobectomy was successfully performed by Graham in three cases of bronchiectasis. He thinks that in advanced cases it is the only method which seems to offer a chance of complete relief from all symptoms.

**Chronic Lung Abscess.**—A study made by Heuer and MacCready of the late results in sixty-two cases of lung abscess demonstrates that it is the old, long standing chronic lung abscess, with thick fibrous walls, which is often not entirely cured by drainage operations. The patients in their series who are well are those who had acute or recent lung abscess. The patients who are not entirely well all had chronic abscesses of from two to seven years' standing which at operation presented thick fibrous walls.

**Lung Suppuration and Its Treatment.**—Meyer presents a review of personal experiences and clinical impressions obtained within the last twelve years in the treatment of forty-nine cases.

### Johns Hopkins Hospital Bulletin, Baltimore

January, 1923, 34, No. 383

\*Mechanism of Eliminating Phenolsulphonephthalein by Kidney. Proof of Secretion by Convoluted Tubules. E. K. Marshall, Jr., and J. L. Vickers, Baltimore.—p. 1.

\*Lipoids of Maternal and Fetal Blood at Conclusion of Labor. J. M. Slemmons and H. J. Stander, New Haven, Conn.—p. 7.

\*Bactericidal Action of Ultraviolet Light. S. Bayne-Jones and J. S. Van der Lingen, Baltimore.—p. 11.

Wassermann Reaction in Johns Hopkins Hospital. A. Keidel and J. E. Moore, Baltimore.—p. 16.

\*Studies on Sugar Tolerance. R. H. Major, Kansas City, Kan.—p. 21.

\*Cause of Certain Acute Symptoms Following Gastro-Enterostomy. R. L. Haden and T. G. Orr, Kansas City, Kan.—p. 26.

Selective Culture Medium for Diphtheria Bacillus. E. A. Greenspon, Baltimore.—p. 30.

**Elimination of Phenolsulphonephthalein by Kidney.**—The results of the experiments made by Marshall and Vickers indicate definitely that the passage of a colloid free filtrate of plasma through the glomerular capsule is insufficient to account for the amount of phenolsulphonephthalein found in the urine on the basis of the amount of free (filterable) phthalein in the blood. It is obvious that the assumption that all of the plasma could be filtered is incorrect; the increasing concentration and, hence, osmotic pressure of the proteins would soon bring filtration to an end. Sufficient

allowance has, therefore, been made for the two factors in the calculation which are not accurately known—the volume flow of blood through the kidney and the amount of urine present in the tubules and pelvis of the organ. The authors assert that if their figures for these values are correct, or should the kidney not remove completely the phthalein entering it in the arterial blood, it is also obvious that there is not sufficient total phthalein in the blood at the time of the experiment to account for that which has been eliminated in the urine. The only conclusion which can be drawn is that the substance has been stored in the renal cells at the time of injection and is slowly given out in the urine.

**Lipoids of Maternal and Fetal Blood at Conclusion of Labor.**—Slemmons and Stander found that during the latter part of pregnancy, the fat, lecithin and cholesterol of the blood are more abundant than usual. This change, most likely, represents a preliminary step in the preparation for lactation. The mother's blood contains much more of these substances than the fetal blood does. The difference which exists between the two organisms in this respect varies from case to case; and the values prevailing in one seem to be entirely independent of those in the other. The results of blood analyses in human subjects, like the biologic evidence obtained from vital staining experiments in rodents and carnivora, teach that the placenta is impenetrable to fat and lipoids. Fetal fat, then, must be synthesized; probably from glucose, which is freely supplied by the mother in accord with the demands of her offspring. No characteristic change in the blood fat or blood lipoids accompanies the development of eclampsia and allied intoxications of pregnancy.

**Bactericidal Action of Ultraviolet Light.**—Jones and van der Lingen describe methods by which exact determinations may be made of the wave lengths of light which kill bacteria. The sparks of various metals were used as sources of ultraviolet light, except in a few experiments when it was necessary to take advantage of sunlight because of its greater intensity. In most of the work, a quartz spectrograph was used. The bactericidal action of light is confined to the ultraviolet region of the spectrum, beginning at 350 microns and extending with increasing intensity to the shortest wave lengths measurable with a quartz spectrograph: 185.6 microns. These limits coincide with the absorption of ultraviolet light by bacteria. The temperature coefficient for the bactericidal action of light was found to be 1.05 over a range of 10 C. An increase in hydrogen-ion concentration of the fluid in which bacteria are suspended during their exposure to ultraviolet light increased the velocity of the bactericidal action. Neither temperature nor the hydrogen-ion concentration rendered bacteria sensitive to the longer wave lengths of light.

**Results of Glucose Tolerance Tests.**—The results of glucose tolerance tests on sixty patients are reported by Major. The diabetic type of sugar curve with glycosuria is constant in diabetes mellitus. The level of the sugar threshold varied greatly, showing a tendency to be higher in older persons. All the cases of acute nephritis studied showed a diabetic type of blood sugar curve usually without glycosuria. No constant type of curve was obtained in thyroid or pituitary disease. Abnormal curves are frequent and indicate a disturbance of carbohydrate metabolism. Increased tolerance to carbohydrates was found in pituitary disease, often with a high sugar threshold. Some of the glycosurias encountered in hyperthyroidism are due to a lowered renal threshold. These observations indicate that, as a rule, the urine does not show sugar in appreciable amounts until a definite blood sugar level is reached. This level or "renal threshold" varies somewhat in health, but markedly so in disease. Repeated tests on the same individuals show marked variations in this "renal threshold." Four persons classed as "renal diabetics" showed glycosuria with a blood sugar at normal or subnormal levels.

**Cause of Certain Acute Symptoms Following Gastro-Enterostomy.**—Three cases are reported by Haden and Orr showing a high level of nonprotein nitrogen of the blood, low blood chlorids and suppression of chlorid excretion following gastro-enterostomy. One patient had a marked



alkalosis; two patients had a carbon dioxid combining power at the upper limit of normal when first determined. Two patients also had a very high nitrogen excretion in the urine. All three patients presented clinical symptoms of a severe intoxication. The clinical picture and laboratory findings are believed to be due to an intoxication arising in the upper intestinal tract. The fundamental cause in these cases is probably a duodenal obstruction at the site of the gastroenterostomy which interferes with drainage of the duodenal loop.

### Journal of Bone and Joint Surgery, Boston

January, 1923, 5, No. 1

- Osteochondritis Dissecans. Report of Cases. A. H. Freiberg, Cincinnati.—p. 3.  
 Combined Cistern and Lumbar Puncture; An Aid in Diagnosis of Compression of Spinal Cord. J. B. Ayer, Boston.—p. 18.  
 Fracture of Spine with Cord Involvement. W. J. Mixter, Boston.—p. 21.  
 \*Crush Fractures of Spine. J. W. Wallace, Pittsburgh.—p. 28.  
 \*End-Result in Four Cases of Severe Destructive Injury to Hip. T. S. Mebane, M. C., U. S. Army.—p. 70.  
 Treatment of Congenital Dislocation of Hip. E. H. Bradford, Boston.—p. 76.  
 \*Use of Index Finger for Thumb: Some Interesting Points in Hand Surgery. J. Dunlop, Los Angeles.—p. 99.  
 Structural Scoliosis Complicated by Paralysis of Lower Limbs; Report of Case. S. Kleinberg, New York.—p. 104.  
 \*Synovectomy in Chronic Infectious Arthritis. P. P. Swett, Hartford, Conn.—p. 110.  
 Congenital Elephantiasis of Toes. H. S. Thatcher and T. Wheeldon, Richmond, Va.—p. 122.  
 Conservation of Muscles in Paralytic Deformities of Foot. P. W. Roberts, New York.—p. 123.

**Crush Fractures of the Spine.**—Eighty-two cases of fracture of the spinal column are analyzed by Wallace. A great majority of these cases had been unrecognized and consequently untreated. In six cases the method of injury was not given. In nine cases the history of the injury gave no definite forcible flexion of the spine and the mechanism of the fracture could not be determined. In sixty-seven cases a definite history of forcible flexion of the spine was given. In every case in which the history showed that the patient was caught in a flexed position and had his spine flexed so that the head was forced between the legs, a fracture of one of the lower vertebrae was found. In twenty-three cases there were fractures elsewhere in the body. Fracture of the transverse processes was the most common injury. This occurred on either one or both sides and of the vertebra crushed; sometimes the vertebra above and below. Fracture of the spinous processes was rather rare, having occurred in only three cases. Fracture of the articular processes occurred in one case. The data on the complaints of the patients are not complete, but it appears that in half the cases the patients not only had pain in the back, but also had pain referred to other parts, generally the legs, also to the hips, chest, abdomen, head, etc. A few patients had no pain in the back, but had referred pain. A few had no pain whatever.

**Severe Destructive Injury to Hip.**—The four cases cited by Mebane are instructive in that they demonstrate that considerable loss of substance of the upper end of the femur can be followed by a fairly satisfactory functional result. They also demonstrate that this result can occur in spite of prolonged infection. These results show that extensive resections of the upper end of the femur, in adults, for severely infected fractures, are justified. They would suggest, also, that it might be justified in severe tuberculous or septic disease, in which the mortality is high, recovery slow, and tendency to permanent organic damage by amyloid degeneration is great.

**Use of Index Finger for Thumb.**—Dunlop's patient had lost the thumb of his right hand; in addition he had a number of fractures in the carpal area; the wrist was stiff or nearly so in the straight position, and the index finger, due to the destruction of the base of the metacarpal, was somewhat shorter than normal, whereby the metacarpophalangeal joint was retracted. The extensor muscle of the index finger was not functioning, and the finger was slightly flexed and abducted under the middle finger. The position of the index finger had a great deal to do with the lack of functioning of the middle, ring and little fingers at the metacarpophalan-

geal joint. With the hand in this condition the patient had used it but little and there was practically no motion, except a slight amount in the two interphalangeal joints. The problem, then, as it appeared to Dunlop, was to get the index finger out of the way of the other fingers and use it in place of the thumb. This was done by rotating the metacarpal and the remaining portion of the finger after an osteotomy at the point of fracture and placing the finger in the position of the thumb when taking hold of objects. The operation was successful. The finger made a good thumb.

**Synovectomy in Chronic Infectious Arthritis.**—Fifteen synovectomies have been performed by Swett on eight patients suffering with chronic infectious arthritis. The operation consisted in opening the joint, generally at the site of the greatest thickening and effusion, and then with scissors and forceps dissecting out all of the diseased inner layers of the synovial membrane down to what appeared to be healthy tissue. The joints have all been closed without drainage, and with no fixation. The cases, with one exception, were all of long standing showing marked joint effusion, capsular thickening, and fusiform swellings. Mechanical improvement in the operated joints was promptly manifested by a restoration of painless function in every case, but in two cases a relapse occurred very shortly, and in one of these two cases, reoperations were performed with ultimate, complete recovery. So it may be said that only one case was a failure, and that twelve cases were successful from the point of view of joint mechanics.

### Journal of Experimental Medicine, Baltimore

January, 1923, 37, No. 1

- \*Reverse Selective Bacteriostatic Action of Acid Fuchsin. J. W. Churchman, New York.—p. 1.  
 \*Method for Permanent Sterile Drainage of Intra-Abdominal Ducts, as Applied to Common Bile Duct. P. Rous and P. D. McMaster, New York.—p. 11.  
 Intestinal Flora in Mouse Typhoid Infection. L. T. Webster, New York.—p. 21.  
 Ox Bile Sensitization in Mouse Typhoid Infection. L. T. Webster, New York.—p. 33.  
 \*New Method for Mammalian Decerebration. C. F. Schmidt, Philadelphia.—p. 43.  
 \*Action of Drugs on Respiration. I. Morphin Series. C. F. Schmidt and W. B. Harer, Philadelphia.—p. 47.  
 \*II. Ether, Chloroform, Chloral, Urethane, Luminal, Magnesium, Caffeine, Strychnin and Atropin. C. F. Schmidt and W. B. Harer, Philadelphia.—p. 69.  
 \*Functional and Anatomic Study of Excretion of Hemoglobin by Kidney. Y. Fukada and J. Oliver, San Francisco.—p. 83.  
 \*Mechanism of Vomiting Induced by Antimony and Potassium Tartrate (Tartar Emetic). S. Weiss and R. A. Hatcher, New York.—p. 97.  
 Blood Destruction During Exercise. II. Demonstration of Blood Destruction in Animals Exercised After Prolonged Confinement. G. O. Broun, New York.—p. 113.

**Selective Bactericidal Power of Acid Fuchsin.**—Churchman asserts that acid fuchsin possesses a bactericidal power which is selective as between a gram-negative and gram-positive spore-bearing aerobic organism. The selective feature is the reverse of that of gentian violet. This reverse selective activity is also possessed by simpler sulphonated substances and would appear to be dependent in some way on the presence of sulphur trioxid radicals. Selective penetration, if at all concerned in the behavior of gentian violet and acid fuchsin toward bacteria, must play a very minor rôle. In the case of gentian violet the power to kill organisms and the power to prevent their growth run parallel, so far as the selective feature is concerned. In the case of acid fuchsin, the bacteriostatic and bactericidal selective features do not run parallel. *Bacillus pyocyaneus*, an organism resistant to gentian violet, is quite susceptible to acid fuchsin.

**Permanent Sterile Drainage of Common Bile Duct.**—The success of the method employed by Rous and McMaster lies in the interpolation, with special care for asepsis, of a long drainage tube between the common duct and the opening in the abdominal wall. The tube must be pliable near the cannula, else the latter may be pushed askew through leverage exerted by the viscera, with obstruction as a result; and it must be resistant where it passes the abdominal wall to sustain muscular contraction. To gain these ends, a curved glass tube is employed with, on one limb, the soft black rubber tubing that connects with the cannula, and, on the



other, a piece of red duodenal tubing that is to pass through the abdominal wall. The entire U of rubber and glass should be as long as the size of the abdominal cavity will readily permit.

**New Method for Mammalian Decerebration.**—In the method described by Schmidt the brain stem is nearly encircled by a ligature passed about it through suitable openings made in the skull. Its free ends emerge through the roof of the mouth. When the ligature is drawn down tightly against the floor of the skull, the brain stem is severed and the vessels at the base of the brain are compressed.

**Action of Morphin Series on Respiration.**—A method is described by Schmidt and Harer for recording intrathoracic pressure in cats without opening the pleural cavity; active expiratory movements were elicited by inhalation of a constant carbon dioxid air mixture for a given time and a study was made of the action of drugs on inspiration and expiration. Morphin and heroin were found to exert a selective depressant action on the central expiratory mechanism, and the slower rate, with relatively unaltered depth, seemed to be due, at least partly, to the slower rate of emptying the lungs. Codein had no depressant action on the respiration of decerebrated cats. Larger doses of morphin or heroin had no further depressant effect on rate or depth of breathing after expiration was made passive, unless circulatory depression appeared, and failure of circulation seemed to be the cause of respiratory depression, rather than the reverse relation. In decerebrated animals large doses of morphin and moderate doses of codein stimulated the spinal cord, and expiration became active, with a faster rate of breathing. The characteristic action of morphin and heroin on the respiration of the cat is apparently limited to a depression of active expiration.

**Action of Ether, Chloroform, Etc., on Respiration.**—The depressant drugs studied by Schmidt and Harer in this series of experiments were found to resemble morphin and heroin in that they depressed expiration more than inspiration, but they acted only in narcotic doses and always depressed inspiration at the same time. Ether caused a sharp expiratory rhythm, persisting until narcosis was very deep, probably a result of irritation of their air passages. Chloroform sometimes caused dyspnea, even in very deep narcosis, probably because of circulatory depression. Chloral hydrate made respiration more rapid, but shallower. Urethane usually made expiration active, often with inspiratory pauses, such as may follow vagotomy. Magnesium seemed to produce the most uniform, uncomplicated depression of all the depressants tried. Phenobarbital (luminal) resembled morphin and heroin more closely than any of the general depressants, making expiration passive without depressing inspiration, but it acted only in narcotic doses, unlike morphin and heroin. Caffein and strychnin, whenever they caused acceleration after morphin, brought back active expiration. Atropin never stimulated, and commonly acted as a synergist to morphin. It is suggested that there is a separate central mechanism for the control of each of the phases of respiration, and that, while each responds to the same chemical stimuli, the threshold is higher for expiration than for inspiration. Evidence is presented to indicate that if expiration remains passive, a marked increase in depth of breathing may slow the rate, and a respiratory mechanism that lacks active expiration may be so inefficient that a carbon dioxid concentration which stimulated when expiration was active may depress when it is passive.

**Excretion of Hemoglobin by Kidney.**—Fukuda and Oliver are of the opinion that the anatomic and functional findings in hemoglobin excretion are best explained by the assumption of a filtration of this substance through the glomerulus and an additional excretion of it by the tubule cells. Absorption of water aids in the concentrating process, and is most marked in the collecting tubules.

**Mechanism of Vomiting Induced by Tartar Emetic.**—The findings obtained by Weiss and Hatcher in their experimental study point to the heart as the seat of reflex vomiting following the intravenous injection of tartar emetic. The intravenous

injection of tartar emetic induces afferent emetic impulses which pass from the heart to the vomiting center mainly by way of the vagus, to a much less extent by way of the sympathetic nerve and the stellate ganglia. The introduction of tartar emetic into the stomach induces afferent emetic impulses which pass upward mainly by way of the vagus, to a much less extent by way of the sympathetic nerve. The introduction of tartar emetic into the duodenum induces afferent emetic impulses which pass upward partly by way of the sympathetic nerve, partly by way of the vagus. It seems probable that the path taken by afferent emetic impulses induced in the gastro-intestinal tract by tartar emetic depends on the innervation of the organ concerned, and not on only selective action of the poison on the afferent nerve.

## Journal of Industrial Hygiene, Boston

January, 1923, 4, No. 9

- Consequences of Myopia as Industrial Disease of Eyes. N. B. Harman, London, England.—p. 371.
- Comparative Efficiency of Circular Konimeter and Palmer Water Spray Apparatus for Determination of Dust Content of Air. C. E. A. Winslow and R. Jordan, New Haven, Conn.—p. 375.
- Rôle of Syphilis in Industrial Disablement: Analysis of Two Hundred and Ninety-One Physical Surveys. P. Edmunds, Baltimore.—p. 380.
- Pharmacology of Phenylenediamines. P. J. Hanzlik, San Francisco.—p. 386.
- Effects of Exposure to Arsenic Trichlorid on Health. S. Delepine.—p. 410.

## Laryngoscope, St. Louis

January, 1923, 33, No. 1

- Improvised Artificial Drum as Aid to Hearing. Study of Certain Principles Involved. P. D. Kerrison, New York.—p. 1.
- Case of Tuborrhea of Right Ear, Impaired Hearing of Left Ear and Polyarthrititis Due to Purulent Sinusitis. G. Wolf, New York.—p. 10.
- Indications and Contraindications for Submucous Resection of Nasal Septum. J. N. Hoffmann, Canton, Ohio.—p. 13.
- Complete Traumatic Destruction of Vestibular Function with Unusually Slight Coincident Cochlear Involvement. S. O. Fields, Norfolk, Va.—p. 16.
- Correction of External Deformities of Nose by Intranasal Route. H. B. Blackwell, New York.—p. 21.
- Generalized Clonic Spasms, Hemiparesis and Coma Result of Lateral Sinus Thrombosis. S. Salinger, Chicago.—p. 27.
- Asthma, Hay-Fever, Nasal Hydrorrhea and Angioneurotic Edema. C. B. Williams, Mineral Wells, Texas.—p. 31.
- Cysts of Bursa Pharyngea; Report of Two Cases. F. A. Figi, Rochester, Minn.—p. 37.
- Management of Certain Nose and Throat Disorders in Singers and Speakers. I. W. Voorhees, New York.—p. 42.
- Migrating Foreign Body (Pin) in Bronchus. G. W. Fletcher, Winnipeg.—p. 53.

## Philippine Islands Medical Association Journal, Manila

November-December, 1922, 2, No. 6

- Rupture of Uterus; Nine Case Reports. H. Acosta-Sison, Manila.—p. 269.
- Parkinsonian Syndrome in Lethargic Encephalitis. Six Cases. E. Domingo and W. Vitug, Manila.—p. 281.
- Case of Multiple Neurofibromatosis (Von Recklinghausen's Disease). J. Rodriguez, Culion, Palawan.—p. 289.
- \*Case of Nodular Disseminated Nonulcerative Syphilids. P. Gutierrez, Manila.—p. 293.

**Nodular Disseminated Nonulcerative Syphilids.**—The principal points of interest in Rodriguez' case are (1) the absence of the characteristic pigmentation from the onset of the disease to the present; (2) the inconspicuous character of the nodules, some of which were as large as a small orange but were hardly visible on inspection, in marked contrast to the prominent sessile or pedunculated and often pendulous growths commonly seen in this disease, and (3) there were no marked mental symptoms. The patient was only 17 years of age. His blood Wassermann was negative.

## South Carolina Medical Association Journal, Greenville

January, 1923, 19, No. 1

- Tuberculosis of Kidney. M. Weinberg, Sumter.—p. 366.
- Genito-Urinary Routine Suggested as Practical for General Practitioner. M. H. Wyman, Columbia.—p. 372.
- Humans, with Especial Reference to Asthma and Hay-Fever. H. M. Davidson, Atlanta, Ga.—p. 377.
- Paranasal Sinuses of Children with Special References to Ocular Symptoms. E. W. Carpenter, Greenville.—p. 381.



**Tennessee State Medical Association Journal,  
Nashville**

January, 1923, 15, No. 9

- Angina Pectoris. J. O. Manier, Nashville.—p. 389.  
 Early Diagnosis of Syphilis. M. Haase and C. H. Marshall, Memphis.—p. 392.  
 Results Following Belfield's Operation in 101 Cases of Seminal Vesiculitis. J. E. Hall and J. H. Litterer, Nashville.—p. 395.  
 Duty and Responsibility in Face of Abortion Evil. J. C. Ayers, Memphis.—p. 400.  
 Management of Perineum Following Labor. L. E. Burch, Nashville.—p. 405.  
 Things Every Physician Should Know About Etiology and Prevention of Mastoiditis. A. C. Lewis, Memphis.—p. 407.  
 Various Phases of Endocrine Conditions. Y. W. Haley, Nashville.—p. 409.  
 Plea for Early Treatment of Squint. M. B. Seligstein, Memphis.—p. 412.  
 Importance of Early Correction of Cross Eye Deformity. B. P'Pool, Nashville.—p. 414.

**Texas State Journal of Medicine, Fort Worth**

January, 1923, 28, No. 9

- Activities of the State Health Department. J. H. Florence, Austin.—p. 442.  
 Why We Should Have Whole Time County Health Officers. A. P. Harrison, Austin.—p. 445.  
 City Health Department. W. T. Davidson, Dallas.—p. 450.  
 Municipal Health Officer and Industry. A. H. Flickwir, Houston.—p. 454.  
 Physician and Public's Health. M. F. Bledsoe, Port Arthur.—p. 456.  
 Plague Suppressive Measures. H. G. White, Beaumont.—p. 458.  
 Work of Biologic Survey as It Affects Disease Carriers. W. B. Bell, Washington, D. C.—p. 461.  
 Proper Field of Public Health Nurse. E. L. Hamner, Fort Worth.—p. 466.

**Wisconsin Medical Journal, Milwaukee**

January, 1923, 21, No. 8

- Renal Calculi. D. N. Eisendrath, Chicago.—p. 349.  
 Diabetes Mellitus. Diagnosis and Treatment. B. H. Schlomovitz, L. F. Jermain and B. L. Schuster, Milwaukee.—p. 355.  
 Modification of John Young Brown Operation for Treatment of Chronic Ulcerative Colitis; Report of Case. E. H. Mensing and W. Thalheimer, Milwaukee.—p. 362.

**FOREIGN**

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

**British Journal of Tuberculosis, London**

January, 1923, 17, No. 1

- Some Reasons for Failure in Solving Problems Connected with Tuberculosis. J. MacKenzie.—p. 12.  
 Shall We Slaughter Milk Cows Which React to Tuberculin? A. Calmette.—p. 15.  
 Notification of Tuberculosis. R. Dudfield.—p. 20.  
 Education of Tuberculous Patient. H. O. Blanford.—p. 24.  
 \*Sanatorium Treatment of Tuberculosis Contrasted with Home Treatment. G. L. Cox.—p. 27.

**Sanatorium Treatment of Tuberculosis Contrasted with Home Treatment.**—As the result of the analysis of 4,067 histories of adults who commenced treatment during the five years from 1914 to 1918, so far as comparison is possible, Cox is convinced that patients in the early and intermediate stages of pulmonary tuberculosis who have undergone a course of sanatorium treatment, even for three or four months, fare appreciably better in health in later years than do those who did not receive such form of treatment. Of 1,047 patients in the early and intermediate stages with negative or absent sputum commencing treatment during the five year period, 14.0 per cent. of the sanatorium patients had died at the end of 1921, and 37.7 per cent. of the nonsanatorium patients had died at the end of 1921; and of the 1,263 patients with positive sputum, 61.2 per cent. of the sanatorium patients had died at the end of 1921, and 81.3 per cent. of the nonsanatorium patients had died at the end of 1921. Cox emphasizes that in both sanatorium and nonsanatorium cases early diagnosis is a very important factor in the successful treatment of pulmonary tuberculosis. In both sanatorium and nonsanatorium cases, patients with a negative or absent sputum throughout treatment are much more likely to remain fit for work, and less liable to succumb to the disease than

those with tubercle bacilli in the sputum. In the sanatorium cases the mortality from pulmonary tuberculosis is greater among patients with a positive sputum, aged between 15 and 25 years, than in the other age groups.

**Calcutta Medical Journal**

November, 1922, 27, No. 5

- Studies on Quinin. M. M. Dutt.—p. 201.  
 Digitalis. J. C. Aich.—p. 232.  
 Ophthalmic "Don'ts" for General Practitioners. S. K. Ganguly.—p. 237.

**Glasgow Medical Journal**

December, 1922, 98, No. 6

- Study of Diets and Economic Conditions of Laboring Class Families in Glasgow in June, 1922. A. M. T. Tully and E. M. Urie.—p. 353.  
 \*Rare Case of Polydactylism of Foot. G. H. Edington and W. B. Primrose.—p. 369.  
 \*Review of Service Patients in Mental Hospital. D. K. Henderson and R. D. Gillespie.—p. 375.  
 \*Outbreak of Food Poisoning by Milk Caused by Bacillus Aertrycke. W. R. Wiseman.—p. 390.

January, 1923, 17, No. 1

- Dr. John Borland, First Surgeon to Kilmarnock Infirmary: His Life and Work. J. C. McVail.—p. 1.  
 Cases of Perforation of Bowel and Rupture of Heart. D. Fraser.—p. 19.  
 Treatment of Early Opacities in Senile Lens, with Demonstration of Six Cases. W. B. I. Pollock.—p. 32.

**Rare Polydactylism of Foot.**—The abnormality in the case described by Edington and Primrose consisted of three supernumerary toes occupying the cleft between the hallux and the normal second toe of the left foot. The supernumerary digits were not all in the same plane, one being dorsal, and two being displaced toward the plantar surface of the foot. These last were webbed in half their length, and were capable of active movements; the dorsal digit was not actively mobile, and its nail showed distinct indication of longitudinal division into two. The hallux was not quite so broad as in the normal foot. A roentgenogram showed three supernumerary metatarsal bones, of which two belonged to the plantar toes, and the third, which was imperfect, to the dorsal toe.

**Review of "Service" Patients in Mental Hospital.**—Henderson and Gillespie analyze 113 "service" cases of the more chronic type. The existing literature is summarized, and various points noted. The confusion and indefiniteness in diagnostic terminology in these papers is deprecated; and a plea is recorded for a uniform system of diagnostic classification. Most of the papers mentioned emphasize the inefficiency of the recruitment mental examination, and the uselessness and positive danger of passing mental defectives and obviously potential psychopaths into the army. Further, it is shown that the proportions of the various disease types among service patients has altered since the war period, and that dementia praecox cases constitute, with mental defectives, by far the greater proportion of cases still under care. The etiologic factors are divided into those existing before the war and those associated with service. Of the former, insane heredity, psychopathic predisposition, previous mental illness, constitutional inferiority (i. e., mental or moral deficiency), syphilis, and excessive alcoholism, together accounted for 99 per cent. of cases when full data were available. An examination of the symptomatology shows that no new type of mental disturbance has been produced by the war, but that certain psychoses (viz., dementia praecox) which in civil life are usually chronically progressive, appeared in an acute, recoverable form. It is evident that the majority of the cases under consideration would eventually have entered mental hospitals even had it not been for the war strain.

**Food Poisoning Caused by Bacillus Aertrycke.**—Wiseman discusses an outbreak of food poisoning due to the consumption of cow's milk and affecting fifty-two persons of ages ranging from 14 months to 83 years. The actual source of the contamination was not discovered. In this outbreak two distinct types of *B. aertrycke* were found—(a) the "mutton" type, and (b) one closely approximating, and probably identical with the Newport type. The conception of interagglutinability of the members of the *B. paratyphosus* B food poisoning group is shown to be susceptible of modification.



## Japan Medical World, Tokyo

Oct. 15, 1922, 2, No. 10

- \*Immunologic Studies of Intestinal Fluids. R. Umemura and M. Yamanouchi.—p. 281.  
Mode of Influence of Carbohydrates on Organisms. M. Ohtaki, K. Sukegawa and S. Sawaguchi.—p. 288.  
Is Phospholipin a Constituent of Hydrolytic Enzymes? S. Kai.—p. 291.

**Immunologic Studies of Intestinal Fluids.**—The important points revealed by Umemura and Yamanouchi in their study of the intestinal fluid in search of an explanation of immunity phenomena are: The normal intestinal fluid does not destroy immune bodies. The intestinal fluid of an immunized animal contains agglutinin. This agglutinin appears in the fluid from the third to the fifth day and reaches the maximum from the tenth to the fourteenth day and then gradually decreases. The agglutinin in the intestinal fluid is from one fourth to one sixtieth of that in the circulation. The excretion of immune antibodies in the intestinal fluid has no local differences between duodenum and jejunum or ileum. The agglutinin in the intestinal fluid is specific. The agglutinin in the intestinal fluid has no changes with temperature at 56 C.; at 65 C. it is reduced from one fifth to one half and at 70 C. from one thirty second to one eighth and at from 75 to 80 C. it only remains as a trace or disappears entirely. The intestinal fluid contains bacteriolysin and performs bacteriolytic action in the test tube. The bacteriolytic action takes place in the intestinal canal of an actively immunized animal. The bacteriolysin in the intestinal fluid appears from the third to the fourth day after the injection of antigen and it reaches the maximum on about the fourteenth day and then gradually decreases. The appearances of the antibodies in the intestinal fluid introduced by passive immunity is the same as active immunity. The number of bacteria in the intestine is lowest in the duodenum and increase further down.

## Journal of Physiology, London

December, 1922, 57, Nos. 1 and 2

- \*Metabolism of Salivary Glands. III. Blood Sugar Metabolism of Submaxillary Gland. G. V. Anrep and R. K. Cannan.—p. 1.  
\*Id. IV. Metabolism of Reducing Substance of Submaxillary Gland. G. V. Anrep.—p. 7.  
Studies in Respiration and Circulation in Cat II. Oxygen in Venous Blood. K. Uyeno and Y. Doi.—p. 14.  
\*Circulation After Cessation of Work; Calculation of Circulation Rate Experiments According to Nitrous Oxid Method. J. Lindhard.—p. 17.  
Seasonal Variation in Reticulated Corpuscles of Amphibian Blood. J. M. D. Scott.—p. 31.  
Study of Chlorin Interchange Between Corpuscles and Plasma. L. Dautrebande and H. W. Davies.—p. 36.  
Calibration of Reversion Spectroscope for Estimation of Carbon Monoxid in Blood. H. Hartridge.—p. 47.  
Visual Acuity and Resolving Power of Eye. H. Hartridge.—p. 52.  
Relation Between External Work Produced and Time Occupied in Single Muscular Contraction in Man. H. Lupton.—p. 68.  
Measurement of Tension of Oxygen and Carbon Dioxid in Blood of Pulmonary Artery in Man. A. C. Redfield, A. V. Bock and J. C. Meakins.—p. 76.  
Concentration of Blood and Effects of Histamin in Suprarenal Insufficiency. C. H. Kellaway and S. J. Cowell.—p. 82.  
\*Nature of Sugar in Blood. L. B. Winter and W. Smith.—p. 100.

**Blood Sugar Metabolism of Salivary Glands.**—Anrep and Cannan assert that changes in the blood flow through the submaxillary gland do not affect the consumption of sugar from the blood. Stimulation of the chorda tympani increases the blood sugar consumption. The increase is of the same order as that of the gland secreting under pilocarpin and is broadly proportional to the activity as measured by the rate of secretion. The maximal consumption of sugar corresponds with the maximal secretion and does not occur, as does the oxygen consumption, in the postactive period. Atropin, in doses sufficient to paralyze the secretion, only reduces the effect of the chorda tympani on the sugar consumption. Large doses abolish the effect altogether.

**Metabolism of Reducing Substance of Submaxillary.**—The resting submaxillary gland yields on acid hydrolysis about 2.3 per cent. of reducing substance calculated as glucose. The ratio reducing substance: total nitrogen in a resting submaxillary gland is about 0.8 per cent. The glands on both sides yield after acid hydrolysis the same absolute amount of reducing substance. The saliva secreted under chorda

stimulation becomes gradually poorer in reducing substance. The D/N ratio of the saliva also drops with the extent of secretion. The ratio reducing substance: protein nitrogen is more constant. The variations in the latter indicate the presence in saliva of variable amounts of protein which does not give rise to reducing substance. The submaxillary gland loses the same amount of reducing substance as is secreted in the saliva. There is no evidence of a process of reconstruction of mucin during the secretion under chorda stimulation, as judged by the reduction after acid hydrolysis.

**Circulation After Work.**—The results of experiments dealing with the oxygen consumption per minute, the oxygen absorption per liter of blood and the pulse rate within the first twenty minutes after cessation of muscular work in two male subjects are given by Lindhard. The minute volume of the heart as calculated from the experimental data shows that the circulation rate decreases rapidly during the first two minutes and then more slowly following a rather complicated curve.

**Nature of Sugar in Blood.**—A method is described by Winter and Smith for obtaining the sugar of blood in a concentrated solution free from proteins. By means of this it is shown that the sugar in normal blood of man, and of the ox, sheep, cat and rabbit, is an unstable form of glucose, with an initial low rotatory power. It is suggested that the sugar is gamma ( $\gamma$ ) glucose. Glucose and fructose, taken in large quantities by mouth, cannot be detected as such in the blood, their conversion into normal blood sugar being very rapid. Nervous influences alter the nature and quantity of the blood sugar. The blood sugar of persons suffering from severe diabetes mellitus is of an abnormal nature. It appears to be the  $\alpha$ ,  $\beta$  form of glucose. An enzyme is postulated whereby the  $\alpha$ ,  $\beta$  equilibrium form of glucose is converted into  $\gamma$  glucose. This enzyme is absent from the blood. The absence or inactivation of this enzyme is suggested as the cause of diabetes.

## Lancet, London

Jan. 13, 1923, 1, No. 5185

- \*Pyloric Stenosis of Infants. L. G. Parsons and S. G. Barling.—p. 59.  
\*Addison's (Pernicious) Anemia. H. Gilford.—p. 64.  
\*Secondary Infections Complicating Pulmonary Tuberculosis Among Sanatorium Patients. R. C. Wingfield.—p. 66.  
Sulpharsenol in Treatment of Syphilis and Some Complications of Gonorrhea. F. C. Doble.—p. 70.  
\*Nondiarrheic Type of Celiac Disease: Form of Chronic Fat Indigestion in Children. R. Miller and H. Perkins.—p. 72.  
\*Injection of Alcohol in Treatment of Prolapse of Rectum in Infancy and Childhood. L. Findlay and F. B. D. Galbraith.—p. 76.  
Skin Eruption Due to a Mold (*Cercospora Vexans*). C. Russ.—p. 77.  
Treatment of Whooping Cough by Lactic Acid Bacillus Preparation. F. Parry.—p. 78.  
Chronic Disease of Antrum. T. B. Jobson.—p. 78.  
Hemilaryngectomy for Carcinoma. F. Muecke.—p. 78.

**Results of Medical and Surgical Treatment of Pyloric Stenosis.**—The paper is based on an analysis of ninety-four cases, of which thirty-six were treated by medical means, eight by gastro-enterostomy after failure of medical measures, and fifty by Rammstedt's operation. The results of medical treatment alone were very unsatisfactory. Relief of the obstruction by Rammstedt's operation, preceded and followed by a careful medical regimen, offered the best means of reducing the high mortality of the disease. Rammstedt's operation, in the opinion of Parsons and Barling, allows the redundant mucous membrane to bulge and for a time abolishes the sphincteric activity of the pylorus. Given early diagnosis and this treatment, the authors believe the mortality can be reduced to 20 per cent. Functional test meal examination of the stomach shows high rennin, high free acidity, and high total acidity in the resting juice, delayed emptying, and absence of duodenal regurgitation. Chemical analysis of the stools negatives the suggestion that these patients are suffering from pancreatic insufficiency. This and other evidence the authors assert is opposed to the hyperadrenalism theory of the cause of hypertrophy put forward by Gray, Pirie and Reynolds.

**Addison's Pernicious Anemia.**—The place which Addison's anemia should hold among diseases, Gilford says, is with



the errors of development. Too early senescence of the red blood organs results in pernicious or Addison's anemia.

**Secondary Infections of Pulmonary Tuberculosis.**—While he does not advocate the administration of autogenous vaccines in every case of pulmonary tuberculosis in which the character and bacteriology of the sputum lead one to suspect a secondary infection, Wingfield tries to show that there are certain types of cases in which, even under sanatorium conditions, secondary infection of clinical importance can be recognized easily and will respond promptly to autogenous vaccine treatment.

**Nondiarrheic Type of Celiac Disease.**—A group of children who failed to thrive owing to their inability to absorb fat properly is reported by Miller and Perkins, and the principles of treatment for the condition are discussed. In spite of the absence of diarrhea (in the popular sense of the word), and in spite of the absence of the typical pale, unformed, and offensive celiac stool, these are, nevertheless, cases of celiac disease in a mild form. It is suggested that the group may be conveniently termed the "nondiarrheic or dry form of celiac disease." A stool may contain a large excess of fat (even over 50 per cent.) and yet be formed and colored if the fat in it is chiefly in the form of soaps; whereas, when chiefly in the form of fatty acids, the excess of fat causes the stool to be pale, unformed, and offensive. The soapy stool is found in the nondiarrheic group and the fatty-acid stool in the classical diarrheic form of celiac disease. Recognition of the nondiarrheic group suggests that the diarrheic cases may show considerable naked eye improvement in the stools without there being a return to the normal power of fat absorption—in other words, that during the quiescent and convalescent stages in celiac disease the essential failure in fat absorption will still be recognizable by analysis of the stools. Examples are quoted to prove this point. Its recognition also affords strong evidence against the view that celiac disease is due to an enteritis or that it has any essential connection with intestinal disease. A consideration of the two sorts of stool in celiac disease—the pale fatty acid and the colored soapy stools—leads to the view that the pallor of the classical celiac stool is due not to an absence of bile pigment, but rather to a masking of the pigment by the excess of fat present as fatty acid crystals.

**Alcohol Treatment in Prolapse of Rectum.**—With the finger in the rectum, to act as a guide, Findlay and Galbraith inject 1.5 c.c. of absolute alcohol on each side into the perirectal tissue at a depth of from 2 to 2½ inches. An ordinary exploring syringe is employed, the needle being inserted on each side about ¼ inch from the anal margin. The needle punctures are sealed with collodion, a pad is placed in the perineum and kept in position by strapping the buttocks firmly together. Instructions are given that the child must move the bowels only while in the recumbent position, the fecal matter escaping by the side of the dressing. The pad and strapping are reapplied daily for a week. Forty-one children have been so treated by the authors. In two cases the operation had to be repeated once, and in one case twice, but in all the other examples only one treatment was necessary to obtain a cure.

### Medical Journal of Australia, Sydney

Dec. 23, 1922, 2, No. 26

The Practice of Medicine. J. Gordon.—p. 725.

Peptic Ulcer. G. P. Dixon.—p. 726.

Use of Antigonococcal Serum in Treatment of Complications of Gonorrhea.—p. 731.

Case of Pernicious Anemia with Early Spinal Symptoms. C. B. Blackburn. With Pathological Report. O. Latham.—p. 735.

Dec. 30, 1922, 2, No. 27

Suggested Amendments of Public Health Legislation in Queensland. A. G. Butler, E. S. Meyers, J. V. Duhig and S. F. McDonald, Queensland.—p. 757.

Case of Hemorrhage in Newly Born. W. R. Groves.—p. 762.

### Medical Journal of South Africa, Johannesburg

December, 1922, 18, No. 5

Sterility. E. R. Snyman.—p. 113.

Analysis of 4,656 Post-Mortem Examinations Held at Government Mortuary, Johannesburg. J. J. Levin.—p. 119.

### Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 22, 1922, 46, No. 37

Insufficiency from Fenestrated Pulmonary Valve. E. Barie.—p. 1735.

\*Auto-Injections in Post-Encephalitis Syndromes. A. Souques.—p. 1736.

\*Paroxysmal Hemoglobinuria from Chilling. Roch and A. Liengme.—p. 1737.

\*Cerebrospinal Meningitis in Infants. Chevreil.—p. 1742.

\*Artificial Pneumothorax with Adhesions. Ameuille and Jullien.—p. 1747.

\*Hirsutism in a Boy. E. Apert et al.—p. 1750.

Non-Familial Myoclonic Epilepsy. J. A. Sicard and J. Lermoyez.—p. 1753.

\*Tyrosin Test for Tuberculosis. A. Pissavy and R. Monceaux.—p. 1756.

Bismuth Medication in Specific Aortitis. Laubry and Bordet.—p. 1760.

\*Contamination of Offspring by Hereditary Syphilitic. M. Pinard.—p. 1769.

**Intravenous Injections of Cerebrospinal Fluid in Parkinsonian Postencephalitic Syndromes.**—Souques had no results with the treatment of parkinsonian postencephalitic syndromes with intravenous autoinjections of cerebrospinal fluid as recommended by Piticariu. Sicard added similar negative experiences in the debate.

**Paroxysmal Hemoglobinuria Provoked by Cold.**—Roch and Liengme describe a case of paroxysmal hemoglobinuria with attacks provoked by cold and by an intravenous injection of a very small amount of casein (5 cg.). Although the Donath-Landsteiner test was positive, the patient had a negative Wassermann test, and hemoglobin was not found in the serum in any of his attacks. The attacks appeared later than in typical cases, and lasted much longer than usual (ten to fifteen days).

**Cerebrospinal Meningitis Due to Pseudomeningococcus.**—Chevreil observed in infants two cases of cerebrospinal meningitis due to *Diplococcus crassus* and two to *Diplococcus siccus*. These affections are very severe and their diagnosis can be made only by cultivation. Most of these pseudomeningococci are gram-negative and some are agglutinated by the anti-meningococcus B serum.

**Artificial Pneumothorax with Adhesion of the Layers of the Pleura.**—Ameuille and Jullien report the case of a woman in whom all the clinical and roentgenologic symptoms suggested adhesion of the layers of the pleura (fifteen year old pulmonary lesions, condensation of the left lung, and retraction of the base of the thorax). Yet pneumothorax was possible, and materially improved the patient's condition.

**Hirsutism in a Twelve Year Old Boy.**—Apert, Stevenin and Broca publish a case of extreme hirsutism in a boy, aged 12. The intelligence and behavior were those of an adult. His pulse, respiratory rhythm and blood pressure corresponded also to those of an adult. The most interesting finding was in basal metabolism, which was too low for a child of his age and proportions, but perfectly normal for adults. Although he was fat and small, pituitary treatment was without good results and caused a further increase in weight. The examination of his basal metabolism led to the administration of thyroid, which seemed to work better.

**Tyrosin Reaction in Diagnosis of Tuberculosis.**—Pissavy and Monceaux report further good results in fifty-two experiments with the reaction for tyrosin in tuberculous sputum. The reaction was only twice negative in patients with tubercle bacilli in the sputum. On the other hand, one case gave the reaction almost six months before the appearance of bacilli. The reagent which they use deteriorates very easily. They give details of the technic.

**Contamination of Wife and Child by Hereditary Syphilitic.**—Pinard reports a case of probable hereditary syphilis. The wife and child, although without actual symptoms, have also a positive Wassermann.

### Médecine, Paris

December, 1922, 4, No. 3

Hygiene and Infectious Diseases in 1922. L. Tanon.—p. 165.

\*Feeding in Acute Diseases. M. Labbé.—p. 176.

\*Treatment of Infectious Diseases. H. Dufour.—p. 181.

\*Persistence of Malaria Parasites. J. Rieux.—p. 187.

Hygiene in Infectious Diseases. G. Reynaud.—p. 192.

\*Internal Mycoses. P. Sée.—p. 197.

\*Masked Forms of Intestinal Amebiasis. F. Moutier.—p. 199.

\*Typhoid Fever. P. Hébert and M. Bloch.—p. 205.

\*Primary Symptoms of Measles and Scarlet Fever. Piédelièvre.—p. 210.

Arsphenamin Treatment of Pulmonary Gangrene. M. Perrin.—p. 215.



- Treatment of Epidemic Encephalitis. J. Jumentié.—p. 221.  
\*Complement Fixation in Tuberculosis. J. Paraf.—p. 224.  
Intravenous Injections of Sodium Salicylate in Acute Articular Rheumatism. R. Lutembacher.—p. 228.  
Typhoid Fever and Autovaccines. R. Dubarry.—p. 229.  
Bacilli in Diphtheric Membranes. A. Baranger.—p. 233.  
Treatment of Malaria. P. Lassablière.—p. 235.

**Nutrition in Acute Diseases.**—Labbé recommends a diet rich in albumin to restore the proteins lost by the increased metabolism. The elimination of toxic substances should be aided by large amounts of fluid.

**Treatment of Infectious Diseases by Shock, Fixation Abscess and Vaccine Therapy.**—Dufour finds these methods useless and dangerous in the first stage of infectious diseases. If the disease continues and is too severe or too protracted, such treatment is justified, as well as in the later stages.

**Evolution of Malaria.**—Rieux believes that disappearance of the parasite from the blood of patients, which is usual after a year, signifies recovery. The attacks of fever, which may occur later are rather due to other diseases or sequelae of malaria, and not to its manifestations.

**Internal Mycoses.**—Sée draws the attention to internal mycoses, especially aspergillosis and oidiomycosis, which may clinically resemble tuberculosis of lungs. These affections can be cured with iodids.

**Hidden Forms of Intestinal Amebiasis.**—Moutier advises systematic examination of the stools for dysenteric amebas. Any enteritis, colitis or proctitis may be due to them.

**Typhoid Fever.**—Hébert and Bloch's statistics show a very good influence of vaccination on morbidity and mortality.

**Diagnostic Value of Primary Signs of Measles and Scarlet Fever.**—Piédelièvre considers Koplik's spots as a pathognomonic sign of measles. Careful examination may reveal them more than a week before the general exanthem. In the diagnosis of scarlet fever, a low blood pressure and a distinct enlargement of the spleen may aid. Schultz and Charlton's extinction sign is constant, but almost useless for the early diagnosis.

**Complement Fixation in Tuberculosis.**—Paraf points out the specificity of the reaction. It is not positive in all cases of active tuberculosis, and this applies especially to the early stages and to tuberculosis of organs other than the lungs.

### Paris Médical

Dec. 23, 1922, 12, No. 51. Pasteur Number

Republication of Pasteur's Four Revolutionary Articles, 1861-1884.—pp. 561-584.

Dec. 30, 1922, 12, No. 52

- \*Forms of Uric Acid in the Blood. M. P. Weil and Guillaumin.—p. 585.  
\*Functional Heart Murmurs in Children. G. Blechmann.—p. 588.  
\*Recent Research on Causes of Rachitis. E. Pichon.—p. 595.

**Various Forms of Uric Acid in the Blood.**—Weil and Guillaumin distinguish between the "total uric acid" of the blood and the free uric acid with its salts. The usual methods give only the value of the latter. The other part of the "total uric acid" consists of more or less complete remnants of nucleotids. Some of them give some reactions of uric acid (combined uric acid). In others, hydrolysis of the plasma after removal of albumin has to precede the reaction (uricogenous compounds). Their determination is still in the experimental stage. The uric acid of the plasma belongs almost exclusively to the free group. The combined uric acid is practically limited to the corpuscles, which contain also some free uric acid. A method of determination is given.

**Recent American and English Research on Causes of Rachitis.**—Pichon reviews some new American and English researches on rachitis.

### Progrès Médical, Paris

Jan. 6, 1923, 38, No. 1

- \*Prophylaxis of Inherited Syphilis. Vignes and Galliot.—p. 1.  
\*Mineral Water Treatment of Genito-Urinary Affections. Legueu.—p. 3.  
\*Relation of Heart Disease to Pregnancy. P. Hermet.—p. 4.

**Prophylaxis of Inherited Syphilis in Paris Lying-in-Hospitals.**—Vignes and Galliot report good results in prophylaxis

in maternity hospitals in Paris, and describe the treatment given to adults and the new-born.

**Heart Disease and Pregnancy.**—Hermet reviews the opinions of American authors on the subject of heart disease and pregnancy (Pardee, Lambert, Bishop, Neuhoof).

### Schweizerische medizinische Wochenschrift, Basel

Dec. 28, 1922, 52, No. 49-50

- \*Leukorrhea. W. Bigler.—p. 1193.  
\*Functional Treatment of Dysmenorrhea. F. Ludwig.—p. 1198.  
\*Neuroma-Like Formations in Obliterated Appendices. Schweizer.—p. 1202.  
\*Traumatic Rupture of Diaphragm in Congenital Diaphragmatic Hernia. G. G. Moppert.—p. 1205.  
\*Psychology of Treatment of Neurosis. A. v. Muralt.—p. 1207.  
\*Paroxysmal Pseudo-hemoglobinuria. T. and J. Stephani.—p. 1209.  
\*Action of Bile Acids on Heart. A. Tappelet.—p. 1210.  
\*Increasing the Coagulability of Blood. P. F. Nigst.—p. 1211. Conc'n.  
\*Volume of Blood in Pregnancy. E. Gueissaz and F. Wanner.—p. 1216.

**Etiology and Treatment of Leukorrhea.**—Bigler limits his paper to the nonspecific fluor. It originates only in the vagina or cervix, never in the body of the uterus. Although admitting that a normal secretion usually corresponds to a low bacterial content, he finds that there are no direct relations with high bacterial contents. One has to assume an endogenous factor—a readiness to inflammation. A non-specific secretion of this kind is very often only the external manifestation of an internal change: endocrines, especially the ovary. Acute and chronic general infections, diseases of blood and metabolism, and constitutional anomalies, like infantilism and status lymphaticus or hypoplasticus, are frequent causes. Bactericidal powers of the vaginal epithelium and of the blood are important protecting factors against leukorrhea. Evidences of vagotonia are common in the condition, and irritability of the vagus nerve may be the cause of a hypersecretion, especially from the cervix.

**Functional Treatment of Dysmenorrhea.**—Ludwig surveys the theories, and accepts dysmenorrhea as a disturbance of the tonus of the uterus. Substances paralyzing the tonus have a favorable influence.

**Increasing the Coagulability of the Blood.**—This is the last of a series of articles. Nigst points out that the bleeding is not a direct function of the coagulability of blood. Measures which lead to an increase in the blood coagulability in vitro, like application of roentgen rays on the spleen, have no practical value for surgical hemostasis. Local application of hemostatics may be useful, but only the classic surgical methods are reliable. An extensive survey of the literature is given.

**The Total Volume of Blood in Pregnant Women.**—Gueissaz and Wanner computed the volume of blood in ten nonpregnant and twelve pregnant women, and seven women after delivery. They used a combination of de Crinis and Löwy's methods (injections of glucose solution and refractometry of the serum). They found an increase in the blood volume of 15 per cent. in the pregnant.

Dec. 30, 1922, 52, No. 51-52

- \*Wildbolz' Reaction. R. Kipfer.—p. 1241.  
\*Transvestitism. R. Bing and S. Schönberg.—p. 1254.  
\*Sugar Metabolism. A. Gigon.—p. 1258.  
\*Syphilis-Like Affection of the Nail Due to Bacillus Fusiformis. M. Tièche.—p. 1259.  
\*Parathyreoprival Tetany. M. Greppin.—p. 1260.  
\*Sweating from Standpoint of Loss of Energy. M. E. Bircher.—p. 1265.  
\*Agglutination for Typhoid in Cholelithiasis. C. W. Jungeblut.—p. 1269.  
\*Reaction and Amount of Urine. A. Staehelin.—p. 1271.

**Wildbolz' Urine Reaction.**—Kipfer gives details of the technic, a report on 200 cases, and a survey of the literature on 2,300 cases. He considers the reaction a valuable adjuvant in the diagnosis of tuberculosis. He points out that negative clinical findings are not an absolute scientific proof that there is no tuberculosis.

**Transvestitism.**—Bing and Schönberg publish four cases of pronounced transvestitism—insistence on dressing in the clothes of the opposite sex. One of the men used boyish clothes.

**Sugar Metabolism.**—Gigon does not believe that the free blood sugar has a direct action in the glucose metabolism. It has perhaps some importance for the protein metabolism.



He supposes that the greatest part of the circulating sugar is bound to nitrogenous compounds.

**Case of Parathyreoprival Tetany, with Formation of Cataract, and Transplantation of Parathyroids.**—Greppin discusses especially the relation of the cataract to the tetany, and gives the literature on the subject, including treatment by transplantation of parathyroids.

**Sweating from Standpoint of Loss of Energy.**—Bircher produced sweating in twenty persons by heat and light. The oxygen consumption increased 13 per cent. over the basal rate, and the temperature of the body about 1 degree C. The increased metabolism lasted longer than the sweating.

**Agglutination for Typhoid in Cholelithiasis.**—Jungeblut examined seventeen patients with cholelithiasis. Agglutination of typhoid bacilli was positive only in two cases and of dysentery bacilli in two, together with agglutination of the colon bacillus.

### Annali Italiani di Chirurgia, Naples

Dec. 20, 1922, 1, No. 10-12

\*Sarcoma of Kidney and Vagina in Infant. G. Roello.—p. 743.

Malarial Splenomegaly in Sardinia. F. Putzu.—p. 767.

\*Perforated Gastric Ulcer. F. Niosi.—p. 866.

War Wounds of Skull and Brain. M. Sbrozzi.—p. 904. Cont'd.  
Transactions of Italian Surgical Congress.—pp. 926-992.

**Sarcomas in an Infant.**—A pedunculated sarcoma in the vagina grew rapidly again after repeated resection, and necropsy at the age of 8 months showed a sarcomatous tumor in both kidneys. Roello says that this is the seventeenth case on record of primary bilateral blastomas in children.

**Perforated Gastric Ulcer.**—Only two of the patients were women in Niosi's twelve cases. The age ranged from 18 to 60, and the onset of symptoms was sudden and stormy. In two of the cases the perforation was the first indication of the presence of an ulcer. The sudden intense pain persisted for three or five days before it became relieved. In one case the pain subsided completely, nothing but moderate tenderness in the epigastrium remaining of the severe symptoms that had suggested perforation. There was no history of previous stomach disturbances, and the man had leaped across a ditch just before his sudden pain. Niosi operated with considerable hesitation until the perforation came into view. In another case the man remained at work, and ate beans for supper. The interval in his case was thirty hours, and necropsy two days after the operation revealed a second perforation.

### Biochimica e Terapia Sperimentale, Milan

Dec. 31, 1922, 9, No. 12

\*Color of Blood After Carbon Monoxid. G. Benassi.—p. 357.

Clinical Tests for Urobilin. E. Tarantola.—p. 364.

**Color of Blood After Carbon Monoxid.**—Benassi admits that although the light red color of blood stains in persons dead from carbon monoxid poisoning is important, yet the absence of the color does not disprove at all the possibility of a great part of the hemoglobin being bound with carbon monoxid.

### Policlinico, Rome

Jan. 1, 1923, 30, No. 1

\*Inversion in Epidemic Encephalitis. G. Sabatini.—p. 2.

Two Cases of Pernicious Anemia. F. Grego.—p. 7.

\*Oral Affections in Pregnancy. G. B. Poletti.—p. 13.

**Inversion Phenomena in Encephalitis.**—Sabatini reports two cases of inversion of the daily cycle of activity after encephalitis. One of the patients with a parkinsonian syndrome was perfectly dull during the day, but was able to do fine work in the late evening. He points out that the insomnia of some encephalitic children with agitation is a similar phenomenon. Interesting examples of differences in the writing of the patients in the forenoon and at night are given. The morning samples show many pathologic changes; one subject needed three times the time to copy that was sufficient at night.

**Oral Affections in Pregnancy.**—Poletti discusses the affections of the mouth in pregnancy and puerperium. Pregnancy probably causes or perhaps aggravates different affections of

the mouth (gingivitis, caries of teeth). These disturbances seem to depend on alterations of the internal secretion (ovary, thyroid, parathyroid, posterior pituitary). Organotherapy may give good results.

Jan. 1, 1923, 30, Medical Section No. 1

\*Ulcerous Typhoid Aortitis. E. Marchiafava and A. Nazari.—p. 1.

\*Weisz' Reaction in Typhoid. G. Salmoni.—p. 8.

\*Prophylaxis of Pertussis with Vaccines. L. Auricchio.—p. 25.

\*Gases of the Blood. T. de Sanctis-Monaldi.—p. 33.

**Ulcerous Typhoid Aortitis.**—Marchiafava and Nazari give a clinical and pathologic account of the rare affection which caused the death of Take Jonesco. The famous Roumanian politician became ill nine days after eating two oysters in Naples. The typhoid fever started rather mildly, but on the fifty-second day the temperature increased. At the same time the patient suffered pains in the anterior inferior part of the abdomen, more to the left side. They increased during movements and defecation. Later the pain irradiated to the pubic and iliac regions, and remained till the end, which occurred suddenly, with symptoms suggesting internal hemorrhage, on the eighty-ninth day. A blood culture taken sixteen days before death was negative. The necropsy revealed arteriosclerosis of the aorta with a typhoid ulcer about 1 cm. proximal to the iliac vessels. The defect led into an aneurysm of the size of a small hen's egg, perforation of which had caused a retroperitoneal hematoma. This explained the clinical findings of an inferior abdominal angina.

**Weisz' Reaction in Typhoid.**—Salmoni used Weisz' reaction with permanganate in 1354 different cases, 360 of which belonged to the typhoid group, 300 were tuberculous. He found it very constant in typhoid fever. It appears earlier than agglutinins, is more simple and constant than the diazo-reaction, besides being independent of the drugs taken by the patient. It is negative in the first two stages of tuberculosis, but practically constant in the third. The reaction is due to some substances which are present only in pathologic states. It is to be considered positive only if the color is really a golden or canary yellow and if it persists, because a similar color caused by the presence of urobilin disappears in a few minutes.

**Vaccine Prophylaxis of Whooping Cough.**—Auricchio used a vaccine prepared from four strains of the Bordet-Gengou bacillus in forty cases which were exposed to infection in the family. Thirty-eight of these remained healthy, and only two who were vaccinated during the incubation phase showed slight symptoms of the disease. He made within six days three injections of 2 and 3 c.c. of a vaccine containing 2 billions of germs per 1 c.c. He examined in ten cases the progress of immunization by repeated agglutination, complement fixation (which he calls the Wassermann reaction), and opsonin tests. All of them showed the efficacy of the treatment.

**Gases of the Blood.**—De Sanctis-Monaldi reviews the gases of the blood, especially in relation to acidosis.

### Tumori, Rome

Dec. 25, 1922, 9, No. 3

Blood Vessels in Experimental Tumors. S. Dentici.—p. 249.

\*Chronic Inflammation and Experimental Tumors. G. d'Agata.—p. 263.

Cancer in Wolffian Region. E. Gioja.—p. 278.

\*Dercum's Disease and Multiple Lipomatosis. G. Goglia.—p. 318.

\*Lymphosarcoma of Pharynx. G. Ferreri.—p. 333.

\*Fibrosarcoma of the Tongue. R. Brancati.—p. 356.

**Chronic Inflammation and Experimental Tumors.**—D'Agata inoculated mice with cancer and with the sporothrix, together or separately. The two processes, the cancer and the chronic inflammation, developed separately even in the same organ. When the cancer was not inoculated until there was an intense peritoneal reaction to the inoculated inflammation, the cancer did not take.

**Adiposis Dolorosa and Multiple Nodular Lipomatosis.**—Goglia's data confirm the anatomic similarity between these two affections, while reaffirming the absolutely different clinical course and prognosis. The asthenia in Dercum's disease is physical, psychic and cardiovascular. There may even be hallucinations and tachycardia. The onset may be almost like an explosion. It resembles the attack of gout to such



an extent as to suggest that the fat is deposited in the subcutaneous tissue to form adipose topi in the same way that the urates are deposited in cartilage to form gouty topi. In the five cases described, one was typical Dercum's disease, three were ordinary multiple lipomatosis, and the fifth case was evidently a transitional form between the two. His review shows that Dercum's disease mainly affects women while ordinary lipomatosis affects men. Long survival is rare with adiposis dolorosa.

**Lymphosarcoma of Pharynx.**—Deep roentgen-ray treatment was applied in Ferreri's three cases, and the two men were apparently entirely cured. They have had no return of disturbance during the months since. One woman died. The sarcoma was in a tonsil in this case. Swelling of glands in the neck was the first symptom, and the tumor in the tonsil developed rapidly in less than three months from the first symptoms. The lymphosarcoma retrogressed also in this case after the cross-fire exposure to one third of an erythema dose. By the third day the aspect was almost normal, but the patient died from acute marasmus. The symptoms indicated intense intoxication. Necropsy revealed metastasis in the spleen although to the eye it seemed normal.

**Fibrosarcoma of the Tongue.**—The tumor had been noticed for six months. It occupied the tip of the tongue in a boy, aged 17. The whole tip of the tongue was resected under local anesthesia. Brancati advocates resection of the entire tongue in case of rapidly growing sarcoma.

### Brazil-Medico, Rio de Janeiro

Dec. 9, 1922, 2, No. 49

- \*Mycosis Associated with Leishmaniasis. F. Terra et al.—p. 363.  
Necropsy Findings in Case of Syringomyelia. M. Couto Filho.—p. 368.  
Uranotenia Mosquitoes. A. Neiva and C. Pinto.—p. 374.

**Associated Leishmaniasis and Mycosis.**—One leg from hip to toes was scattered thickly with ulcerated nodules, which proved to be due to two distinct processes, cutaneous leishmaniasis and a dermatitis from which the acrotheca was cultivated. The term chromoblastomycosis is suggested as a descriptive title.

Dec. 16, 1922, 2, No. 50

- \*Prophylaxis of Syphilis in Infants. A. Pedro.—p. 381.  
\*Suppurating Cholecystitis. R. da Silva.—p. 383.  
\*Spontaneous Cure of Cataract. J. Santa Cecilia.—p. 385.  
Flagellate Parasites of Birds. A. Marques da Cunha and J. Muniz.—p. 386.  
Treatment of Fetid Bronchitis. G. do Couto e Silva.—p. 388.

**To Ward Off Syphilis in the Offspring.**—Pedro emphasizes the necessity for mercurial treatment of all pregnant syphilitic women. He reiterates that systematic treatment all through the pregnancy is imperative, and that it is harmless, whatever the woman's condition. He injects the mercury in a muscle or by the vein, regardless of the Wassermann reaction. The results in years of this treatment have confirmed that it protects the fetus against spirochetes, and allows its normal development and growth after birth. He reports a number of instances in which healthy children were born under systematic mercurial treatment while the same women bore deformed children in previous or subsequent pregnancies without the mercury. Treatment of the father has no influence on the offspring.

**Treatment of Acute Purulent Cholecystitis.**—The young woman seemed to be moribund from the intense peritoneal reaction to acute suppurating gallbladder disease. She was weak from a childbirth a month before, followed by influenza. Ribeiro da Silva merely broke up adhesions and aspirated about 40 gm. of the purulent contents of the gallbladder by capillary puncture, which revealed streptococci. Recovery was prompt and complete. Cholecystectomy later proved unnecessary.

**Spontaneous Cure of Cataract.**—The man had been blind from bilateral cataract for twelve years when sudden improvement was observed in the right eye. For seven years since, to date, he has been able to distinguish movements of the hand at 1 meter. The papilla shows glaucomatous excavation. The milky cataract must have ruptured the capsule and been absorbed. Santa Cecilia states that there are about eighty cases on record of reabsorption of an overripe cataract.

Dec. 23, 1922, 2, No. 51

- \*Etiologi of Beriberi. C. Fraga.—p. 395.  
\*Gummatous Lymphomas. O. Clark.—p. 400.  
New Species of Blood-Sucking Insect. A. Neiva and C. Pinto.—p. 402.  
\*The Bone Marrow in Immunization. C. Magarinos Torres.—p. 403.

**Etiology of Beriberi.**—Fraga presents evidence to sustain his conviction that beriberi—in Brazil, at least—is an infectious disease and not a deficiency disease. A one-sided or oversterilized diet may afford a predisposition, but this alone will not induce beriberi. He describes the clinical picture in three cases under close supervision from the very first symptoms. Two in this group were medical students. The onset was always that of an acute infectious disease. The polyneuritis developed about the fifth day. The acute infectious onset is generally ascribed to influenza or something else, and the connection with the polyneuritis escapes notice. He cites two groups of nine convicts each in the penitentiary at Bahia who volunteered for experiments on promise of release. They were fed on hulled or sterilized rice or other deficient diet for a month or six weeks, but none developed polyneuritis. He adds that perhaps the strongest argument in favor of the infectious origin of beriberi is the success of treatment with arsenicals. At the Bahia insane asylum, Barreto Prager has had most encouraging results with neo-arsphenamin. In a recent epidemic of beriberi, cure under neo-arsphenamin was comparatively rapid. If a deficiency diet were alone responsible, how could this benefit from arsenical treatment be explained?

**Gummatous Lymphomas.**—Clark urges tentative treatment for syphilis before accepting the diagnosis of lymphosarcoma. In two cases described the lymphomas melted rapidly under specific treatment. In one case futile operations had already been performed on the huge lymphomas in both inguinal regions.

**The Bone Marrow in the Course of the Immunization Process.**—During the last two years Magarinos Torres found decided changes in the bone marrow of rabbits which were being utilized for production of agglutinins. The changes in the bone marrow seemed to parallel the curve of agglutinin production. The action of the antigen, the leukocytosis, and the production of antibodies all make demands on the bone marrow.

### Medicina Contemporanea, Lisbon

Aug. 20, 1922, 40, No. 34

- \*Bilharziasis in Portugal. C. Franca.—p. 265. Conc'n.

**Bilharziasis in Portugal.**—Franca relates that not until 1921 were any autochthonous cases of bilharziasis known in Portugal but in that year and since a number of cases were found. The majority were in a single focus, the bay of Atalaia, in which the women of the neighborhood were accustomed to wash clothing, standing in the water. A mission from the Lisbon Bacteriologic Institute found that a thermal spring in this bay kept the water warmer than elsewhere, averaging 25.5 C. This explained the survival of the bilharzia in molluscs, and rendered improbable the spread of the focus. A number of works have been published on this endemic bilharziasis in the last two years, describing research on the intermediate hosts as well as the clinical cases, and the action of antimony tartrate. Besides Franca, Bettencourt, Machado d'Almeida and Pereira da Silva have been investigating indigenous bilharziasis. In twenty-three cases, complement fixation tests were positive only in six. Treatment with antimony tartrate proved effectual, but the correct dosage, Franca says, is still a question.

### Revista Médica del Rosario, Argentina

November-December, 1922, 12, No. 6

- \*Blocking the Splanchnic Nerves. P. L. Mirizzi.—p. 347.  
Anguillula Stercoralis in Stools of Young Man. R. Barralt.—p. 381.  
\*Spontaneous Meningeal Hemorrhage. T. Fracassi.—p. 395.

**Splanchnic Regional Anesthesia.**—Mirizzi applied on seventeen cadavers the various technics that have been proposed for blocking the splanchnic nerves. He injected a solution of methylene blue. With the Kappis technic, the diffusion of the anesthetic showed that the analgesia would probably have been complete in 80 per cent. of the subjects. With Braun's technic, the proportion was still higher, 100 per cent. The



details of thirty-two clinical cases in which the Kappis method was used on the right side are tabulated, and compared with what others have published, citing over 411 cases. In Mirizzi's cases the analgesia was satisfactory in 88.46 per cent. The duration of the analgesia was two and a half hours in two cases tested. The cases in which the anesthetic had to be supplemented by other means were in nervous or obese patients, or the site of the lesion had not been accurately diagnosed beforehand.

**Spontaneous Meningeal Hemorrhage.**—Fracassi reports eight cases in adults, encountered in two years. The diagnosis is almost impossible without lumbar puncture. In two of his cases treatment for epidemic meningitis had been given. The sudden onset in the midst of apparent health is the most striking feature of this "meningeal epistaxis" or "meningeal hemoptysis," as it has been called. Sudden convulsions or coma open the clinical picture, but there is no frank hemiplegia, and if the hemorrhage stops, the symptoms gradually subside in a week or two, or the hemorrhage may return. Treatment is that for cerebral hemorrhage in general, supplemented by injections of normal horse serum to promote coagulation. Lumbar puncture should not be repeated, as a rule, because reducing the pressure may favor recurrence of the hemorrhage. One patient has survived three attacks at long intervals; others died at the first or second attack. The mortality was 25 per cent.; the age ranged from 33 to 56, except one girl of 19. Complete coma was the first symptom in this girl, with bilateral Babinski but no other symptoms until the second day of the coma when there was slight stiffness of the neck. The coma continued with temperature of 37.5 C. for twenty days, with slow final recovery. The other patients were all men.

### Revista Médica del Uruguay, Montevideo

November, 1922, 25, No. 11

- Aid for Unmarried Mothers. A. Turenne.—p. 785.  
 \*Hereditary Ataxia. A. Isola and H. Artucio.—p. 795.  
 \*Pernicious Anemia in Purpura. C. Bordoni Posse and R. Rinaldi Guerra.—p. 798.  
 Dysentery from Lambliasis. Justo F. González.—p. 802.  
 Lambliasis in a Boy. Camilo Payssé.—p. 806.  
 \*Leprosy in Uruguay. José Brito Foresti.—p. 808.  
 Tetanus Fatal in One Day. E. Portu Pereyra.—p. 842.

**Hereditary Ataxia.**—The ataxia developed at the age of 8. It was of the true hereditary type although no other cases were known in the family. As the girl grew up, certain symptoms suggested optic neuritis from a brain tumor, but the edematous pseudoneuritis subsided after proper lenses had been prescribed.

**Pernicious Anemia and Purpura.**—Anemia of pernicious type developed in the course of a month in purpura of eleven months' standing. The man lived on a sailing vessel, and the unbalanced diet was evidently responsible for the disturbances. The authors suggest that in all cases of pernicious anemia it is wise to seek for deficiencies in diet.

**Leprosy in Uruguay.**—Brito Foresti states in this official report that there are 197 known cases of leprosy in Uruguay. This is a minimal proportion of one case to 7,500 inhabitants—about the same as in Norway. The principal complications in the cases he has encountered are acute nephritis and tuberculosis.

### Archiv für klinische Chirurgie, Berlin

Dec. 23, 1922, 122, No. 2

- \*Camphor-Phenol in Treatment of Joints. A. Hedri.—p. 281.  
 \*Osteomyelitis of Ribs. F. Michelsson.—p. 314.  
 \*Reconstruction of Jaw and Chin. A. Eiselsberg and H. Pichler.—p. 337.  
 \*The Urochromogen Reaction. M. Flesch-Thebesius and B. Lion.—p. 370.  
 \*Foreign Bodies in Esophagus. H. Killian.—p. 382.  
 \*Preparedness of the Stomach for Ulcer. L. Moszkowicz.—p. 444.  
 Cardiolytic After Gunshot Wound of the Pericardium. R. Strebel.—p. 500.  
 \*Drainage After Goiter Operations. J. Ujhelyi.—p. 522.  
 \*Prophylaxis of Peptic Ulcer. Haberer.—p. 534.  
 \*Complications with Artificial Esophagus. C. Hirschmann.—p. 553.

**Action of Camphor and Phenol in Joints.**—Hedri writes from Payr's service to extol the results from filling the capsule of a joint with Chlumsky's mixture of 30 parts liquid phenol; 60 parts pulverized camphor, and 10 parts alcohol.

In 20 rabbits, 39 joints, injected with 1, 2 or 3 c.c., showed no sign of injury at the time or later. None of the 7 clinical cases given preventive camphor-phenol treatment developed suppuration. The 12 cases with existing suppuration were all favorably influenced, and nothing suggesting arthritis deformans has developed. Thirty-three illustrations and a bibliography accompany the article.

**Primary Infectious Osteomyelitis of Ribs.**—Michelsson states that the lesion was in the ribs only in sixteen of the total 1,008 cases of osteomyelitis at the Riga clinic. The cases compiled from the literature bring the total to eighty. Spontaneous recovery is highly improbable, but early operative treatment offers every prospect of a permanent cure.

**Reconstruction of Jaw and Chin.**—This profusely illustrated article reports excellent results when a double pedicled flap from the scalp is drawn down like a cap band to cover the chin. The part of the flap extending on the brow is used for the lining of the lower lip.

**The Urochromogen Reaction in the Urine.**—In four cases of fatal surgical tuberculosis the urochromogen reaction had been positive. It veered to positive in time in all cases with unfavorable course, while in all cases improving or cured, the reaction was constantly negative or became negative sooner or later. Study of 100 cases indicates that the reaction must be supervised for months to be really instructive. None of the patients with a negative reaction died. The test is applied to fresh night urine; 8 c.c. is mixed with three volumes of hydrant water and half is poured into another reagent glass. Then 2 or 3 drops of the 1:1,000 solution of potassium permanganate are added to one of the glasses. A canary yellow tint at the end of an hour is a positive reaction.

**Foreign Bodies in Esophagus.**—Killian refers to cases with various complications. In 380 operative cases the mortality was 21.3 per cent., but the mortality increased with complications. He discusses the indications for operative treatment, and emphasizes the importance of the after-care.

**Preparedness of the Stomach for Ulcer.**—Moszkowicz' photomicrograms confirm the histologic anomalies which are evidently a factor in gastric ulcer.

**Drainage After Goiter Operations.**—Ujhelyi writes from Bier's surgical service to denounce drainage after operations on the thyroid. He declares it is an unnecessary evil.

**Prophylaxis of Postoperative Peptic Ulcer.**—Haberer argues that no technic guarantees against peptic ulcer, but resection by the Billroth I method has the best record in this line to date.

**Reconstruction of the Esophagus.**—Hirschmann's seventeen illustrations show the various complications liable with an extrathoracic esophagus, and the means to avoid and correct them.

### Deutsche medizinische Wochenschrift, Berlin

Dec. 29, 1922, 48, No. 52

- \*Uremia. H. Strauss.—p. 1719.  
 Urinary Calculi. F. Voelcker.—p. 1721.  
 \*Results of War Amputations and Prostheses. F. Lotsch.—p. 1723.  
 \*Treatment of Peritonitis with Ether. C. Stieda.—p. 1725.  
 Coxitis and Spontaneous Luxation in Influenza. Ochsenius.—p. 1726.  
 Habitual Vomiting of Infants. A. Dollinger.—p. 1726.  
 \*Prophylaxis of Puerperal Fever. H. Kritzler.—p. 1726.  
 Anaphylaxis in Protein Treatment. Neumann-Spengel.—p. 1727.  
 \*Carcinomas of Colon. L. Kuttner.—p. 1727.  
 Bleeding and Tamponade of Nose. Finder.—p. 1729.  
 Niessen's Bacillus of Smallpox. H. A. Gins.—p. 1730.

**Uremia.**—Strauss gives a short survey of the two different forms of uremia (eclamptic and true uremia), and mentions also the vascular syndromes. The treatment of true uremia consists in large venesections and treatment of the heart. If the patient is unable to retain fluids, intravenous infusions of 200 c.c. of a 20 per cent. solution of glucose, or in enemas, are valuable. In eclamptic forms, the heart is also important. Narcotics are valuable, lumbar puncture relieves the patient, and large venesections should never be omitted. Rest is essential. Decapsulation of kidneys is to be recommended when a suburemic condition develops in marked oliguria.

**Results of War Amputations and Use of Prostheses.**—Lotsch reviews the results of different methods. Very few



stumps are capable of bearing the whole weight of the body. The main point to be considered now is the adaptability to an intended prosthesis. The greatest part of the weight rests usually on the condyles of the tibia or the tuber ischii, and the rest of the extremity serves simply as a lever.

**Treatment of Peritonitis with Ether.**—Stieda used from 100 to 150 c.c. of ether in sixty-four cases of perforation peritonitis following appendicitis. A diffuse peritonitis was present in twenty-seven of these patients, eight of whom died. He poured the ether into the abdominal cavity, and always drained.

**Prophylaxis of Puerperal Fever.**—Kritzler points to the danger of infection to which wives of men with suppurating fistulas after wounds are exposed.

**Carcinomas of Colon.**—Kuttner deals with diagnosis and treatment of carcinomas of the colon. The symptoms are different according to the form and size of the tumor. Some patients have only cachexia. Fever, which occurs sometimes, misleads often to a diagnosis of tuberculosis of bronchial or mesenteric glands. In other cases no cachexia is present. Irregular movements of bowels should always lead to careful examination. Constipation is very suspicious, but diarrhea, especially when putrefactive, may be also a symptom. Paroxysmal pains are characteristic. Occult bleeding is most important, although there may be long periods without bleeding. Examination of the rectum should be made after emptying the bladder. Endoscopy of the rectum and sigmoid flexure is absolutely indicated in every persistent constipation. Roentgen rays indicate the seat of the disease, but only rarely the kind. If the examination is negative and the suspicion strong, laparotomy should be tried. An early radical operation is the only way to cure. Roentgen rays are useful only before and after operation.

### Klinische Wochenschrift, Berlin

Dec. 16, 1922, 1, No. 51

- \*Origin of Urobilinogen. A. Adler.—p. 2505.
- \*Balneology and Pharmacology. J. Markwalder.—p. 2507.
- \*Surgery in Acute and Subacute Liver Atrophy. W. Braun.—p. 2510.
- \*Use of the Duodenal Tube. A. Weilbauer.—p. 2512.
- \*Secretion in Fasting Stomach. H. Galewski.—p. 2515.
- \*Volume of Blood in Pregnancy. R. Koch and M. Jakobovits.—p. 2518.
- \*Alimentary Reaction of Leukocytes. E. Stransky and J. Langer.—p. 2521.
- \*Liver Function Test with Methylene Blue. H. M. Cohn.—p. 2522.
- \*Influence of Mother's Age on Development of Child. Reiter and Ihlefeldt.—p. 2524.
- Action of Calcium in Spasmophilia. K. Blühdorn.—p. 2525.
- Hemoclastic Crises in Children. Schiff.—p. 2526.
- Operation of Hernias in Children. H. Maass.—p. 2526.
- "Middle Part Phenomenon" of Cerebrospinal Fluid. V. Kafka.—p. 2527.
- Cause of Differences in Syphilitic Antigens. J. Schubert.—p. 2527.
- Chronic Myeloid Leukemia with Bothrioccephalus and Tenia Saginata. J. Stukowski.—p. 2527.
- \*Treatment of Calculi in Kidney and Ureter. W. Israel.—p. 2529.
- Fifty Years of the Society for Public Hygiene in Berlin. E. Seligmann.—p. 2532.
- Origin of Electric Currents in Living Tissue. R. Beutner.—p. 2535.

**Origin of Urobilinogen.**—Adler found that the amount of urobilin in urine is largely independent of the amount of pigment in the feces, and concludes that a part of the urobilin arises in the tissues. The chief place of origin remains in the bowels, but the hepatic origin seems well established. Urobilin is a pyrrol nucleus compound, and he believes therefore that Kupffer's cells, which have a well known affinity for pyrrol, play a part in its elaboration.

**Balneology and Pharmacology.**—Markwalder believes that the action of mineral waters consists in changing the organic ions in the organism; he calls this "transmineralization." It leads to a change in the reaction of cells and tissues to normal and pathologic stimuli.

**Surgery in Acute and Subacute Liver Atrophy.**—Braun was led to the surgical treatment of these affections by the fact that failures to make a diagnosis between a liver atrophy and cholangitis are frequent. The drainage of the hepatic duct was followed in some cases by marked improvement of the condition. The amount of bile increased progressively, and the patients recovered. The operation is rational when the atrophy occurred after cholangitis, but he thinks that it should be tried also in other cases of progressive acute atrophy of the liver. Chloroform must be strictly avoided.

**Research on Use of Duodenal Tube.**—Weilbauer only once found the duodenal contents sterile. In more than 100 other cases, bacteria were present. Pneumococci were the rule but streptococci and staphylococci were very frequent. Colon bacilli were present in cases with gastric achylia. It is well to look for typhoid bacilli in the duodenal contents in every case of jaundice, cholelithiasis and cholangitis. The best and simplest liver function test is that for urobilin and urobilinogen in the urine.

**Immediate and Late Secretion of Fasting Stomach.**—Galewski emphasizes the difference between the secretion which occurs immediately after introduction of the tube into the empty stomach and the "tardy" secretion which comes after some time. The amounts of tardy juice were very variable, and even healthy subjects sometimes secreted over 100 c.c.

**Volume of Blood in Pregnancy.**—Köch and Jakobovits used Greisbach's method (injections of congo-red). In 13 normal women they found the average volume of blood 5.73 per cent. of the body weight (minimum 4.43, maximum 8.91). In 24 pregnant women, the average was 5.40 (minimum 3.73 per cent., maximum 8.17 per cent.). In 14 cases of labor, the blood volume was smaller than in the two preceding groups, average 4.46 per cent., minimum 3.95 per cent., maximum 5.22 per cent. There is no plethora in pregnant women.

**Alimentary Reaction of Leukocytes.**—Stransky and Langer examined the reaction of puppies to food, and found a leukopenia after all kinds of food (proteins, fats and carbohydrates). Young dogs react also to an injection of amino-acid. Alimentary leukopenia is a normal reaction of the growing organism, and is independent of the liver function. The leukopenia observed by the authors was only moderate.

**Liver Function Test with Methylene Blue.**—Cohn tested fifteen healthy persons and forty-five patients without hepatic or kidney disturbances with Roch's test (excretion of methylene blue after ingestion of 0.002 gm. by the mouth). Fully 60 per cent. of the healthy subjects and 80 per cent. of the other patients responded positively. The test is therefore useless.

**Influence of Mother's Age and Repeated Pregnancies on Development of the Child.**—Reiter and Ihlefeldt conclude from 634 legitimate children that repeated pregnancies and higher age of the mother influence the somatic and psychic qualities of the children unfavorably.

**Indications for Treatment of Calculi in Kidney and Ureter.**—Israel emphasizes the importance of early recognition and treatment of these stones, which would otherwise destroy a vital organ. Conservative treatment is indicated when the stone is small and aseptic, in bilateral lesions, and when there are contraindications from other organs. A calculus in the ureter is especially dangerous for the kidney. In conservative treatment, he advocates 2 quarts of mineral water and 6 tablespoonfuls of glycerin daily for a week. Catheterization of the ureter should be tried in every case. Nephrolithotomy is much more dangerous than pyelolithotomy. Ureterolithotomy has a good prognosis.

Dec. 23, 1922, 1, No. 52

- \*Hemodynamic Problems. W. Weitz.—p. 2553.
- \*Comparative Liver Function Tests. E. Hesse and A. Havemann.—p. 2556.
- \*Perforating Ulcer and Peripheral Sympathectomy. M. Kappis.—p. 2558.
- \*Research on Burns from Intense Heat. H. Schridde.—p. 2563.
- Reticulo-Endothelium Local Immunity. H. Siegmund.—p. 2566.
- Treatment by Light. F. Schanz.—p. 2568.
- \*Specificity of Tuberculin Reaction. G. Tobias.—p. 2571.
- \*Puncture of Testicles in Cadavers. E. Mühsam.—p. 2572.
- \*Soft Food Containing Little Fluid. Alkan.—p. 2575.
- Gelatin Embedding of Specimens for Demonstrations. Scheidemandel.—p. 2576.
- Action Currents of Striated Muscles. J. G. de Barenne.—p. 2577.
- \*Some Clinical Chemical Methods. H. Citron.—p. 2578.
- Multiple Chyle Cysts of Colon. H. Böge.—p. 2579.
- Familial Polycythemia with Progressive Chorea. Doll and Rothschild.—p. 2580.
- Treatment of Ozena. K. Amersbach.—p. 2580.
- Future of Public Hygiene. A. Gottstein.—p. 2583.

**Hemodynamic Problems.**—Weitz reviews the conditions of dilatation and hypertrophy of the heart and the question of a direct influence of arteries and capillaries on the circulation.



**Comparative Liver Function Tests.**—Hesse and Havemann had comparatively good results with chromocholoscropy after injections of indigocarmine. Widal's test was positive only in one case out of sixteen in which no liver lesion was present. The increase in blood sugar over 15 per cent. after ingestion of 15 gm. of sodium lactate is a good liver function test. They recommend the use of several tests because all the functions of the liver are not necessarily affected in every case.

**Cause and Treatment of Perforating Ulcer of the Foot and Elsewhere.**—Kappis believes that the perforating ulcer is a decubital or traumatic (thermic, etc.) ulcer in a part with lowered sensibility. In most of the cases a fistula of the joint is present. It does not heal because the regeneration in a paralyzed tissue is not normal. The treatment has to endeavor to restore the nervous supply. Locally a resection of the affected joint is to be recommended. Sympathectomy may be tried.

**Burns of Skin.**—Schridde found that burns due to electric currents are histologically identical with those provoked by application of great heat (cautery).

**Specificity of Tuberculin Reaction.**—Tobias finds only quantitative differences between the reactions following tuberculin and nonspecific proteins. Yet he admits that the toxic component of tuberculin has a stronger affinity for the specific foci.

**Puncture of Testicles in Dead Bodies.**—Mühsam made punctures of the testicles in dead bodies and concludes that the method might give reliable clinical results when it is desired to know whether the testicle is able to form spermatozoa.

**Soft Food Containing Little Fluid.**—Alkan in all cases with gastric hypersecretion uses a diet containing very little fluid. The food does not require chewing.

**Some Clinical Chemical Methods.**—One of Citron's methods consists in the determination of the amount of fluid in the fasting stomach. The patient drinks a certain quantity of a solution of urea. Immediately afterward a stomach tube is introduced, and the percentage of urea in the fluid thus obtained is compared with the original. The urea nitrogen is determined by the hypobromite method. If the patient took 100 c.c. of a urea solution containing  $N$  per cent. of nitrogen and the mixed stomach juice contains  $N_1$  per cent. of nitrogen, the amount of fluid which was present in the fasting stomach is  $\frac{100(N-N_1)}{N_1}$ .

### Medizinische Klinik, Berlin

Dec. 17, 1922, 18, No. 51

- \*Gaucher's Splenomegaly. H. Lippmann.—p. 1607.
- \*Cancer and Self-Protection of the Organism. C. Bayer.—p. 1610.
- \*Dry Gonococcus Vaccine. A. Buschke and E. Langer.—p. 1613.
- \*Intravenous Injections of Oily Substances. Lenzmann.—p. 1614.
- Relation of Malaria in Berlin to Arsphenamin. G. Hamel.—p. 1615.
- Polyarthritis and Pyelitis. R. Korbsch.—p. 1617.
- \*Treatment of Oxyuriasis with Arsphenamin. K. Hajós.—p. 1619.
- Portable Apparatus for Pneumothorax. I. W. Samson.—p. 1620.
- Röntgen-Ray Diagnosis of Duodenal Ulcer. G. Herrnhäuser.—p. 1621.
- Intravenous Injection of Concentrated Arsphenamin. J. R. Thim.—p. 1623. Conc'n.
- Physicochemical Foundations of Spasmophilia. H. Hummel.—p. 1626.

**Gaucher's Splenomegaly.**—Lippmann reports a case of this rare familial disease. The splenomegaly, enlarged liver, yellow complexion, leukopenia, which changed into a leukocytosis after injections of epinephrin and during the dysentery, led to the diagnosis. In the puncture fluids and "harpoon" specimens from the spleen the usual big cells were present, but they did not contain free cholesterol. The cholesterol content of the blood was low. The patient is still living, and in comparatively good general condition.

**Cancer and Self-Protection of the Organism.**—Bayer reviews the etiology of carcinoma and the protecting action of the organism, and discusses means to enhance it.

**Dry Gonococcus Vaccine.**—Buschke and Langer found most of the commercial vaccines without effect, and their protein content very low. They attribute it to autolysis. A dry

vaccine prepared from gonococci had good therapeutic effects, but the injections were so painful that they had to be discontinued.

**Intravenous Injections of Oily Substances.**—Lenzmann points out that small amounts of oil (0.25 gm.) cannot lead to an obstruction of the pulmonary circulation.

**Treatment of Oxyuriasis with Arsphenamin.**—Hajos reports favorable results with the use of 0.9 gm. neo-arsphenamin by the mouth in seven adults.

Dec. 24, 1922, 18, No. 52

- \*Importance of the Anamnesis in Diagnosis. W. Neumann.—p. 1637.
- \*Psychophysical Relations in Internal Medicine. F. Mohr.—p. 1639.
- \*Akinesia in Chronic Blepharospasm. H. H. Elschmig.—p. 1641.
- Treatment of Fistula of Anus. H. Sieben.—p. 1641.
- Habitual Luxation of the Clavicle. H. v. Ortenberg.—p. 1642.
- Forceps of the Practitioner. H. Strube.—p. 1645.
- Diseases of the Bladder. E. Portner.—p. 1646.
- Recent Literature on Soft Chancre. F. Pinkus.—p. 1648.

**Tuberculosis of Lungs and Pathology of Personality.**—Neumann shows in a special case of tuberculosis the importance of an exact history of the patient, and gives interesting details which result from comparison of the anamnesis with the findings of minute physical examination.

**Psychophysical Relations in Internal Medicine.**—Mohr finds that too little stress is laid on the fact that every somatic disturbance necessarily conditions psychic disturbances, and vice versa.

**Therapeutic Akinesia in Chronic Blepharospasm.**—Elschnig paralyzed the orbicular muscle of the eye with procain in a case of blepharospasm of several years' duration. The injection was made by Van Lint's technic for operations on cataracts. The result was good although not permanent, and the injections had to be repeated a few weeks later.

### Münchener medizinische Wochenschrift, Munich

Dec. 22, 1922, 69, No. 51

- \*Migraine in Children. H. Curschmann.—p. 1747.
- \*Optimal Action of Syphilitic Antigens. J. Hohn.—p. 1750.
- \*Leukopenia as a Reflex of the Autonomic System. E. F. Müller.—p. 1753.
- Spontaneous Formation of Loose Bodies in Joints. E. Roesner.—p. 1757.
- Turning of Heart in High Position of Diaphragm. Zezschwitz.—p. 1758.
- Louis Pasteur. M. Gruber.—p. 1758.
- Protection of Language in Science. E. Liek.—p. 1760.
- Treatment of Tuberculosis and Lupus of Nose. G. Spiess.—p. 1762.
- Medical Supervision of Athletics. K. A. Worringen.—p. 1763.
- Technic and Interpretation of Ventriculography. W. Weigeldt.—p. 1764.

**Migraine in Children.**—Curschmann states that migraine in children is much more frequent and important than appears from textbooks. This neglect is due to the fact that the condition is rare in clinics. Yet it is frequent in private practice. Abdominal symptoms are characteristic. Many supposed colics, many cases of supposed appendicitis, ulcer of stomach and duodenum are migraine. Heredity is practically always present. The attacks are strictly periodic. Fever may be present.

**Optimal Action of Syphilitic Antigens.**—Hohn finds that the main difference between the complement fixation and the precipitation tests lies in the large amounts of serum which are necessary for the precipitation (about eight times more than in fixation). The colloidal state of the antigen is of the greatest importance. He recommends an antigen which after dilution shows with a magnifying lens (6x) extremely fine granules. The concentration of sodium chlorid is also important, and it must be titrated.

**Leukopenia as a Reflex of the Autonomic System.**—Müller found that intracutaneous (not subcutaneous) injections of indifferent substances (including normal saline and even air) cause leukopenia. Addition of minimal amounts of epinephrin delays the reaction. The phenomenon seems to be a reflex due to stimulation of the vagus. The end point of the reflex lies in the vessels of the abdomen. Their dilatation causes slowing down of the blood stream and accumulation of leukocytes in the abdominal organs. Increased tonus of the sympathetic system prevents this leukopenia. He agrees with Glaser's explanation of Widal's hemoclastic crisis as a vagus reflex. The liver has no direct influence. The cause is a change in the equilibrium between the vagal and sympa-



thetic tonus. The phenomenon cannot be used as a liver function test.

Dec. 29, 1922, **69**, No. 52

- \*Action of Different Strains of Spirochetes. Plaut and Mulzer.—p. 1779.
- Bismuth in Syphilis. Felke.—p. 1781.
- \*Cultures of Spirochetes in Arsphenamin. W. Krantz.—p. 1782.
- Physiology of Labyrinth. M. H. Fischer.—p. 1783.
- Some Points in Microscopic Technic. Carl.—p. 1785.
- Advertisements in the Reception Room. Scherbak.—p. 1787.

**Action of Different Strains of Spirochetes on Nervous System of Rabbits.**—Plaut and Mulzer studied the neurotropy of different strains of spirochetes on rabbits. The work as well as the whole field of experimental syphilis of the nervous system is made easily accessible by Plaut's suboccipital punctures of rabbits. The Wassermann reaction was always negative in rabbits' cerebrospinal fluid, but micromethods for the globulin test, cell counts, mastic and goldsol reactions gave good results. While one strain only exceptionally caused changes in the cerebrospinal fluid, another strain led to such changes almost regularly. Histologic findings confirmed these "clinical" results. They used also strains from the cortex of two cases of general paresis which caused in three generations of rabbits typical changes in the fluid without local changes at the place of inoculation. The histologic changes in these cases closely resembled those of human general paresis.

**Cultures of Spirochetes in Mediums Containing Arsphenamin.**—Krantz found that neo-arsphenamin did not inhibit the growth of spirochetes in Schereschewsky's medium in a concentration of 1:5,000. This is twice as strong as that in the blood of a patient after administration of 0.5 gm. of the drug.

### Wiener klinische Wochenschrift, Vienna

Dec. 21, 1922, **35**, No. 51

- \*Roentgen-Ray Diagnosis of Duodenal Ulcer. M. Haudek.—p. 987.
- Dengue. M. Eugling.—p. 991.
- Roentgen Diagnosis of Duodenal Ulcer. G. Singer.—p. 993.
- Dosage, Stimulating Doses and Radiosensitivity. K. Ullmann.—p. 994.
- \*Sedimentation of Erythrocytes. Poindecker and Siess.—p. 997.
- Conc'n. Scabies in Vienna. M. Oppenheim.—p. 998.

**Roentgen-Ray Diagnosis of Duodenal Ulcer.**—Haudek relies on roentgen ray for diagnosis. In seventy cases in one and a half years, thirty-six diagnoses were confirmed by operation, and only two were disproved. He describes his technic and the roentgenologic symptoms of duodenal ulcers.

**Sedimentation Speed of Erythrocytes.**—Poindecker and Siess find that accelerated speed of sedimentation is a good indicator of the activity of pulmonary tuberculosis, and therefore is important for prognosis. Occult focal reactions may be made apparent by this method.

Dec. 28, 1922, **35**, No. 52

- Treatment of Tuberculosis. J. B. Andreotti.—p. 1005.
- \*Spontaneous Entero-Anastomosis. L. Berczeller and Z. Szilárd.—p. 1006.
- \*Hypertonic Solutions and Gastric Secretion. J. Karmel.—p. 1007.
- Extensive Cervicovaginal Fistula with Six Weeks' Ovum. E. Graff.—p. 1011.
- Curettage of Conjunctiva in Chronic Catarrhs. N. Blatt.—p. 1011.
- \*Test for Patency of Tubes. L. G. Dittel.—p. 1013.
- Comment on "Indications for Roentgenotherapy." L. Freund.—p. 1013.

**Spontaneous Anastomosis of the Intestine.**—Berczeller and Szilárd ligated the rectum of white rats fed with starch, a food which could be almost entirely absorbed. They found that the passage was regularly restored in four or five days. The experiments were negative if the ligation was made on the proximal parts of the colon, or on the ileum.

**Action of Intravenous Hypertonic Solutions on Gastric Secretion.**—Karmel found that hypertonic intravenous injections, especially of sugar (20 c.c. of a 50 per cent. solution), decrease gastric secretion.

**Test for Patency of Tubes.**—Dittel points to some dangers of Rubin's method due to the possibility of pregnancy or infection.

### Zentralblatt für Chirurgie, Leipzig

Dec. 30, 1922, **49**, No. 52

- Comment on "Nerve Blocking in the Leg." O. Wiedhopf.—p. 1929.
- \*Spastic Ileus in Influenza. F. Colmers.—p. 1931.
- Collapse of Anterior Transverse Arch of Foot. G. Hohmann.—p. 1933.
- Contusions of the Kidney. K. Hugel.—p. 1935.

**Spastic Ileus in Influenza.**—Colmers mentions three cases of spastic ileus associated with influenza, in all of which an operation was performed. No obstruction was found but only spastic contraction of the intestine, which had given rise to the clinical symptoms. This condition may occur frequently during an epidemic of influenza. If colicky pains and similar symptoms associated with diarrhea and vomiting appear, spastic ileus should be suspected. In his cases an erroneous diagnosis was more or less excusable, since the onset of ileus symptoms was acute and, in spite of all treatment, the vomiting could not be checked nor the severe subjective symptoms relieved. In doubtful cases, however, he would still prefer to make a small abdominal incision, in order to discover the true condition of affairs, rather than run the risk of overlooking true intestinal occlusion. Spastic ileus in influenza may be due to the action of the central nervous system on the intestinal musculature. An irritation produced by pathologically affected mesenteric glands may play a part, or possibly a toxic influence from the intestinal contents.

### Zentralblatt für Gynäkologie, Leipzig

Dec. 23, 1922, **46**, No. 51

- \*Roentgen Irradiation in Amenorrhea. H. Thaler.—p. 2034.
- \*Lipoids in the Corpus Luteum. T. Wiczynski.—p. 2044.
- Comment on Müller's "Physiologic Ascites in Women." J. Novak.—p. 2050.
- \*Ileus During Pregnancy. H. A. Dietrich.—p. 2052.
- \*Teratoma Evacuated Through Rectum. J. Ohrenstein.—p. 2055.

**Roentgen Irradiation in Amenorrhea.**—Thaler reports good results from roentgen irradiation in cases of essential amenorrhea and in other disturbances based on hypofunctioning of the ovaries. In not less than thirty-six of the fifty-five women thus treated for secondary amenorrhea the condition was cured, and in the large majority of these cases menstruation became regular and remained regular during the whole period of observation. At the beginning of treatment Thaler used from six to ten Holzknecht units. He employed an Apex apparatus, provided with a Watt water-cooled tube. The distance of the tube from the skin was 23 cm., and 3 mm. of aluminum and deerskin was used as a filter. A large field between the umbilicus and symphysis pubis, extending laterally to the anterior superior spines, was irradiated. Frequently, a second irradiation with a somewhat weakened dosage was given a week later. If any further treatment seemed needed, an interval of at least four weeks was allowed to elapse. Then a double irradiation, as at first, was usually given. Very rarely were more than the two double treatments given. As the main purpose of irradiation was the stimulation of the development of the corpus luteum, from six to eight days after the end of the menstrual period were allowed to elapse, in the case of menstruating patients, before they were irradiated. Five of the eighty women with menstrual anomalies treated by irradiation became pregnant in a few months.

**Lipoids in the Corpus Luteum.**—Wiczynski recalls that the lipoids are no longer regarded as ordinary degenerative products of the cell. Investigations of recent years confirm the view that these bodies, with albumin, constitute a very important component of the cell protoplasm. The differences between the corpus luteum of the menstruating woman and that of the pregnant woman are not essential but of a morphologic nature. That the lipoids are not found in the microchemical preparations during pregnancy is not due to their absence but to combinations with albuminous substances, from which they are liberated through the action of the mixture of pepsin and hydrochloric acid. The corpus luteum of menstruation and the corpus luteum of pregnancy are one and the same organ, the future of which is determined by the fate of the ovum. The behavior of the lipoids in the corpus luteum furnishes proof that it is the ovum that plays the dominant rôle in the ovary; all other components of the ovary are to be regarded as auxiliary factors.

**Ileus During Pregnancy.**—Dietrich recounts an interesting case of ileus, which occurs rarely in pregnancy. Prompt laparotomy saved the patient in the seventh month of pregnancy and a healthy boy was born spontaneously at term. There was no compression of the intestine by the uterus. A



loop of the small intestine above the uterus was found to be with torsion of 270 degrees. When the torsion was reduced, an extensive invagination 60 cm. long was noted and 1.5 meters of the small intestine had to be resected. The volvulus may have been caused by the expanding pregnant uterus. Dietrich states that frequently in ileus associated with pregnancy the first symptoms are incorrectly interpreted, and the best time for operation is allowed to slip by.

**Teratoma Evacuated Through the Rectum.**—Ohrenstein reports a peculiar case of teratoma in a woman, aged 26. At the age of 5, a long tuft of hair suddenly appeared at the anal opening, and later reached a length of about 10 cm., so that the patient was compelled, from time to time, to cut off the hair that protruded. She always had the feeling of a foreign body in the rectum. The stool during all the years had presented the form of a hollow cylinder. She had had no particular trouble except in the case of hard stools. A few hours before admission to the hospital, at the age of 26, a profuse rectal hemorrhage occurred, and, at the same time, a tumor appeared at the anal opening, the size of a man's fist. The apex was irregularly lacerated and the color was bluish black. A tooth appeared in the lacerated opening and was removed. The tumor was attached to a pedicle, which extended from 11 to 12 cm. within the rectum. The following day laparotomy was performed; the utero-ovarian ligament was divided close to where it entered the intestine and was removed with the left tube. A degenerated portion of the right ovary was also resected. The tumor was drawn from the rectum by the pedicle, and the pedicle was excised from the rectal wall. Recovery was uneventful. The tumor was a typical teratoma with all three germ layers represented.

### Casopis Lekaruv Ceskych, Prague

Dec. 23, 1922, 61, No. 51

- \*Action of Epinephrin on Formation of Antibodies. A. Hrma.—p. 1217.  
\*Treatment of Encephalitis Parkinsonism. K. Henner.—p. 1223. Conc'n.

**Action of Epinephrin on Formation of Antibodies.**—Hrma tested the action of epinephrin injections on formation of hemolysin, on the complement content, on restitution of a lowered titer of immune hemolysins, and in some other instances. The results were entirely negative.

**Treatment of Postencephalitic Parkinsonian Syndromes with Sodium Cacodylate.**—Henner reports the results of this treatment in fifty-two cases, with 1,300 injections. Nearly 2,000 injections were given at the clinic without such mishaps as have been described by French authors. The solution used was sodium cacodylate 0.50 gm. in 2 c.c. of twice distilled water. The solution must not be older than two days. The intravenous injections were given three times weekly, starting with 1 c.c. and increasing to 4 c.c. At the end of one course the amount was decreased to 1 c.c. The whole course required a total of from 30 to 55 gm. of sodium cacodylate. After three weeks the treatment was repeated. Four such courses were given. Nicotin, alcohol, caffeine are harmful. Physical treatment was used if the disease did not show signs of activity. The urine should be watched for albumin and sugar. After the injection no heavy meals are allowed. Of the fifty-two patients, forty-nine were influenced favorably.

### Acta Medica Scandinavica, Stockholm

Dec. 21, 1922, 57, No. 4

- \*New Method for Counting Blood Platelets in Man. A. Kristenson.—p. 301.  
\*\*"Spinal" Deviation of Intentional Movements. S. Ingvar.—p. 313.  
\*Red Corpuscles and Their Variations. E. J. Rud.—p. 325. Begun No. 2, p. 142.  
Present Knowledge of Incomplete Bundle Branch Block. N. Stenström.—p. 385.  
\*The Classification of Human Blood. S. Hesser.—p. 415.

**New Method for Counting Blood Platelets in Man.**—Kristenson dilutes one part of blood with nine parts of a solution consisting of 10 gm. of urea, 2.5 gm. of sodium citrate, 0.005 gm. of mercuric chlorid, and 0.5 gm. of brilliant cresyl blue in 500 c.c. of water. The fluid hemolyzes erythrocytes and colors white corpuscles and platelets.

**"Spinal" Deviation of Intentional Movements—Past Pointing.**—Ingvar observed a deviation of the movement of one

arm (in pointing to a place), if the person abducted the other arm, and especially if a weight was held in the abducted extremity. The phenomenon occurs only in the Romberg position, and not if the person is seated comfortably. Ingvar explains it as an unconscious compensation to preserve the equilibrium, and believes that the deviations due to the vestibular apparatus are also compensatory balance reflexes.

**Red Corpuscles and Their Variations.**—Rud found no constant or distinct influence of meals, time of the day, menstruation, site of puncture, and the venous or arterial origin on the relative number of erythrocytes. Of all physiologic conditions, pregnancy was the only one which decreased the number of red corpuscles.

**The Classification of Human Blood.**—Hesser examined forty serums for isoagglutinins and isohemolysins. He found that both properties belong in the same groups. If the hemolysins are not strong enough to dissolve fresh blood, their action can be demonstrated on old erythrocytes.

### Finska Läkaresällskapets Handlingar, Helsingfors

November-December, 1922, 64, No. 11-12

- \*Operative Treatment of Hallux Valgus. T. Sandelin.—p. 543.  
Case of Mixed Sarcoma and Carcinoma in Bladder. F. Stenius.—p. 565.  
\*Turpentine in Treatment of Adnexitis. B. Nyström.—p. 575.  
\*Test Glycosuria in Pregnancy. S. Leskinen.—p. 584.  
\*Transfusion of Blood in Pernicious Anemia. M. Savolin.—p. 591.  
\*The Autonomic Nervous System. T. W. Tallqvist.—p. 616.  
Scarlet Fever in Helsingfors. M. Björkstén.—p. 629.

**Hallux Valgus and Its Operative Treatment.**—Sandelin found flatfoot accompanying hallux valgus in 5.9 per cent. of the total 536 cases. The foot was normal in only 79.8 per cent. In 54 per cent. hereditary influence was manifest, and in 23 per cent. of the others no data were known. Recent reexamination of 116 of the 147 patients given operative treatment since 1904 showed excellent results with the Hueter method in 70 per cent. The head of the bone is cut off with straight nippers. Sandelin advises against resection for cosmetic purposes alone. Massage hastened recovery after the operation.

**Turpentine in Treatment of Adnexitis.**—Nyström had good results from intramuscular injection of turpentine in some cases of gynecologic inflammation. But on the whole the results were disappointing.

**Alimentary Glycosuria as Early Test for Pregnancy.**—Leskinen applied the Kamnitzer method in 48 women, 13 in the first three months of pregnancy and 31 nonpregnant controls. The test is an intragluteal injection of 2 c.c. of a solution of 0.03 parts of phlorizin in 30.5 parts distilled water, with 0.015 parts procain. It is applied in the morning before eating, and at the same time the patient drinks 200 c.c. of water. The urine voided half an hour later is examined and another glass of water is ingested. At half hour intervals the Nylander test is applied to the urine. The reaction is positive when precipitation occurs on boiling for one minute. In the 13 pregnant women the test was positive in 12 and positive on repetition a month later in the thirteenth. It was positive in 2 of the 4 cases of abortion. It was positive likewise in 15 per cent. of the 31 nonpregnant women. Hence the test is not infallible. The positive reactions all occurred within the first hour.

**Transfusion of Blood in Pernicious Anemia.**—Savolin gives the details of fourteen cases of Biermer's anemia treated in Tallqvist's service by injection or transfusion of blood. One woman now aged 41, had typical pernicious anemia in 1909. It improved under arsenic treatment but constantly recurred. In 1915 the hemoglobin was 40 per cent.; the erythrocytes 1,900,000. An intramuscular injection of defibrinated blood was followed by high fever, but she began to improve, and promptly regained full earning capacity and has felt entirely well during nearly eight years since. A sister and aunt had died from pernicious anemia. In three other cases transfusion of blood had a very favorable influence. One man is still well two years later.

**The Autonomic Nervous System.**—Tallqvist reviews the pathologic physiology of the vegetative nervous system that has proved of practical value.



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## RELATION OF CLINICAL TO NECROPSY DIAGNOSIS IN CANCER AND VALUE OF EXISTING CANCER STATISTICS

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Among the factors often mentioned as responsible for the undeniable fact that more deaths from cancer have been recorded in recent years than formerly is the increment of cases of cancer recognized at necropsy that were unrecognized during life. These added cases help to swell the cancer death rate; and hence, the more advanced the medical profession of a given community, the more necropsies, and the smaller the number of cancers that escape inclusion in the vital statistics of the community. The experience of necropsy disclosure of a clinically unrecognized malignant growth is so common that this factor is always brought forward when the alleged increase in the frequency of cancer is under discussion; and it is universally admitted. Despite the recognition and acceptance of this factor, however, we have very little in the way of actual evidence as to its real importance.

The most quoted paper is that of Reichelmann.<sup>1</sup> He examined the records of 7,790 necropsies at the Hospital Freidrichshain zu Berlin, from April 1, 1895, to June 24, 1901, among which there were 711 carcinoma cases, or about 9 per cent. He does not include sarcomas or forms of malignancy other than carcinoma. Among these 711 carcinoma cases were 156, or 22 per cent., that were not recognized during life as malignant disease, irrespective of whether the site or the character of the growth was correctly diagnosed. That is to say, if necropsies had not been performed in these cases, the vital statistics would have contained 555 instead of 711 cases of cancer from this group of deaths; i. e., necropsies added about 28 per cent. On the other hand, fifty-eight cases were diagnosed cancer when this condition was not present, so actually the figures are as follows: In 769 cases, cancer was either diagnosed correctly (62.5 per cent.), missed when it was present (20 per cent.) or diagnosed as present when there was no cancer (7.5 per cent.). Subtracting the cases added by erroneous diagnosis of cancer when it was not present (fifty-eight) from the number added by missing the cancer (156), we find that the performance of necropsies actually added ninety-eight cases to the vital statistics, or about 15 per cent. Carcinoma was diagnosed correctly 555 times, and incorrectly fifty-eight times, and was missed 151 times when present, so that there were 214 errors to 555 correct diagnoses, a diagnostic error of 27.5 per cent. in the 769

cases. Reichelmann cites also a paper by Hofmann<sup>2</sup> based on hospital statistics in Kiel, not available to me, which showed an addition of 19.6 per cent. to the cancer figure through necropsy.

A statistical study of the cancer cases in a large number of London hospitals has been reported by Bashford,<sup>3</sup> who discusses the influence exerted by microscopic examination in cancer statistics; but in these figures no exact distinction is made between cases examined at necropsy and tumors removed at operation and then examined microscopically. In all such cases, of course, the cancer had been viewed and a gross anatomic diagnosis had been made. This includes most of the tumors classed as accessible in Table 1.

Even in this group of cases, microscopic study, either with or without necropsy, added 121 cases to the 683 recognized without the aid of the microscope, or nearly 18 per cent. Presumably, the inaccessible cases alone were recognized first by necropsy, and here we find 106 added to 284, or 37.3 per cent.

In view of the fact that the foregoing statistics were compiled in other countries, and at a period when the roentgen-ray examination was not available with its important diagnostic aid, it seemed worth the labor to ascertain how things stand in this respect in a material under my own observation. I have, therefore, gone over the available necropsy records of the Cook County Hospital for the years 1917-1922, inclusive, comprising about 2,712 necropsies, and also 1,000 other records of my own necropsies not included in these statistics, although many of them were performed in the Cook County Hospital at an earlier date than 1917. In these 3,712 necropsies were disclosed 545 cases of malignant disease, or 14.7 per cent. Our figures cover all forms of malignant tumor, including cerebral gliomas and endotheliomas, that were met with on the necropsy table.

The summary of these records in respect to the chief question under consideration, i. e., how many cancers are recorded in the vital statistics that would have been omitted but for necropsy, is given in Table 2.

To offset this large error of omission, we find errors of commission, i. e., cancer diagnosed as present when no malignancy was found at necropsy, there being twenty-three such in the Cook County Hospital figures and ten in the University of Chicago figures, making a total of thirty-three to be subtracted from the 178 cases erroneously added. Therefore, our necropsies added to the 400 cases diagnosed cancer during life (367 correctly and thirty-three incorrectly) 145 cases, or 36 per cent. In 578 cases (367 correct, 178 omissions and thirty-three erroneously called cancer), there were 211 incorrect diagnoses, or a diagnostic error of 36.5 per cent.

2. Hofmann: Statistik der nicht diagnostizierten Krebse, Inaug. Diss., Kiel.

3. Bashford: Scientific Reports of the Imperial Cancer Research Fund, London, 1905, No. 2, Part 1.

1. Reichelmann: Berl. klin. Wehnschr. 39: 728 and 758, 1902.



When we tabulate our cases, we find that an excessively small proportion are in sites accessible to direct examination. Divided on this basis we have the results presented in Table 3.

These figures indicate that, as is to be expected, few of the errors are made with external tumors.

TABLE 1.—DIAGNOSIS OF NEOPLASMS

	Malignant Neoplasms		Not Cancer but Wrongly Diagnosed as Cancer
	Correctly Diagnosed	Not Diagnosed	
Accessible.....	399	43	28
Inaccessible.....	284	109	3
Total.....	683	152	31

One of the chief reasons why our figures of error are so high is the fact that they include very few cases of external cancer. In most cases of external neoplasms, the condition is so obvious that little or no effort is made to obtain permission for a necropsy. On the other hand, it is in the cases in which there has been difficulty in arriving at a correct diagnosis that the permission is sought with the greatest zeal and most readily secured. Undoubtedly, the greatest influence in accounting for the large proportion of unrecognized internal tumors is the fact that so large a proportion of the cancer cases in American municipal hospitals occur in patients who are brought into the hospital when moribund or nearly so; wherefore adequate clinical study cannot, and often should not,

TABLE 2.—PERCENTAGE OF CASES DIAGNOSED BEFORE AND AT NECROPSY

	Cook County Hospital	University of Chicago	Total	Percentage
Correctly diagnosed as malignant tumors*	257	110	367	67.34
Not recognized as malignant tumors.....	125	53	178	32.66
Total.....	382	163	545	100.00

\* Irrespective of whether the location or the character of the malignant growth was correct.

be made. The error in diagnosis of internal tumors, 37.1 per cent., was almost exactly the same as that reported for inaccessible tumors in the London hospitals, 37.3 per cent.

As to the diagnosis of the more commonly occurring tumors, we have in Table 4 the figures on the Cook County Hospital material, which is selected as being more nearly homogeneous as to clinical conditions than the material from my own necropsies.

This table shows that few tumors of the uterus or rectum escape recognition, as might be expected. Most of the errors here were in patients dying of some complicating condition and in a state of dissolution too advanced for thorough examination. However, it is to be admitted that there were some inexcusable errors made through neglect. For example, one patient was studied most carefully by two excellent internists because of peculiar physical findings in the chest, which led to a debate as to whether the lesion might not be a pulmonary syphilis. Their examination apparently was limited to the chest, for they accepted the junior intern's note on the history that the vaginal examination was negative. There was, however, an ulcerating carcinoma of the cervix with extensive metastasis in the right pleura.

Carcinomas of the stomach, esophagus and prostate were usually recognized, although about one third were not correctly diagnosed. As might be expected, primary carcinoma of the liver and lung most often escaped recognition. Our figures in Table 5 show that, at least in the Cook County Hospital material, primary lung and liver carcinomas are far from uncommon. Primary pancreatic tumors were not often correctly diagnosed, although the malignancy was frequently recognized but not correctly located. The same is true for primary carcinoma of the bile tracts. The low figure for the diagnosis of the brain tumors undoubtedly depends on the fact that in many cases the clinical manifestations were those of a complicating hemorrhage into the brain substance, while other patients were brought into the hospital dying in coma, with no available history.

TABLE 3.—DIAGNOSIS OF EXTERNAL\* AND INTERNAL TUMORS

	Cook County Hospital	University of Chicago	Total	Percentage
External tumors correctly diagnosed.....	61	21	82	89
External tumors not recognized..	5	5	10	11
Internal tumors correctly diagnosed.....	196	89	285	62.9
Internal tumors not recognized..	120	48	168	37.1

\* Under external tumors are included carcinomas of the skin, mouth, tongue, pharynx, breast, uterus and penis, and sarcomas of the extremities or superficial structures; but not carcinomas of the rectum, bladder or larynx.

The sort of errors in diagnosis varied, of course, with the site of each tumor. Thus, in carcinoma of the stomach, the errors were extremely varied; of the thirty-six errors, the diagnosis was heart disease (usually myocarditis) in six; and cirrhosis, pulmonary tuberculosis, carcinoma of the esophagus and carcinoma of the colon in four each. In carcinoma of the esophagus, among fifteen errors, pulmonary tuberculosis appears four times, while aneurysm was the mistake but once. Carcinoma of the pancreas, diagnosed correctly in but four of twenty-two cases, was miscalled carcinoma of the stomach six times, cirrhosis four times, and carcinoma of the liver three times. Carcinoma of the bile tracts, correctly diagnosed but four times in fifteen cases, was called carcinoma of the stomach in

TABLE 4.—DIAGNOSIS OF MORE COMMONLY OCCURRING TUMORS (COOK COUNTY HOSPITAL)

	Total	Correct	Malignancy Correct, but Site Incorrect	Diagnosed Nonmalignant or No Diagnosis	Correct, per Cent.	Correct as to Malignancy, per Cent.
Carcinoma of:						
Stomach.....	103	67	11	25	65	76
Esophagus.....	41	26	3	12	63	70
Pancreas.....	22	4	9	9	18	59
Bile tracts.....	15	4	5	6	27	60
Liver.....	10	1	2	7	10	30
Colon.....	17	8	1	8	47	53
Rectum.....	14	11	1	2	80	86
Bladder.....	18	8	3	7	44	61
Prostate.....	8	5	1	2	63	75
Uterus.....	21	17	1	3	81	86
Lung.....	11	1	2	8	9	27
Intracranial tumors	23	9	0	14	39	39
Renal tumors.....	9	4	2	3	44	67

five cases, and the diagnosis of gallstones was made but once. Obstructive jaundice was the diagnosis in three cases. Primary carcinoma of the liver was entered correctly as liver neoplasm in but one case in ten, cirrhosis being the diagnosis in five cases. Primary lung tumors, recognized in but one of eleven cases, and interpreted as intrathoracic tumor in two others,



was diagnosed pulmonary tuberculosis in four cases and pneumonia in two. The intracranial tumors, correctly diagnosed nine times in twenty-three cases, were interpreted as cerebral thrombosis and as epidemic (lethargic) encephalitis three times each, and twice each as cerebral syphilis and paresis.

Taking all the tumors of whatever location, we find the following to have been the commonest erroneous diagnoses: cirrhosis, twenty-one; pulmonary tuberculosis, eighteen; heart disease, usually myocarditis, eleven; pneumonia, seven; nephritis, six; jaundice, six; paresis, six; generalized tuberculosis, five. Naturally, in many of the advanced cases coming into the hospital, the terminal condition was recognized without the responsible malignancy being found, and so we have such diagnoses as intestinal obstruction, peritonitis, anemia, septicemia, dysentery, diabetes (one pancreatic cancer, one brain tumor), and abscess, as well as pneumonia, in several cases.

A study of the distribution of all the tumors (Table 5) reveals several significant facts. First is the great predominance of tumors of the alimentary system, which constitute more than half of all the cases. The fact that the character of the cancer cases seen in a large public hospital is not a fair representation of the character of cancer in the community at large is indicated by the relative infrequency of the chief external cancers, i. e., the skin, six; tongue, seven; mouth, lips and pharynx, twelve; uterus, twenty-seven, and breast, sixteen. If our statistics had been compiled from the admission records of a large surgical hospital, we should have had a totally different picture, with these very sorts of operable tumors predominating over cancer of the stomach, esophagus and pancreas. In our material, we find the supposedly rare primary cancers of the liver, fifteen, and lung, seventeen, ranking with cancers of the mammary gland, sixteen, while cancers of the pancreas, thirty-two, and intracranial tumors, thirty-three, exceed the uterine cancers, twenty-seven, which barely outnumber the respiratory tract tumors, twenty-five. Despite the obviously misleading character of such selected material as these hospital statistics furnish, we find medical literature full of erroneous statements based on just such statistics.

There were fifty sarcomas among 545 malignant neoplasms, or about 9 per cent. of all. This figure is rather lower than that given in most tables of cancer statistics. Probably there is some exclusion of sarcomas of the extremities from our necropsy material for the same reason that we find external carcinomas scantily represented. Another factor is probably a more critical acceptance of the diagnosis of sarcoma than was once general. It is being appreciated more and more that not all round and spindle cell tumors are sarcomas, and that carcinomas are much more often mistakenly called sarcomas than the reverse. We have not included any of the testicle tumors among the sarcomas, where most of them are usually placed in classification, for we are convinced that they usually represent tumors of specialized cells of mesodermal origin, and that they are rarely true sarcomas.

In all these necropsies, there was but one instance of a definitely benign tumor causing death. In this case, which is not included in our tables, intestinal obstruction resulted from uterine fibroids.

There were four instances of coexistence of two apparently independent primary malignant tumors in the same subject: (1) carcinoma of the prostate coexisting with a carcinomatous ulcer in the pylorus, which perforated into the peritoneum; (2) glioma cerebri in

a man with a small fibrosarcoma in the skin of the thigh; (3) scirrhus carcinoma of the head of the pancreas with a typical ulcerating carcinoma of the stomach, and (4) giant cell sarcoma of the jaw with carcinoma of the prostate.

This study shows emphatically the lack of value of all recorded vital statistics on cancer. When we find diagnostic errors ranging from 25 to 40 per cent. in patients who have been examined in modern hospitals in Germany, England and America, with the advantages of exploratory operations, roentgen rays and laboratory

TABLE 5.—DISTRIBUTION OF TUMORS

Site and Type	Cook County Hospital	University of Chicago	Total
Alimentary canal.....	232	85	317
Carcinoma of:			
Stomach.....	103	39	142
Esophagus.....	41	9	50
Pancreas.....	22	10	32
Colon.....	16	3	19
Rectum.....	14	4	18
Small intestine.....	—	1	1
Ampulla of Vater.....	1	—	1
Bile tract.....	15	5	20
Liver.....	10	5	15
Mouth, lips and pharynx.....	6	6	12
Tongue.....	4	3	7
Genito-urinary tract.....	85	34	119
Carcinoma of:			
Uterus.....	21	6	27
Vagina.....	1	—	1
Mammary gland.....	11	5	16
Ovary.....	6	—	6
Testicle.....	7	3	10
Prostate.....	8	4	12
Bladder.....	18	5	23
Penis.....	2	1	3
Ureter.....	—	1	1
Chorio-epithelioma.....	1	1	2
Kidney—			
Carcinoma.....	4	2	6
Sarcoma.....	1	—	1
Hypernephroma.....	5	6	11
Respiratory tract.....	16	9	25
Carcinoma of:			
Lung and bronchi.....	12	5	17
Larynx.....	4	1	5
Trachea.....	—	1	1
Endothelioma of pleura.....	—	2	2
Cerebral tumors.....	24	9	33
Glioma.....	20	5	25
Sarcoma.....	2	2	4
Endothelioma.....	1	2	3
Carcinoma, choroid plexus.....	1	—	1
Ductless glands.....	10	5	15
Thyroid.....	5	3	8
Hypophysis.....	3	—	3
Suprarenal.....	2	2	4
Sarcomas.....	57	21	78
Total, all sites.....	37	13	50
Melanosarcoma.....	5	2	7
Retroperitoneal.....	3	3	6
Mediastinal.....	7	—	7
Extremities.....	5	3	8
Endothelioma.....	1	4	5
Brain.....	1	2	3
Pleura.....	0	2	2
Miscellaneous.....	11	17	28
Carcinoma of skin.....	4	2	6
Carcinoma of antrum.....	—	1	1
Neuroblastoma.....	2	1	3
Chorio-epithelioma.....	1	1	2
Multiple myeloma.....	1	4	5
Carcinoma, primary site not located.....	2	4	6
Multiple tumors, cases.....	1	3	4
Chloroma.....	—	1	1

studies under the most competent medical men in the community, it is certain that the diagnostic errors made throughout the country at large must be even greater. To be sure, to the large charity hospitals come an excessive proportion of patients too near death for careful study, and there come to necropsy an undue proportion of cases that are difficult of diagnosis. On the other hand, it is quite certain that a large proportion of persons who have internal cancers are not seen by physicians much earlier than are these hospital patients. It is also certain that, under the conditions obtaining in general practice, the diagnostic effort and ability will average much less than in the large hospitals.



These necropsy statistics show convincingly that we have at the present time no reliable statistics relative to the frequency of cancer as a cause of death. The futility of attempting to learn anything concerning heredity from such statistics is even more glaringly apparent. A single error in diagnosis may lead to entirely erroneous conclusions in the study of the influence of heredity on cancer in a given family. Such accuracy is obviously not present in any existing study of human heredity in respect to cancer. We shall have no exact and very little useful information concerning cancer statistics until a very much larger proportion of vital statistics depends on postmortem examination than is now the case.

### ASCERTAINING THE SPLENIC INDEX AND THE MOSQUITO FOCUS FROM SCHOOLCHILDREN

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Schoolchildren can be utilized by the epidemiologist and the health officer not only in estimating the amount of malaria in a community, but also, at times, to reveal the source of the anophelines responsible for their infection. A striking demonstration of this was made at São Paulo, Brazil, in one of the field surveys made by the Instituto de Hygiene in cooperation with the International Health Board.

Health officers and plantation managers and employers of labor in regions where there is endemic malaria not only require an index of the degree of malaria, as affected by control measures, but also need to know where the dangerous breeding places are, for often money is wasted in efforts on places in which malaria-bearing anophelines do not propagate at all or in but small and unimportant numbers.

In the survey in question, the customary method of spleen examination was pursued, and blood specimens were taken as well for the endemic index or parasite rate; but in order that no time should be lost in making the anopheline survey, the information obtained from the spleen census was immediately used in the schoolroom to ascertain the probable location of the focus of propagation of the anophelines. This was done by grouping the children according to whether their spleens were palpable or not, and by ascertaining the residence of those with enlarged spleens. An unmistakable indication of the location of the breeding place was elicited, which was confirmed by the larval survey.

The method would seem to lend itself to those special circumstances in which it is desired to locate promptly and incriminate real and dangerous breeding places in the presence of several apparent propagation areas, or to determine the relative amount of malaria arising from two or more foci. In malarial control work it is often highly desirable to know which of the collections of water in the malarial community is the real breeding place and focus of the malaria present, so that time and money can be economized by exerting effort where it will be followed by the greatest good. In the Orient it was possible, by selective grouping of the coolies after the spleen survey, to obtain corroborative testimony as to the influence of certain propagation foci on the production of mosquitoes and of the malaria found in the coolies.

In rural communities where malaria exists, the school should furnish an index of the amount of malaria present, because of the well known frequency of splenic enlargement in children in an endemic or epidemic region, and because the children are representative of the exposed group, temporarily segregated and readily accessible to the epidemiologist or to those interested in malaria control.

In malarial infection there is a correspondence in time between the appearance of malarial plasmodia, the occurrence of fever, and the enlargement of the spleen. This takes place in new infections, in reinfections and in relapse. The splenic enlargement persists for some time after the subsidence of fever.

Groups of people without protection and constantly exposed to malarial infection and to reinfection, as is the case with many rural populations, are in a constant state of flux with regard to the manifestations of the disease. Plasmodia appear and disappear from the peripheral blood. The spleen fluctuates in size from month to month, and the splenic index in such a community reveals the degree of reaction of the people to the amount of malaria present. The longer the group is exposed to the infected mosquitoes, the higher the spleen rate becomes. The closer people live to the propagation areas of the anopheline mosquitoes, the oftener they are bitten by infected specimens, and the higher the parasite rate (endemic index) and the spleen rates are found to be. When persons remove from the endemic region, the spleen returns to normal size.

When, through the influence of antilarval measures, the propagation areas of anopheline carriers of malaria are destroyed, or whenever the mosquito host of the plasmodium is controlled, as by screening, and whenever, by quinization or other means, the amount of malaria in a region or locality is lowered, the spleen rate and the parasite rate are reduced.

When one considers that the peripheral blood findings in malaria represent in many cases only an overflow, while the great drama, as Manson explained, is often enacted in the spleen and internal viscera, and that 10 per cent. or more of laborers at work in the tropical sun may harbor plasmodia in the peripheral blood, it is questionable whether the spleen rate may not be as trustworthy a measurement of malaria as clinical histories or as the results of peripheral blood examination as usually carried out.

Authorities in the Orient believe that the health officer has in the spleen rate a practical means for detecting fluctuations in the amount of malaria in a locality, and one that can be rapidly applied.

In a few instances, malaria infection is not associated with splenic enlargement, as in some cases of acute and fatal pernicious malaria and in cases of superinfection; but it is belaboring an academic point to overemphasize these cases and to refuse the method on account of them, for it is certainly true that in localities constantly exposed to malaria or those visited epidemically, a correspondence exists between the amount of malaria and the spleen rates. In a large series of determinations made in Panama by Davis and myself, a correspondence between the endemic and splenic indexes was noted.

It is also true that, wherever malaria has caused splenic enlargement, the clinical history is usually sufficiently definite to permit the making of a diagnosis from the latter. Many epidemiologists, however, would welcome a method which would elicit information without the necessity of relying on the testimony of ignorant, overzealous or incooperative persons.



Stephens and Christophers<sup>1</sup> have shown that the correspondence is influenced by age in that in the earlier years of life—from 1 to 2 years—the parasite rate is greater than the splenic index. Above 2 years the spleen rate is in excess of the parasite rate, while above 10 years the spleen rate is greatly in excess of the parasite rate. They recommend on the basis of their experience that children between the years of 2 and 10 be used in applying the method.

But it may happen and, as a matter of fact, often does, in times of epidemic malaria or when persons come into a malarial locality who have lived continuously in a nonmalarial place, that, as they possess no immunity to malaria, they are affected very much like children in that their spleens react to the malarial poison by enlargement. Such persons may be made use of in the malarial or spleen census. This was the case with Spanish laborers and negroes from Barbados acquiring malaria for the first time as adults in Panama.

The spleen census is used universally in the Orient by those interested in malaria investigation and control. Ross regards the splenic index as by far the best measurement of malaria when large samples are taken, for the method can be applied to large numbers, and this reduces in corresponding degrees the error due to random sampling. But even with small samples important information can be obtained. The spleen rates of schoolchildren in certain regions free from malaria as London were found to be about 1 per cent.<sup>2</sup> In villages in Java I found the rates to range from nil to as high as 90 per cent. plus where malaria was very severe. Barber and Coogle<sup>3</sup> have reported spleen rates of 5 taken in the South, with a parasite rate of 5.5 in Mitchell County, Georgia; the time of year was winter.

The spleen rates have been used to measure the degree of success in controlling malaria in certain districts. Thus, Watson<sup>4</sup> writes of rates rising from 3.7 to 58 when due to increased malaria, and to rates falling from 50 to 5 following antimalarial drainage works.

Swellengrebel-de-Graaf and Swellengrebel<sup>5</sup> show that splenic enlargement is much reduced in an epidemic region after quininization, and that the indexes will vary after antilarval and antiadult sanitation as well as after quininization. These investigators call attention to a place on the northern coast of Java in which the spleen rate is continuously high while the hospital rate fluctuates considerably. In Samarang, Java, the admissions in 1917 were high, but fell to zero the following year. The spleen rate rose from 80 to 90 and the parasite rate from 24 to 38. The authors believe that little value can be attached to hospital admissions as a measure of malaria. Here we have to consider the factors "malaria" and "sickness due to malaria" as affected by the disinclination of native people to seek hospital aid until they are moribund. There is a great difference between Chinese and Malays and Tamils in this respect.

In making the surveys in Brazil and the Orient, it was the rule to come to the village unannounced so that a good school attendance could be assured. The work

was always done with the help and the attendance of the local physician, administrative officer, alcalde or priest or other influential resident citizen, so as to gain their cooperation and to enlighten them as to the conditions in the locality. The school was visited and the pupils assembled, room after room. It was convenient to use one room for all the examinations.

#### SURVEY OF A BRAZILIAN VILLAGE

In the survey reported here, the village of B. M. was visited in a coffee district in the state of São Paulo. The village lies near the Rio Tiete in the center of a rich coffee-producing country with soil of the "terra roxa," or red loam clay type composed of decomposed diabase. The soil is not only satisfactory for coffee culture, but was found to be suitable for brick and tile making. This discovery led to an influx of Italian tile workers. Malaria broke out soon after the arrival of the brickworkers, and it is probable that the malady was introduced at that time, for it has been severe since that date in 1912.

We did not go there to discover malaria. The people were well aware of its presence in seasonal visitations from September to February, or during the warmer months of the Southern hemisphere. We desired to ascertain the amount of the disease; detect the mosquito carriers; locate the propagation areas, and, if possible, give the people some advice as to control.

The slope on which the village is situated rises from the river. The houses in the lower part of the town and the tile factories are located near the river, being separated from it by a bluff and flood plain about 100 meters (328 feet) in width. The higher part of the village extends away from the river, and is from 30 to 40 meters above river high water. The flood plain opposite the village widens out below and across the river, affording abundant breeding places suitable for anophelines. But the village is divided by a stream through it at right angles to the river and emptying into it. The river is separated from the village by a small bluff, about 30 meters in length and emerging from the low lying flood plain. Between it and the town are some borrow-pits and ditches situated near the tile works. Into these borrow-pits there is some seepage water usually productive of anopheline breeding. But these particulars were not seen until the larval survey was made the next day. When we arrived at the village, a hasty inspection was made in order to note rapidly, if possible, the type of problem in the village. It was suspected that mosquitoes might be breeding near the river margin or in the stream that flowed through the town and flowed into the river. Some might be rising from some unseen source farther away from the river. There were no ponds or water collections other than the stream seen in the village.

The school was visited without delay, and the nature of our examination was explained to the teachers. The school attendance, a very important point in malaria surveys, showed many absentees from malaria (72 per cent. being due to malaria, according to the physician), so that the findings, so far as the spleen rates are concerned, are an underestimation of the amount of malaria present among the children as a whole.

The children were reviewed as they passed before the examiners, when the spleen was examined, blood taken for hemoglobin percentage, and records made of the name, age, sex, palpability of the spleen, and hemoglobin. The location of the dwelling was approximately

1. Stephens and Christophers: *Practical Study of Malaria*, Liverpool, University Press, 1908, p. 211.

2. Ross, Christophers and Perry: *Ind. J. M. Res.* **1**: 385, 1914.

3. Barber and Coogle: *Pub. Health Rep.* **36**: 706-710 (April 8) 1921.

4. Watson, Malcolm: *Rural Sanitation in the Tropics*, New York, E. P. Dutton & Co., 1915.

5. Swellengrebel-de-Graaf, J. M. H., and Swellengrebel, N. H.: *Ann. Trop. Med. and Parasitol.* **14**: 41 (June) 1920.



oriented in regard to probable mosquito-breeding areas. A record of school attendance was made, and from a representative sample blood was taken for the parasite rate.

When a room was assembled, the teacher was examined first, if a man, and blood taken for hemoglobin and parasite rate "pour encourager les autres." A sturdy looking boy or placid girl was chosen to begin the examination of the children. Boys and girls were examined separately. The ages ranged from 6 to 14. There was no preliminary consultation of parents. The girls were reassured by the presence of their teacher, who arranged the dress to facilitate in the palpation of the spleen. The work was facilitated by gaining the cooperation of teachers, who assembled the children, put them through the test with expedition, and saw to

the children from whom blood specimens were taken had positive spleens. The plasmodium was nearly always that of tertian malaria.

In regard to the analysis of the malaria cases in respect to location of residence near presumptive

SPLEEN RATE OF THE SCHOOLCHILDREN EXAMINED  
AT B. M., MAY 1, 1919

	Number Examined	Spleen Positive	Per Cent.
Girls .....	78	26	33
Boys .....	72	40	55
Total .....	150	66	44

anopheline breeding places, the village as may be seen from the accompanying plan, was divided into an upper and lower half by a convenient street running through the village parallel with the river. Of the fifty-seven children who lived in the lower half of the town toward the river, forty-two, or 73.7 per cent., had palpable spleens, while of the ninety-three children who lived in the upper part of the town and beyond, only twenty-four, or 25.8 per cent., had palpable spleens. This pointed unmistakably to the river margin as the principal if not the sole focus of the malaria in the locality, and it appeared to eliminate the stream which ran through the village, as well as any possible place farther away from the river, as being of any real importance in contributing to the malaria of the community.

After leaving the school, we distributed test tubes among some of the liveliest of the boys with instructions for collecting anophelines in their homes. In the Orient this maneuver usually yielded important information as to the species of anophelines entering and biting in dwellings. The indications which we had received from the spleen census at the school were now utilized in a larval survey. Many propagation areas were found in the low places between the river and the town, along the flood plain and in the borrow-pits and ditches near the tile works. Here larvae of *Anopheles argyritarsis*, *A. tarsimaculata* and *A. albanus*, well known carriers of malaria, were found in great abundance. Fewer were found across the river.

The identifications were made at once by reference to the anatomic characters of the larvae as determined by microscopic examination, without the necessity of waiting for breeding out the adults.

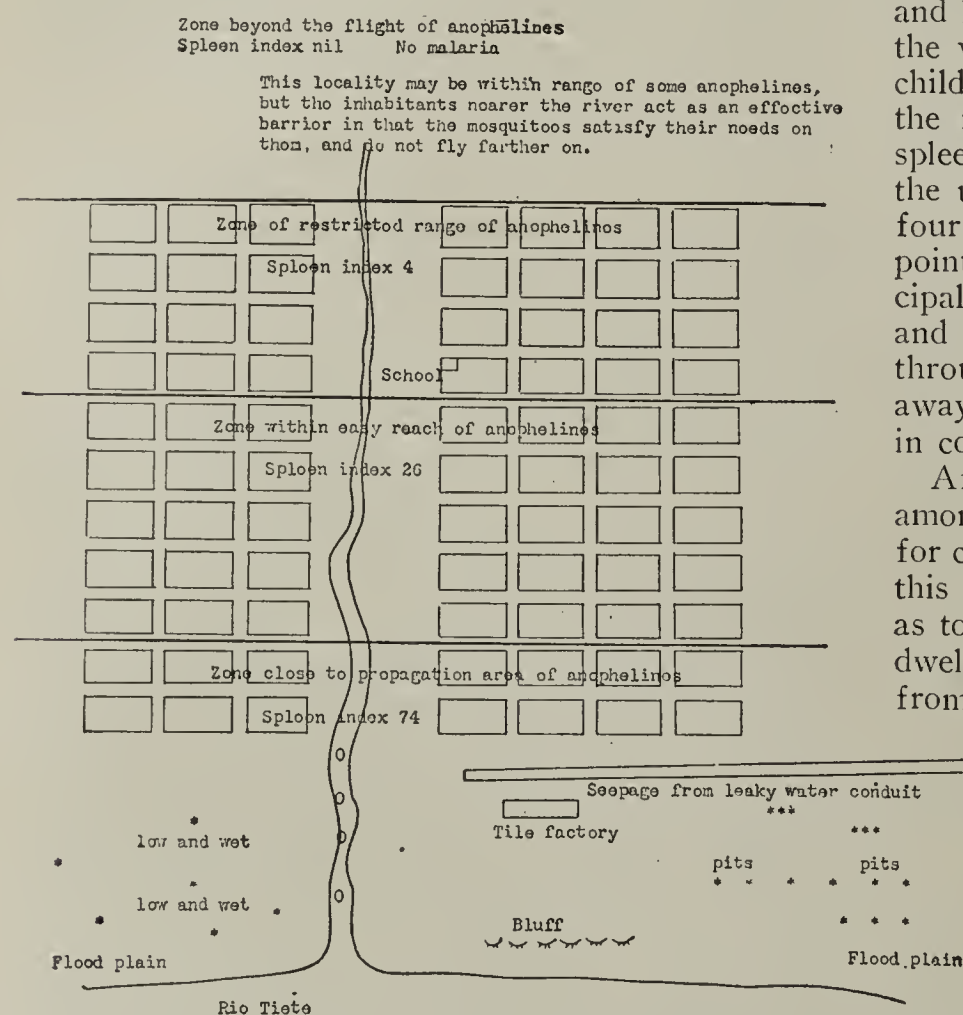
No breeding was taking place in the stream which ran through the village, for this, although it appeared to be a likely focus as we entered, turned out to be a

ENDEMIC INDEX OR PARASITE RATE

Sex	Number of Children	Number with Enlarged Spleens	Number with Positive Bloods	Per Cent. with Positive Bloods
Girls .....	15	6	3	20
Boys .....	24	15	10	41

drain for the village sewage, and was too foul to support anopheline species.

The larval survey then confirmed the indications obtained from our spleen examinations, since the propagation areas were found to coincide with the areas near the homes of the malaria-infected children. This



Plan of village: asterisks indicate region where larvae of *Anopheles tarsimaculata* were found; O indicates the stream which at first glance was noted as being a possible propagation area, but which later proved to be a sewage drain and unsuitable for anopheline production.

it that belts were removed, and clothing loosened, so that a large number could be examined without delay, and recorded the results of the examination.

After the examination and before the children were dismissed, they were segregated in different parts of the room, according to palpability of spleens, and as to location of dwelling place with regard to the river and the village stream. It was interesting and rather spectacular to note in this living graph that malaria as disclosed by the children with enlarged spleens corresponded with dwellings near the river margin and not with those near the village stream, or with any location behind the village.

In most instances the spleens were not greatly enlarged, being "palpable" or "one finger's breadth." In a few children the spleen was greatly enlarged. Only two children had fever at the time of the examination.

Blood specimens were not taken from every child, but only from representative age and sex groups. Half



was so interesting and important a demonstration that our survey led to control measures being instituted in the village by the state health department.

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## IMPROVED PHENOLTETRACHLORPHTHALEIN TEST FOR LIVER FUNCTION

IN PREGNANCY AND ITS TOXEMIAS\*

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AND

E. F. SCHNEIDERS, M.D.

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Realizing the importance of an accurate measure of liver function in the diagnosis, prognosis and treatment of toxemias of pregnancy, many investigators have tried to devise tests by means of which the functional capacity of the liver can be estimated under normal and pathologic conditions.

Various methods have been attempted. Examination of feces and urine for the presence or absence of stercobilin, bilirubin, urobilin and the biliary salts has its place and can be clinically applied to a certain degree. Determination of the glyco-genic and glycolytic functions, the proteolytic function, the proteopexic hemoclasia crisis test of Widal, and the various blood examinations have all been utilized with varying results. Based on the fact that the liver has important excretory as well as secretory powers, several coloring matters have been used, chief among which is phenoltetrachlorphthalein.

Abel and Rowntree,<sup>1</sup> by means of pharmacologic studies, determined that phenoltetrachlorphthalein is excreted almost entirely by the liver, and that when injected intravenously it is not toxic. Rowntree, Hurwitz and Bloomfield,<sup>2</sup> and Whipple, Mason and Peighthal<sup>3</sup> later employed it as an indicator of liver function, by determining the amount present in the stools during the twenty-four hours following its injection. Legitimate criticisms of this method are that it is not only time consuming and disagreeable, but also not reliable, in that quantitative stool collections are frequently inaccurate indexes of the entire intestinal contents. Furthermore, the dye may be reabsorbed from the large intestine and reexcreted by the liver. Utilizing the Meltzer-Lyons duodenal tube method of bile drainage, Aaron, Beck and Schneider<sup>4</sup> recently estimated the phenoltetrachlorphthalein elimination in the bile. Williams,<sup>5</sup> using the same method, reports

the results of observation on a series of normal pregnant women, with fairly constant end reactions, and also several pathologic cases with variable results, in which liver damage might reasonably have been suspected. The latter method at best is uncomfortable to the patient and undoubtedly impossible to perform at times, particularly in cases in which there is pernicious vomiting; moreover, varying amounts of bile escape around the duodenal tube and pass down the intestine, making quantitative values uncertain.

Since it has been observed that the liver is practically the only organ involved in the elimination of phenoltetrachlorphthalein, and because the dye appears in the urine only when there is impaired output in the stools, Rosenthal<sup>6</sup> concluded that, after the injection of the dye intravenously, there should be a retention in the blood if liver function is impaired. In a series of experiments on dogs he showed a definite retention of the dye in the blood of those animals in which liver destruction, as indicated by jaundice of the sclera, bile in the urine, and similar changes, had been produced by means of prolonged chloroform anesthesia. He later applied this improved test clinically, injecting the dye intravenously and withdrawing blood at varying intervals and determining the amount of dye

present in the plasma.<sup>7</sup> The same test has been used in this series of normal and toxic pregnancies, the procedure here described having been carried out:

The patient was weighed, and the amount of phenoltetrachlorphthalein to be injected was determined on the basis of 5 mg. of dye for each kilogram of body weight. (One cubic centimeter of the standard product as manufactured by Hynson, Westcott & Dunning contains 50 mg. of the disodium salt).

The apparatus that was used consisted of *A* (Fig. 1) a 30 c.c. syringe; *B*, a 10 c.c. syringe; *C*<sub>1</sub>, *C*<sub>2</sub>, *C*<sub>3</sub>, a three-way stopcock with attached tubing; small test tubes, and *E*, a flask containing warm physiologic sodium chlorid solution.

The required amount of dye having been drawn into syringe *A*, rubber tubing *C*<sub>1</sub> is attached and the dye diluted with warm physiologic sodium chlorid solution from flask *E* through tubing *C*<sub>2</sub>, thus forcing the air from *C*<sub>2</sub>. Tubing *C*<sub>3</sub> is then placed in the flask, and *C*<sub>2</sub> removed. With the patient in the recumbent position, and a suitable vein having been selected, the part is prepared locally with alcohol and iodine, and from 4 to 5 c.c. of blood is withdrawn. The serum from this blood is to be used as the control. Leaving the needle in situ, the syringe is disconnected, the tubing *C*<sub>2</sub> attached and the diluted dye injected slowly into the vein, and at the end of the injection the time is noted. The small amount of dye remaining in the syringe and connections is then washed into the vein with approximately 50 c.c. of saline solution, and the needle is withdrawn. By means of the smallest hypodermic needle attached to a clean 10 c.c. syringe, from 4 to 5 c.c. of blood is withdrawn from a vein in the opposite arm at intervals of fifteen minutes, one hour and two hours from the time of injection of the dye. (The opposite arm is used so as to avoid the possibility of contamination with any dye that might have escaped about the site of the initial injection.) The various specimens of blood, which have been collected in labeled test tubes, are allowed to cool for about an hour, during which period the clot retracts.

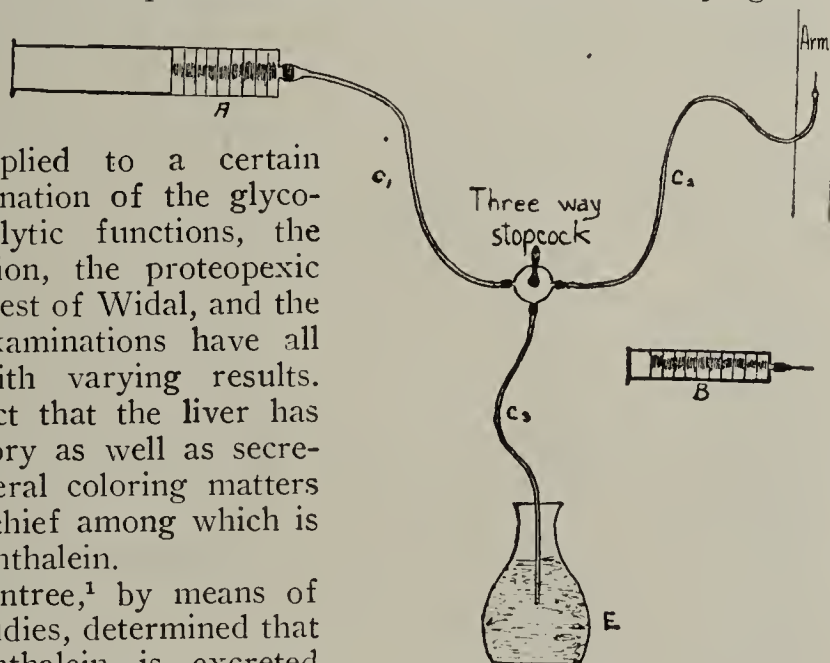


Fig. 1.—Apparatus.

\* Read before the Cosmopolitan Medical Club, December 16, 1922.

\* From the Department of Gynecology and Obstetrics, Boston City Hospital.

1. Abel and Rowntree: *J. Pharmacol. & Exper. Therap.* **1**: 233, 1909.

2. Rowntree, Hurwitz and Bloomfield: *Bull. Johns Hopkins Hosp.* **24**: 327, 1913.

3. Whipple, Mason and Peighthal: *Bull. Johns Hopkins Hosp.* **24**: 207, 1913.

4. Aaron, A. H.; Beck, E. C., and Schneider, H. C.: The Phenoltetrachlorphthalein Test for Liver Function, *J. A. M. A.* **77**: 1631 (Nov. 19) 1921.

5. Williams, P. F.: Phenoltetrachlorphthalein Test for Liver Function in Pregnancy, *Am. J. Obst. & Gynec.* **4**: 26 (July) 1922.

6. Rosenthal, S. M.: An Improved Method for Using Phenoltetrachlorphthalein as a Liver Function Test, *J. Pharmacol. & Exper. Therap.* **19**: 385 (June) 1922.

7. Rosenthal, S. M.: A New Method of Testing Liver Function with Phenoltetrachlorphthalein, *J. A. M. A.* **79**: 2151 (Dec. 23) 1922.



They are then centrifuged at high speed, and the clear serums are removed to labeled tubes.

Standards for colorimetric comparisons are then prepared. According to Rosenthal, there would be an amount of dye in the blood stream comparable colorimetrically to 10 mg. of dye in 100 c.c. of water if there occurred no elimination after the injection of 5 mg. of dye for each kilogram of body weight. This, therefore, has been used to represent the 100 per cent. standard. From this standard solution, 50 and 25 per cent. dilutions are prepared, to each of which is added three drops of 5 per cent. sodium hydroxid solution to bring out the full color. The normal standards for colorimetric comparisons are thus prepared:

- 0.4 c.c. of control serum + 0.1 c.c. of 50 per cent. solution: 10 per cent. control
- 0.4 c.c. of control serum + 0.1 c.c. of 25 per cent. solution: 5 per cent. control

In like manner, whenever indicated, standards of varying strengths are prepared. To 0.5 c.c. of each standard and to

We have applied this test to a series of pregnant women, both normal and toxic. It seems inadvisable to attempt in a paper of this scope to enter into full case history reports, so for the sake of brevity and for the ease of comparison, we shall attempt to classify and group the various cases according to their clinical pictures.

NORMAL PREGNANCIES

The group of normal pregnancies is composed of patients in the third trimester in whom there were no symptoms or clinical findings referable to any toxemia of pregnancy. We have included in this series one case of pregnancy complicated by asthma and another case complicated by pyelitis. In view of the fact that the normal curve for nonpregnant patients shows from 3 to 7 per cent. of the dye present in the blood stream fifteen minutes after injection, and

TABLE 1.—OBSERVATIONS IN NORMAL CASES OF PREGNANCY

Patient	Age	Preg-nancy	Month	Blood Pressure	Urine	Date	Percentage of Dye in Serum			Comment
							15 Min.	1 Hr.	2 Hr.	
1. C. D. ....	29	Seventh	8½	115/75	Negative	9/25/22	5	½	0	Normal clinical history; normal curve
2. T. D. ....	32	Fourth	7	120/80	Negative	10/ 7/22	5	0	0	No toxic symptoms; normal curve
3. L. W. ....	24	First	8½	110/75	Negative	11/28/22	5	0	0	Frequent asthmatic attacks; otherwise normal pregnancy; normal curve
4. C. B. ....	25	Second	7	120/70	Alb., L. T.; numerous W.B.C.; clumps	11/19/22	5	½	0	Pyelitis + pregnancy; normal curve
5. L. C. ....	18	First	8½	120/80	Negative	11/22/22	7	1	0	No toxic symptoms; normal curve
6. A. M. ....	20,	First	8	110/75	Negative	10/19/22	6	3	0	Normal clinical history; slight delay in 1 hour

TABLE 2.—OBSERVATIONS IN CASES OF NEUROTIC AND TOXIC VOMITING

Patient	Age	Preg-nancy	Month	Blood Pressure	Urine	Date	Percentage of Dye in Serum			Comment
							15 Min.	1 Hr.	2 Hr.	
7. L. S. ....	22	Second	2	110/74	Negative	11/20/22	7-8	1-2	0	Neurotic type showing practically normal curve
8. E. R. ....	27	Third	3	95/70	Albumin, S. T.; acetone, 0	9/26/22	9	½-1	0	Essentially as above
9. B. C. ....	21	First	3	136/86	Albumin, 0; acetone, 0	11/ 7/22	11	7	2	Moderate impairment of liver function
10. H. L. (a).....	20	First	5½	110/80	Albumin, S. P. T.; acetone, 0	10/17/22	10	4	1	Essentially as above
(b).....	..	.....	...	115/80	Negative	11/ 2/22	7	1	0	Normal curve following treatment
11. A. S. (a).....	18	Second	3½	95/75	Albumin, 0; diacetic, +; acetone, S. P. T.	11/13/22	7	9	3	Moderate impairment of liver function
(b).....	..	.....	...	110/85	Negative	11/22/22	6	1	0	Normal curve following treatment
12. A. C. ....	36	Fourth	2½	98/70	Albumin, S. T.; diacetic, +++; acetone, ++	9/ 5/22	12	12	5	Marked severe impairment of liver function
13. J. C. (a).....	28	Third	2½	116/70	Albumin, V. S. T.; acetone and diacetic, F. P. T.	10/12/22	4	3	0	Slight impairment of liver function
(b).....	..	.....	...	110/70	Acetone and diacetic, S. P. T.	10/17/22	9	4	0	Moderate impairment of function
(c).....	..	.....	...	105/68	Diacetic, + acetone, +	11/ 2/22	7	3	..	Slight improvement; clinical picture improved
(d).....	..	.....	...	98/65	Albumin, S. P. T.; diacetic, +++++; acetone, +++++	11/ 9/22	12	9	7	Very marked impairment of liver function
(e).....	..	.....	...	94/65	Acetone, ++; diacetic, ++	11/15/22	13	14	10	Severe impairment (dangerously ill)
(f).....	..	.....	...	100/70	Albumin, S. P. T.; acetone, 0; diacetic, 0	11/22/22	9	4	½	Marked improvement of liver function (clinical picture improving)
(g).....	..	.....	...	108/75	Negative	12/10/22	4	½	0	Normal curve following subsidence of symptoms

each of the serums mentioned, three drops of 5 per cent. sodium hydroxid solution is added. The percentage of the dye present in the blood at the various intervals is then determined by colorimetric comparison of the various serums with the standards.

After applying this test to a series of patients in whom no hepatic derangement was demonstrable clinically, Rosenthal<sup>7</sup> determined that a normally functioning liver will remove from the blood stream all but from 3 to 7 per cent. of the dye in fifteen minutes after injection, and that, in one hour, removal of the dye is complete. On further application of this test, he obtained results which proved definite retention of the dye in persons with obvious liver damage, as indicated clinically as well as by postmortem findings.

0 per cent. at the end of one hour, Table 1 shows that practically all of our so-called normal cases of pregnancy fall within these limits.

These results, although few in number, suggest that the so-called "liver of pregnancy" with its various physiologic changes shows no actual impairment of function as evidenced by this test, and that the normal curve for nonpregnant cases may also be used to represent the normal curve during pregnancy. Conclusions to this effect, however, must await similar results in a large series of cases.

NEUROTIC AND TOXIC VOMITING

Under the heading of neurotic and toxic vomiting are grouped the cases in which vomiting has been the



predominant symptom. Several of these patients have shown such definite changes in their degree of liver function impairment, coinciding with the clinical manifestations, that it seems advisable to discuss them separately.

CASE 7.—L. S., at the fifth week of pregnancy, had a four day period of excessive vomiting, which ceased on the day of admission. She was discharged well; no vomiting had occurred four days later. The test curve was virtually within normal limits.

CASE 8.—E. R. began vomiting when five weeks pregnant, and continued for twenty days, with associated headaches. Vomiting ceased after two days of starvation treatment. The test on the day of entrance showed a slight increase in fifteen minutes, but a normal level in one hour.

CASE 9.—B. C. was four months pregnant, and had vomited somewhat excessively for the last three months, associated with frequent headaches and dizzy spells. There was no appreciable loss of weight, and the general condition appeared fair. The test showed an elevated curve suggesting impairment of liver function. The patient refused admission to the hospital, and could not be followed further.

CASE 10.—H. L., when two months pregnant, was treated in the Homeopathic Hospital for excessive vomiting. She was discharged well after nine days. She entered Boston City Hospital when five and a half or six months pregnant with a history of excessive vomiting for two weeks prior to entrance, and vomitus containing blood streaks for the last two days. The vomiting ceased after four days of treatment. The test on entrance showed a moderate impairment of hepatic function (10 a).

The patient returned for another test, feeling well, with no vomiting for three weeks. The test curve was within normal limits (10 b).

CASE 11.—A. S., admitted, November 12, about three and one-half months pregnant, with a history of severe headaches, blurring of vision, and excessive vomiting for twelve days, was unable to retain anything by mouth. The general condition was fair; the face, drawn; the tongue, moist; pulse, 94. The test on entrance (11 a) showed definite impairment of liver function.

The patient improved rapidly under treatment, vomiting ceased, and she was ready for discharge, November 22, when the test curve (11 b) showed evidence of a normally functioning liver. The patient was seen again three weeks later, feeling perfectly well.

CASE 12.—A. C., admitted, September 1, had had her last period, June 15. There had been pernicious vomiting for five weeks prior to admission. Therapeutic abortion was performed at home four days prior to entrance, but vomiting persisted.

A test, September 5, showed evidence of severe liver function impairment.

September 6, vomiting became aggravated, and the sclerae showed a faint tinge of jaundice. Dilation and curettage was performed, with liberation of a small amount of placental tissue, but the patient died shortly afterward.

CASE 13.—J. C., admitted, Oct. 12, 1922, had had her last period, August 6. She had vomited considerably for the last two weeks, especially during the last three days. The general condition was good; the pulse, 84.

A test on entrance showed slight delay in the one hour specimen (Curve A, Fig. 2).

October 17, the patient was somewhat worse than on entrance; she vomited considerably. She was given rectal feedings almost exclusively. A test indicated moderate functional impairment (Curve B).

November 2, definite improvement was recorded. There was very little vomiting. The patient had been out of bed for the last few days. The test curve was somewhat lower than the previous one, indicating some improvement (Curve C).

November 9, it was noted that for the last five days the patient had rapidly become more toxic, vomiting very frequently. The pulse varied from 100 to 104. The test curve was much elevated over previous curves, suggesting marked liver function impairment (Curve D).

November 11, there was jaundice of the sclera, which became somewhat more marked, November 14. The patient was much worse, very irritable and apprehensive. There was evidence of a definite toxic psychosis. She was placed on the dangerous list. The pulse ranged from 116 to 120. The systolic blood pressure was 96; the diastolic, 60. The test indicated severe impairment of liver function (Curve E).

By November 22, marked improvement had taken place. The patient was rational and felt well. She was placed on the full house diet. There was no vomiting. The test curve had dropped markedly, showing marked improvement of liver function (Curve F).

The patient was discharged from the hospital, November 28, and had felt very well since then. The test curve, December 10, was normal (Curve G).

Study of Table 2 and the accompanying case reports suggests that in cases of toxic vomiting there is a very definite relation between the degree of toxicity of the patient, as evidenced by the clinical picture, and the degree of functional impairment of the liver, as evidenced by

this test. This is clearly demonstrated in Case 13, in which there occurred several fluctuations in the degree of toxicity, with corresponding variations in the test curves.

In one instance the test showed functional impairment somewhat more severe than the accompanying clinical picture would indicate. This, however, was followed in a few days by definite jaundice, toxic psychosis and, in general, a markedly aggravated picture. The question, therefore, arises as to whether it may not be possible by means of this test to anticipate the clinical picture and to institute proper therapeutic measures at an earlier period. The question also arises as to whether considerable aid might not be obtained in differentiating the neurotic type from toxic cases by means of this test, as we have found that in the few cases studied in which the outcome and the general course of the clinical picture warranted the former diagnosis, the functional capacity of the liver was little, if at all, impaired.

#### HYPERTENSION GROUP

Cases of hypertension, in several of which apparently there were frank renal pathologic changes as a basis, are included in this group with preeclamptic and

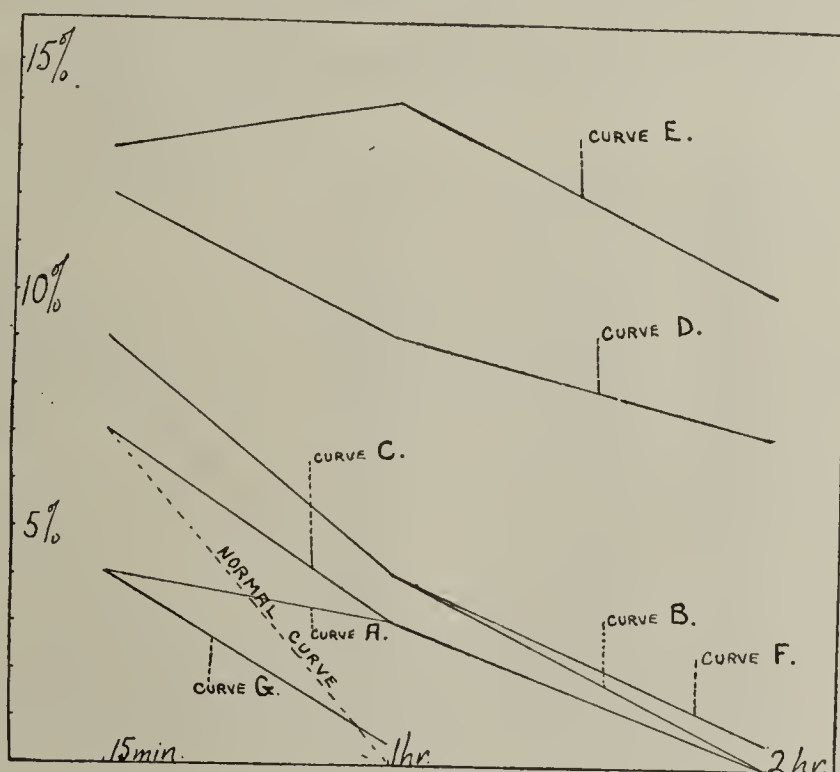


Fig. 2.—Test curves throughout clinical course in Case 13.



eclamptic cases. The majority of the cases are pre-eclamptic, in which relief of symptoms occurred following treatment or delivery.

CASES 14 and 15.—Both patients were from six to seven months pregnant, and their blood pressures ranged from 130 to 150, systolic, and from 90 to 100, diastolic. There was occasional slight blurring of vision with no other toxic symptoms. Tests in each case showed very slight impairment of function.

CASE 16.—A. F. was followed in the outpatient department of the Boston Lying-In Hospital, where she was treated for hypertension. The blood pressure ranged between 140 and 180, and she experienced occasional headache and blurring of vision. She was referred to the house because of hypertension. Examination of the urine revealed a trace of albumin. Test *a*, prior to delivery, showed evidence of definite impairment of liver function. Test *b*, taken one week after delivery, was within normal limits. The blood pressure has been normal since delivery (130 systolic, 90 diastolic).

CASE 17.—R. C. was treated in the outpatient department for hypertension for the last six weeks. There had been

hospitalization. Blood pressures taken at frequent intervals varied from 128 to 150.

December 11, the systolic blood pressure varied from 140 to 160, and the diastolic from 96 to 106. There was definite accentuation of symptoms. The patient was delivered of a living baby by means of low forceps.

December 24, the patient felt perfectly well. The blood pressure had ranged from 116 to 120 for the last ten days. The test curve was within normal limits.

CASE 19.—L. K., admitted, November 22, had had occasional nausea. There had been slight edema of the lower extremities for several months. There were occasional bright spots before the eyes. The blood pressure for a few months had been around 130 and 136 systolic.

A test done November 19 showed slight impairment of function. The patient entered the hospital six days later, November 25. Convalescence was uneventful except that the blood pressure remained somewhat elevated.

Dec. 5, 1922, the test curve was normal.

CASE 20.—J. M. was admitted, Nov. 23, 1922, in a comatose condition with a history of having had one convulsion. A negative history was obtained from the family with exception

TABLE 3.—OBSERVATIONS IN HYPERTENSION GROUP

Patient	Age	Preg-nancy	Month	Blood Pressure	Urine	Date	Percentage of Dye in Serum			Comment
							15 Min.	1 Hr.	2 Hr.	
14. I. J. ....	22	Third	7	138/90 to 150/90	Albumin, S. T.; acetone, 0	11/23/22	8	2	F.P.T.	Very slight impairment of liver function
15. M. G. ....	20	First	6½	130/70 to 150/100	Albumin, S. P. T.	11/20/22	7	2	0	Very slight impairment
16. A. F. (a)....	31	Fourth	9	155/100	Albumin, T.	11/ 7/22	10	5	..	Moderate impairment of liver function
(b).....	..	.....	...	130/90	Negative	11/15/22	5	½	..	Normal curve following delivery
17. R. C. (a)....	39	Sixth	7	150/90	Albumin, L. T.	11/13/22	10	5	½-1	Moderate impairment
(b).....	..	.....	...	130/70	Negative	11/23/22	7	1	0	Normal curve following delivery
18. T. W. (a)....	18	First	8	150/100	Albumin, T.	11/15/22	12	4	2	Moderate impairment of liver function
(b).....	..	.....	...	144/95	Albumin, T.	11/22/22	12	6-7	2-3	Impairment slightly more marked
(c).....	..	.....	...	145/95	Albumin, T.	12/ 5/22	14	6	2	About the same as above
(d).....	..	.....	...	120/80	Negative	12/24/22	7	0	0	Normal curve following delivery
19. L. K. (a)....	28	Fourth	9	134/80 to 150/95	Albumin, T.	11/19/22	7	5	1	Moderate impairment
(b).....	..	.....	...	135/80	Albumin, S. T.	12/ 5/22	6	0	0	Normal curve following treatment
20. J. M. (a)....	32	First	9	170/105	Albumin, L. T.; casts, ++	11/23/22	16	14	6?	Very marked impairment of liver function
(b).....	..	.....	...	185/105	Albumin, L. T.; casts, +++	11/26/22	11	5	1	Impairment much less severe
21. M. B. ....	24	Third	9	215/120	Albumin, L. T.; casts, +++	11/16/22	15	9	5	Very marked impairment
22. A. M. (a)....	19	First	9	150/96	Albumin, L. T.; casts, 0	11/28/22	11	7	5	Marked impairment of liver function
(b).....	..	.....	...	128/100	Albumin, L. T.; casts, +	12/ 2/22	9	9	7	Impairment more marked (patient having convulsions)
(c).....	..	.....	...	118/75	Negative	12/14/22	9	½	0	Practically normal curve following delivery

edema of the ankles for the last two months, but no headaches or visual disturbances. There had been epigastric pains and edema of the hands for the last two weeks. The patient was referred to the house. The systolic blood pressure was 150; diastolic, 90. Urine examination disclosed a large trace of albumin.

Test *a* showed definite evidence of impaired function. Precipitate premature delivery occurred the following day, and the blood pressure remained about 130 systolic and 70 diastolic for the following week. Test *b*, taken nine days post-partum, showed a normal curve.

CASE 18.—T. W. entered the hospital, Nov. 15, 1922, at about the end of the eighth month of pregnancy, with a history of moderate nausea and occasional vomiting, and dizziness during the last month. The systolic blood pressure on entrance was 150; diastolic, 100. A large trace of albumin was present in the urine. There were no casts. There was moderate edema of the ankles.

The test showed moderately severe impairment of liver function.

Definite improvement in the general condition occurred during the week ending November 22, with relief of symptoms to such a degree as to warrant discharge to the outpatient department. The test done preliminary to discharge, however, showed liver function impairment as severe as at entrance. The blood pressure again was elevated. The patient was advised to remain in the hospital.

December 5, the test showed results quite similar to previous curves. The clinical picture in general warranted

of moderate edema of several months' duration. The patient apparently was at term. The fetus was apparently dead in utero. It was said that the patient had been in labor for the last thirty-six hours. The cervix, however, was not dilated. A bag was employed, and eliminative measures were instituted. The test showed severe liver function impairment. The patient was delivered of a dead fetus, partially macerated.

November 24, the general condition was much improved.

November 26, the patient's general condition was very poor. There were evidences of nephritic involvement of a severe degree. The blood pressure was high; edema was increasing. The patient evidently was dangerously ill.

The test curve showed much improvement of liver function, although clinically the patient was dying of nephritis. This suggests that there is a possibility that this test may become of value in differentiating between nephritis and eclampsia.

CASE 21.—M. B. was admitted, Nov. 16, 1922, with a history of having felt perfectly well up to about ten days before, when she began to have abdominal pain, frequent micturition, and moderate edema of the ankles. She had had headache for the last two days, and increasing edema and slight nausea and vomiting on the day of admission. The blood pressure was from 210 to 220. The patient was at term; the fetus was apparently dead in utero. Eliminative measures were instituted.

The test showed marked functional impairment.

The patient gradually became more confused and mentally torpid, and had severe convulsions in rapid succession. She was delivered of a dead fetus. Cardiac embarrassment and



pulmonary edema intervened, and the patient died on the following day.

CASE 22.—A. M., who was about at term, entered the hospital, Nov. 28, 1922, with a history of edema of the legs for the last two weeks. She had felt very well throughout pregnancy. The blood pressure was 154 systolic and 96 diastolic. Examination of the urine disclosed a large trace of albumin. There were no casts.

The test showed marked impairment of function, suggesting greater toxicity than the clinical picture indicated.

By December 2 there was marked improvement of the clinical picture. Edema was almost gone. The systolic blood pressure ranged from 128 to 136, and the diastolic from 76 to 84. The urine was almost free of albumin. The patient had been feeling very well until suddenly, on the morning of December 2, after feeling slightly confused, she had a convulsion. Rigorous treatment was instituted, a bag was employed, and the patient was delivered later by low forceps of a living baby.

The test was done between convulsions, and injection of the dye was followed with 500 c.c. of intravenous saline solution after venesection which undoubtedly diluted the dye somewhat; but still the test curve showed marked impairment of function.

December 14, excellent convalescence had occurred. The test curve was within normal limits.

Table 3, with the accompanying test curves and case reports, indicates that there has been liver function impairment in every case in which there has been sufficient clinical evidence to warrant a diagnosis of preeclampsia or eclampsia. Whenever the clinical picture showed a considerable degree of toxicity, curves have been obtained which indicate corresponding degrees of impairment of liver function. In several instances, however, the test has indicated degrees of toxicity more severe than the corresponding clinical picture suggested (Cases 18 and 22). Further developments in these cases, however, showed definite accentuation of clinical symptoms suggesting that the test curve preceded the clinical picture in evidencing toxicity.

Hourly blood pressure determinations in cases of preeclamptic toxemia have shown variations at various intervals, fluctuating from considerable degrees of hypertension to approximately normal levels within short periods of time, in cases in which the test curve has consistently shown definite impairment and in which subsequent developments proved definite marked toxicity. This suggests that greater reliance might be placed on this test than on blood pressure determinations or other variable clinical symptoms. Whenever, in cases of toxemia, the patients have been relieved from symptoms, either by treatment or by delivery, the test curves have fallen to normal limits, showing rapid return to normal liver function. The time required in these cases apparently varies directly with the degree of liver impairment.

#### COMPOSITE CURVES

Figure 3 is composed of composite curves which have been compiled from readings obtained in the entire series of cases.

Curve  $A^2$  represents our normal curve, and is based on results obtained from our series of normal pregnancies. This curve is seen to coincide, for all practical purposes, with Curve  $A^1$ , the normal curve for normal nonpregnant cases.

Curve  $B^1$  is based on tests in so-called toxic vomiting cases, all cases in this series in which vomiting was a predominant symptom.

Curve  $B^2$  is based on the same cases as  $B^1$  after the patients were clinically relieved.

Curve  $C^1$  is based on results obtained in cases in which hypertension was a predominant symptom. The majority of these cases were of preeclampsia and eclampsia.

Curve  $C^2$  is based on the same cases as  $C^1$ , following relief of symptoms subsequent to treatment or delivery.

Figure 3 demonstrates graphically that toxic cases of pregnancy show definite liver function impairment, and that subsequent to relief from the toxic symptoms there is return of liver function to normal limits.

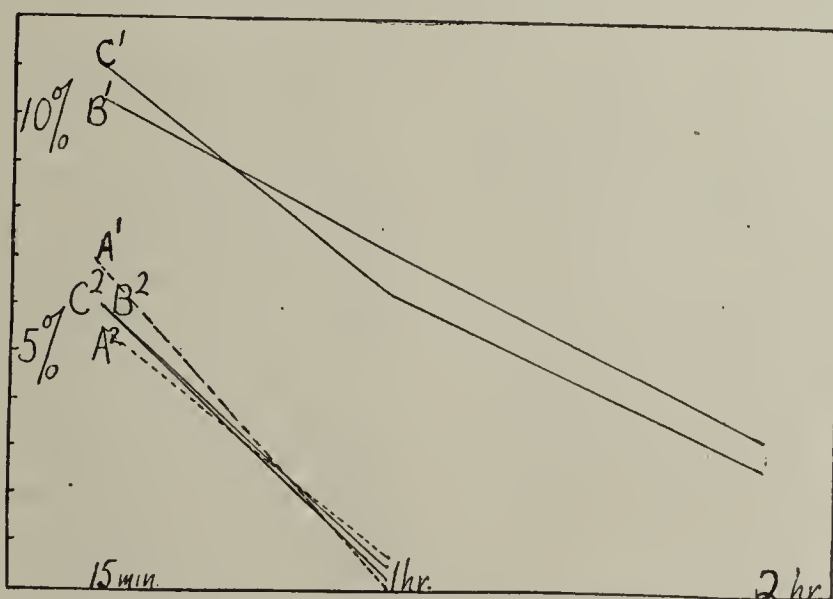


Fig. 3.—Composite curves:  $A^1$ , normal curve for nonpregnant patients;  $A^2$ , curve in normal pregnancies;  $B^1$ , curve in cases of toxic vomiting;  $B^2$ , curve in same cases as  $B^1$ , after relief of symptoms;  $C^1$ , curve in cases of hypertension, including preeclampsia and eclampsia;  $C^2$ , curve in same cases as  $C^1$ , after relief of symptoms.

#### SUMMARY

The phenoltetrachlorophthalein test, as described in the foregoing, has been used to measure liver function both in normal and in toxic cases of pregnancy.

Normal cases of pregnancy show a curve coinciding with that of normal nonpregnant cases, suggesting that the so-called "liver of pregnancy" with its various physiologic changes shows no actual impairment of function.

Toxemias of pregnancy, including eclampsia, show a definite relation between the degree of liver impairment,

as measured by this test, and the degree of toxicity, as evidenced by the clinical picture.

Results obtained in several cases suggest that this test is a more accurate index of existent toxicity than variable clinical symptoms are, and that it may be possible by means of this test to anticipate the clinical picture in forming an opinion as to the degree of toxicity existent at a given time.

Toxemias of pregnancy, including eclampsia, show definite liver impairment, and subsequent to relief from toxic symptoms there is a return of liver function to normal limits.

We believe that this test gives a quantitative index of functional capacity of the liver, and that in the toxemias of pregnancy it will aid greatly in serving as an index of treatment and will assist in determining the time at which therapeutic abortion or induction of labor should be performed in cases in which these measures may become necessary.

**Mysticism.**—We must, after all, come to terms in some way with the emotions underlying mysticism. They are very dear to us, and scientific knowledge will never form an adequate substitute for them. No one need fear that the supply of mystery will ever give out; but a great deal depends on our taste in mystery; that certainly needs refining.—Robinson: *The Mind in the Making*.



## THE INTRACUTANEOUS GUINEA-PIG TEST (KELLOGG)

FOR HUMAN SUSCEPTIBILITY AND IMMUNITY  
TO DIPHTHERIA

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Since the publication of an article<sup>1</sup> describing a new test for the determination of immunity and susceptibility to diphtheria, opportunity has been afforded to check this method against the Schick test under a variety of conditions, and this experience with nearly 200 comparative tests prompts the offering of a second paper on the subject.

Some of the results of parallel tests, and the conclusions reached, more properly form material for a discussion of the Schick test, because they pertain chiefly to experiences in the practical application of the latter. These observations will, therefore, be left for discussion elsewhere. The Kellogg test, for so it has come to be known for want of any other short appellation, is, briefly, the injection into the skin of a white guinea-pig of a mixture of equal parts of blood serum from the person tested and a toxin dilution containing one thirtieth of the L + dose per cubic centimeter. If the patient's serum contains exactly  $\frac{1}{30}$  unit of antitoxin for each cubic centimeter (the amount stated by Schick as being protective), 0.1 c.c. will contain  $\frac{1}{300}$  unit of antitoxin. Two-tenths cubic centimeter of the mixture of serum and toxin will, therefore, contain  $\frac{1}{300}$  unit of antitoxin and  $\frac{1}{300}$  L + dose of toxin.

The combining ratio of these substances is such that there will be free in the mixture  $\frac{1}{300}$  minimal lethal dose of toxin, which is just sufficient to produce redness without necrosis in the skin of the guinea-pig. This degree of reaction, as also anything less, constitutes a negative result and indicates immunity.

If necrosis appears, there is less than  $\frac{1}{30}$  unit of antitoxin per cubic centimeter in the serum, and the subject is not immune. However, serum frequently contains antitoxin in quantities insufficient to give a negative Schick reaction or to afford protection, yet these minute quantities modify somewhat the intensity of the positive reaction on the guinea-pig. Experience with these varying degrees of positiveness, when produced with known amounts of antitoxin, enables us to judge roughly the amount of antitoxin present in routine tests. No experience is needed, however, to decide between cases that have  $\frac{1}{30}$  unit or more of antitoxin (negative) and those that have markedly less than  $\frac{1}{30}$  (positive) for the reason that the criterion is the presence or absence of a breaking down of the epithelial layer, with blackening. This is observed frequently on the second day, but sometimes not till the third day, over the central portion of the red area. This red area develops in a few hours in all tests except in those with serum containing  $\frac{1}{25}$  unit or more of antitoxin per cubic centimeter, in which case no reaction results. When no antitoxin, or only traces, are present, there is usually observed a small dead white spot in the center of a red area at the end of twenty-four hours. This means commencing necrosis, and the outcome (a positive reaction) is now a foregone conclu-

sion, and may be so reported. A little more antitoxin may prevent this early blanching, and in this event we may be unable to determine the reading until the second day. Occasionally it is necessary to wait until the third day for the development of necrosis, but not often. The progress of the positive reaction is characterized by this sequence of events:

An area, bright red, and from 15 to 20 mm. in diameter, forms within a few hours. In twenty-four hours, there is usually observed a central white spot which is premonitory of necrosis. In from forty-eight to seventy-two hours the area of the central white spot has enlarged and commenced to brown in the center, leaving a margin of white necrotic epithelium as a border beyond which the red zone extends. This brownish area shows a breaking down of the superficial layers of the skin with slight serous exudation, rapidly drying to form the brown and later black scab. A second white ring is common and is quite characteristic, giving the so-called target appearance. In from seventy-two to ninety-six hours the brown area has become black. This black spot is a scab which is detached in a few days. Milder degrees of necrosis are seen, but no difficulty is experienced in deciding the question if the decision is deferred to the third or fourth day, as even slight necrosis will by this time have resulted in a scab which is unmistakable even though not as black as in the total absence of antitoxin. When the reaction is definite and bright red at the end of twenty-four hours, but progresses no further, showing signs of regression in forty-eight hours, the amount of antitoxin present in the patient's serum is very close to  $\frac{1}{30}$  unit per cubic centimeter. The guinea-pig is never sensitized to the proteins of diphtheria toxin; consequently, pseudoreactions never occur. One half of the reactions can be read definitely in twenty-four hours. Most of the remainder are conclusive in another twenty-four hours. A very few have to wait seventy-two hours for final reading.

In practice we have found that the skin reaction is qualitative rather than quantitative, and that 0.1 c.c. gives exactly the same type of reaction as 0.2 c.c., except that it is smaller in area. Our routine method now is to draw into the syringe  $\frac{3}{20}$  c.c. of the serum-toxin mixture, which allows for some loss in injecting, and still gives us 0.1 c.c. in the skin.

While the injection is made intracutaneously, as in the Schick test, the consequences of unskilful technic in making the injection are not as serious as in the latter test. It is impossible to *bury* the reaction by too deep an injection, because the amount of toxin present in a mixture giving rise to a positive reaction is from four to ten times as much as is injected in the Schick test. According to Park,<sup>2</sup> in several hundred Schick tests applied to both arms, 2 per cent. showed the reaction on only one arm, the explanation presumably being that in the failures the injection was placed too deeply.

Blood specimens may be sent by mail to laboratories performing the test, as the antitoxin content of the serum is very stable. Only 0.1 or, at most, 0.2 c.c. of serum is required, so that 0.5 c.c. of blood is all that need be collected. This amount can easily be obtained by pricking the lobe of the ear with a needle or small lance; but many will prefer to take the blood from a vein with a hypodermic syringe.

The toxin is conveniently kept ready for quick and accurate dilution by adding pure neutral glycerin to

1. Kellogg, W. H.: A Test for Diphtheria Immunity and Susceptibility, J. A. M. A. 78:1782 (June 10) 1922.

2. Park, W. H.: Toxin-Antitoxin Immunization Against Diphtheria, J. A. M. A. 79:1584 (Nov. 4) 1922.



make the volume of the L + dose exactly 1 c.c. Five-tenths cubic centimeter of this glycerinated toxin is added to 14.5 c.c. of sterile physiologic sodium chlorid solution. This gives a strength of  $\frac{1}{30}$  L + dose to 1 c.c.

In the laboratory, the specimens of blood are centrifuged, and 0.1 or 0.2 c.c. of the clear serum is placed in a 2 c.c. shell vial. An equal quantity of the toxin dilution is now added to the serum in the shell vial, a 1 c.c. record or Luer syringe being used preferably for measuring both serum and toxin. The same syringe may be used for measuring several serums if it is washed out several times with salt solution after each use. It is necessary, before drawing up serum or toxin, to expel carefully all liquid left in the lumen of the needle, for if this is not done it will be drawn up into the fluid being measured, thus altering the strength. The vials are agitated sufficiently to insure thorough admixture of their contents, and allowed to stand at room temperature for half an hour.

During this wait, the guinea-pigs, which must be white, are prepared by plucking the long hair from an area on one or both sides, and then shaving to give a clean surface. The process of plucking does not seem to inconvenience the pigs any more than the shaving, and the method is to be preferred to that of using depilatory pastes.

If the toxin is fairly low in the number of minimal lethal doses to the L + dose, six tests may be placed on one pig, three on a side, without fear of killing the animal by an overdose of toxin, should all the tests be positive. The toxin we are using at present has twenty-five minimal lethal doses in the L + dose; consequently, the most toxin that can be present in a single positive test is one-twelfth minimal lethal dose, or a total of half a minimal lethal dose in six inoculations ( $25 \div 300 = 1/12$ ). Guinea-pigs should not be used a second time for this work on account of the possible development of an immunity. The injection is made intracutaneously with a 26 gage needle, the same as for the Schick test.

Concerning the maintenance of a potent toxin by laboratories using this test, it may be said that, notwithstanding the liability of toxin to deterioration, the difficulties from this source, contrary to what obtains in the Schick test, are negligible. In the first place, a fall in the minimal lethal dose value will have no effect on the guinea-pig test so long as the L + value has not materially changed. Fortunately, the nature of toxin is such that the L + or neutralizing value falls very much more slowly than its toxic quality; in fact, barring accidents, hardly at all in periods of several months, in a well "ripened" toxin.

The affinity of antitoxin for toxin is so great that one unit neutralizes many minimal lethal doses (according to the number in the L + dose), and it follows that the amount of toxin (measured on the L + basis) may be considerably diminished in the test without greatly diminishing the amount of antitoxin necessary to give a negative reaction. If the toxin used should have deteriorated, unknown to the technician, say 10 per cent. in its L + value,  $\frac{1}{33}$  unit of antitoxin in the serum tested will give the same reaction as  $\frac{1}{30}$  unit with full strength toxin. If a fall of 20 per cent. (which, it is safe to say, need never be expected) should have occurred since the last standardization,  $\frac{1}{40}$  unit will give the same reaction. Conversely, a test serum containing 10 per cent. less than the  $\frac{1}{30}$  unit required for protection will permit a reaction that will be quickly noted, while 20 per cent. less will permit a definitely positive reaction, owing to the increased

amount of toxin remaining free. These facts explain the great sharpness of reaction and the greater sensitiveness of this test over the Schick.

It is a simple matter to check up the strength of a toxin by making a series of dilutions, each one of which contains one-thirtieth of a possible or tentative L + dose per cubic centimeter, the dilutions varying from one another in strength by one one-hundredth of the original L + value of the toxin. Thus, if the last known value of the toxin was 1 c.c. to the L + dose, one solution is made which will represent 1 c.c. of the toxin to 30 of physiologic sodium chlorid solution; the next stronger will contain 1.01 c.c., and so on, increasing by 0.01 c.c. till four or five dilutions have been made.

After the dilutions have been prepared, 0.2 c.c. of each is placed in tubes or shell vials, and to each is added the same amount of antitoxin solution of such a strength that 1 c.c. equals  $\frac{1}{30}$  unit. Two-tenths cubic centimeter is injected intracutaneously, as previously described. The amount of toxin used in the strongest dilution failing to produce necrosis in seventy-two hours is the true L + dose.

The toxic quality of a toxin (on which the Schick test but not the Kellogg test depends) falls extremely rapidly under certain conditions (temperature, light, age, and the like) so that hundreds and perhaps thousands of Schick tests are performed with damaged toxin,

#### SUMMARY OF COMPARATIVE RESULTS

Kellogg	Schick	Number
Positive.....	Negative .....	1
Positive.....	Neg. pseudo.....	2
Negative.....	Positive .....	1
Negative.....	Combined pos.....	7
Same with the two tests.....		149
Total .....		160

and frequently the false negatives received with such a toxin are not recognized by the operator because he has no check or control against a poor toxin. It may be said that he should be on his guard for such an eventuality, and have his suspicions aroused by too high a percentage of negatives; but he has no such check when applying a few tests at a time. The fact remains that he does not always recognize the difficulty, even when testing large groups.

The accompanying table shows the results of tests applied in parallel with the Schick test on 160 persons, in four different groups, each group being tested at one time by the two methods. Three of these groups were adults, one consisting of sixteen laboratory workers, one of public health nurses, twenty-three in all, and the other, of fifty-five medical students.

The remaining group was composed of children in a school for the deaf and blind. In this institution, 233 Schick tests were made, and all showing pseudoreactions were retested by guinea-pig inoculation. The number retested was sixty-six, which seems a high percentage of protein reactions; but most of the children were young adolescents, very few being under 10 years of age.

Among the miscellaneous specimens examined, in addition to the 160 mentioned above, two were received with a history of the children having given positive Schick tests followed by a course of three injections of toxin-antitoxin mixture six months before. Both of these bloods gave a positive reaction on the guinea-pig, which immediately raises the question of the potency of the toxin-antitoxin mixture.



With two exceptions, the Schick test and the Kellogg test in this entire series of 160 persons tested have agreed so far as uncomplicated Schick tests were concerned. The first of these exceptions was in a public health nurse who was tested by both methods, along with the other members of her group, twenty-three in all. She gave a clean-cut Schick positive, uncomplicated by protein reaction, and a negative Kellogg test. This result was so surprising that she was asked to return so that another sample of blood could be taken as a check against some such mistake as leaving the toxin out of the mixture. The second test was the same as the first, negative on the guinea-pig. Unfortunately, another Schick test was not done, and the subject is now out of reach.

There are two possible explanations for the conflicting results in this case. First, the patient may be sensitive to toxin (as a protein), giving a skin reaction to raw toxin, even though protected by an ample amount of natural antitoxin. The heated control remained negative for the reason that the toxin had been destroyed and the subject was not sensitive to the usual proteins of the toxin solution. This explanation presupposes that toxin is a true protein in chemical structure.

The other explanation is that the subject should have given a negative pseudoreaction with the Schick test; but, through a slip in technic (too deep an injection), no reaction followed the injection of heated toxin. Such a chance, previously referred to as having been reported by Park, is easily possible.

The second exception occurred in the group of medical students, and is probably an example of a false negative resulting from accidental misplacement of the injection in the Schick test.

The first test resulted in a negative Schick and a positive Kellogg reaction. In the second test, the Kellogg test remained the same, but the Schick test was positive, although not a very strong one. There was some transitory protein reaction in this case, but it is not included with the protein-sensitive group, for the reason that the explanation of the difference in the two tests at the first trial is not based on the existence of such sensitization.

Differences in results between the two tests, among protein-sensitive persons, were observed twice in the medical student group of fifty-five, both being read as negative pseudoreactions by the Schick test but giving positive reactions on the guinea-pig. These three false negatives give in this group an error for the Schick test of 5.45 per cent.

Among the sixty-six in the blind school given both tests, all of which were protein sensitive, the Schick results as finally interpreted after several inspections, and some changes of opinion, agreed with the guinea-pig readings in all excepting seven instances. These seven were recorded as combined positives by the Schick and as negative by the Kellogg test. There were, in addition, seven combined positives that were correctly read according to the other test.

That the guinea-pig method gives the true immune status of the subject will hardly be disputed by any one who attempts to solve the problem of what, besides antitoxin, can prevent a necrosing dose of toxin from producing that effect in the skin of a guinea-pig.

All tests were controlled by inoculating toxin mixed with salt solution instead of serum.

#### SUMMARY AND CONCLUSIONS

1. The test described is conclusive as showing either the presence or the absence of immunity to diphtheria.

2. Controls are possible which guard against deteriorated toxin and false negative reactions.

3. False negative reactions with the technic described are believed to be an impossibility.

4. Protein reactions do not occur.

5. The test is a central laboratory one, relieving the physician of the responsibility for the interpretation of the doubtful reactions so frequently observed in the Schick test.

6. The test is the one of choice for practitioners having occasion to test a few persons at a time. The disadvantage of the Schick test, under such circumstances, is that no control against false negatives from deteriorated toxin exists.

7. The test is not recommended as a substitute for the Schick test, when large groups are being examined, for the reason that the collection of a large number of blood specimens would be too time consuming, excepting with adults and older children with whom venipuncture can be used.

### INFLUENCE OF ALCOHOL ON PROGNOSIS OF PNEUMONIA IN COOK COUNTY HOSPITAL

A STATISTICAL REPORT

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AND

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In this paper we propose to consider to what extent the use of alcohol affects the course of lobar pneumonia. The influence of alcohol on longevity has been the subject of extensive studies in recent years by the insurance companies. These companies do not, of course, accept persons who admit the excessive use of liquor, and their comparisons, therefore, are between abstainers and moderate users. Dr. Rogers of the New York Life shows that in several large companies the mortality runs 32 per cent. higher in the group of moderate alcohol users than in the group of abstainers. The statistics of the Midwestern Mutual show that if abstainers are rated at 100 per cent., the mortality of moderate or occasional users of alcohol is 119 per cent.; that of daily users of beer is 133 per cent.; that of daily users of spirits is 166 per cent. The New England Mutual reports the startling comparison of 100 per cent. in abstainers to 213 per cent. in moderate users.

Carefully prepared and impressive as these figures are, we must make allowance for a certain error arising from the reluctance of the applicant for insurance to tell the whole truth concerning his habits. The abstainer has nothing to hide, but the user tends to minimize the amount that he drinks.

The physician in practice, on the other hand, enjoys the confidence of his patient and is able to obtain more reliable information on this matter. Our data are obtained exclusively from the histories of lobar pneumonia patients at the Cook County Hospital. We have studied the records covering eight years, six years before prohibition, 1911 to 1917, and two years after prohibition, 1921 to 1922. The intermediate years were purposely omitted on account of the streptococcus and influenza epidemics that produced atypical forms of pneumonia. It is a matter of common knowledge



that cases of classical lobar pneumonia were comparatively few until the year 1921.

#### THE GROUPING OF CASES

We found it feasible to place in the first group the abstainers and those who used less than two glasses of beer daily, or who used spirits occasionally. The

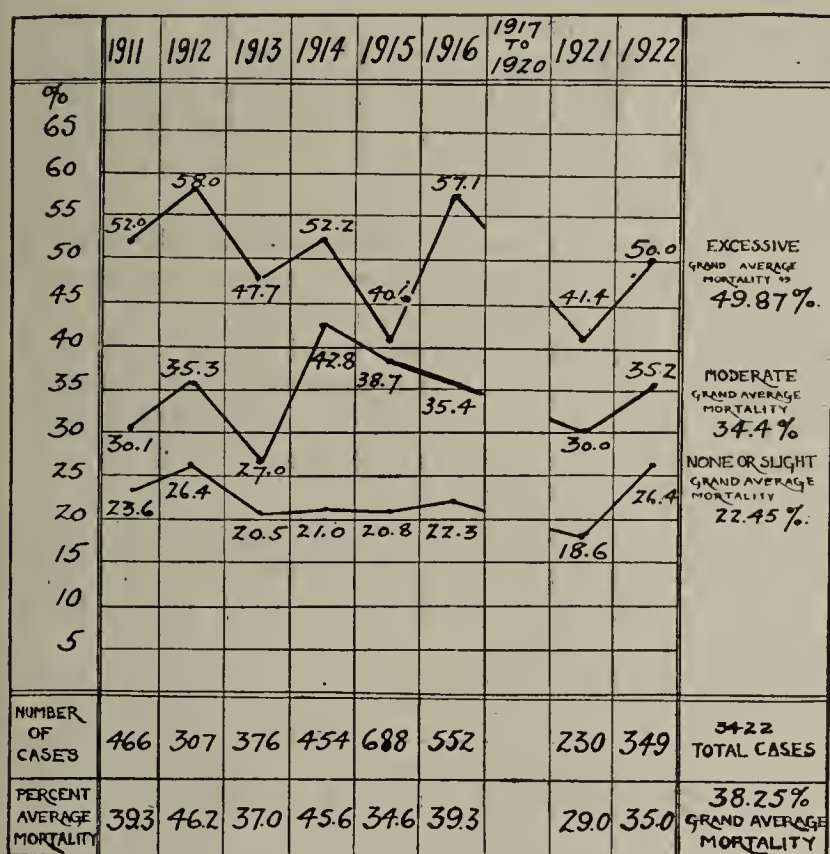


Chart 1.—Yearly mortality in each group.

second group included those who drank regularly two or more glasses of beer, or one or two glasses of spirits. The third group embraced those who drank regularly a large amount of beer or spirits, or who became intoxicated at times. Thus, it will be seen that our first group includes many persons who would be classified as moderate users by the insurance companies, and our third group is made up of men who, for the most part, would be ineligible for insurance because of their excesses.

#### GENERAL AGE AVERAGE YEARLY IN EACH GROUP

	1911	1912	1913	1914	1915	1916	1917-20	1921	1922	Grand Aver.
None or slight.	35.3	32.3	33.5	32.8	38.4	37.9	—	33.6	36.7	35.06
Moderate.....	40.4	39.3	40.2	42.0	41.1	41.1	—	38.4	40.9	40.46
Excessive.....	42.1	42.8	43.1	42.2	42.7	45.4	—	43.4	43.9	43.20
Average.....	39.2	38.1	38.9	39.0	40.7	41.5	—	38.4	40.5	39.57

In our compilation we excluded all cases in which a clear statement was not recorded concerning alcoholic habits. A majority of such patients were brought to the hospital in such a toxic or moribund condition that no intelligent answers could be obtained. The proportion of alcoholics among these patients was undoubtedly very high, and their mortality more than 56 per cent. So we may be sure that the elimination of these patients who gave no definite information concerning their habits has reduced the actual mortality incidence of the third group of excessive drinkers.

Only male patients have been tabulated, and none were recorded under the age of 18. This comprises 3,422 cases of lobar pneumonia, 884 of which were in the first group, 1,095 in the second group, and 1,443 in

the third group. Chart 1 gives the mortality rate of the three groups in each of the eight years. The grand average for all the years of the first group of abstainers and light users is 22.45 per cent.; the average of moderate users is 34.4 per cent.; the average of excessive users is 49.87 per cent.

A natural objection may be raised to accepting these figures at face value on the ground that excessive users are likely to be older than the moderate or light users, and that this difference in age may explain the increased death rate.

We found the average age of the first group about 35 years; of the second group of moderate drinkers, about 40 years, and of the excessive group, about 43 years.

Chart 2 has been constructed with a view to showing the death rate by decades in each group. For example, one sees that in the period between 18 to 29 the mortality percentage of the first group was 13.6, as compared with 18.1 per cent. in moderate, and 28.6 per cent. in excessive users. In the decade 30 to 39, the percentages were 18.4, 29.1 and 42.5; in the decade 40 to 49, 24.6, 38.6 and 50.9; in the decade 50 to 59, 40.2, 51.8 and 62.7; over 60 years, 49.3, 57.7 and 68.4.

We may assume that in this comparison the age factor is entirely eliminated, as we compare the death rate of the three groups only at similar ages.

Not only does the use of alcohol increase the death rate, but the increase maintains a remarkably constant ratio to the amount of liquor consumed.

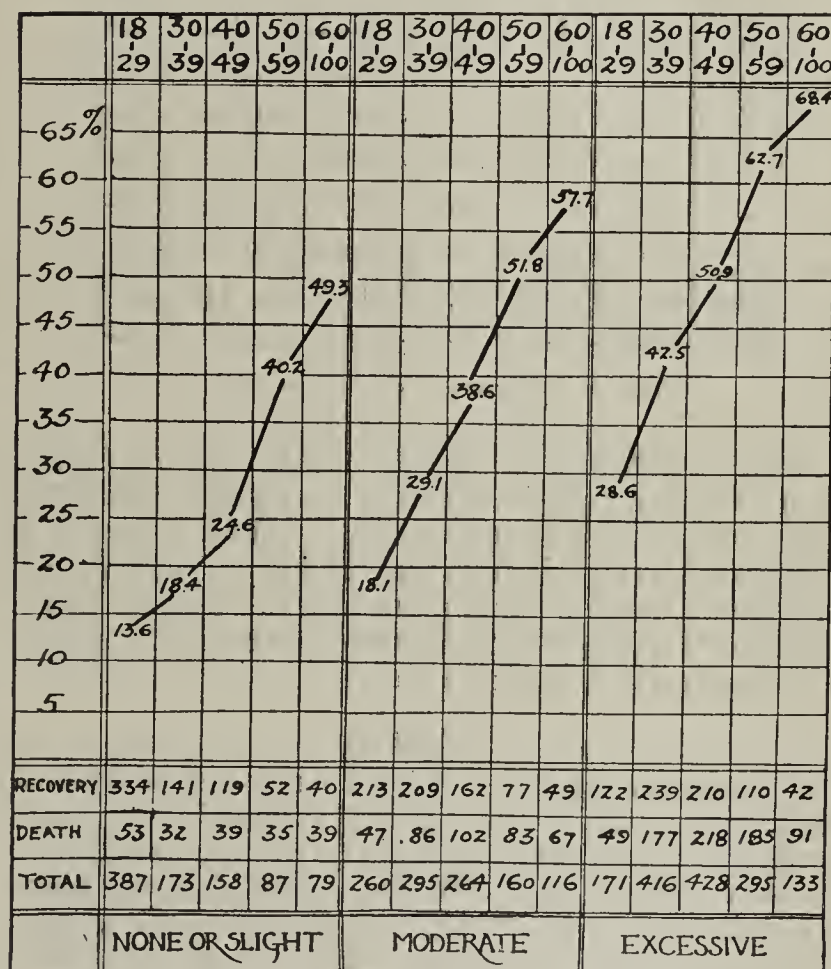


Chart 2.—Mortality by decades in each group.

It is interesting to observe there are 1,095 cases in the moderate group and 1,443 cases in the excessive group, a total of 2,538, with a mortality of 1,105. The mortality, calculated on the basis of the figures obtained for the group of abstainers or light users, would be 666. In other words, 439 of these deaths in the last two groups may be attributed to the use of alcohol in moderate or excessive quantities.



## DECREASE IN THE USE OF ALCOHOL

Do these data prove that prohibition legislation is lessening the death rate of pneumonia? They do not. They demonstrate only what a harmful effect the use of alcohol has on the course of the disease. They do not tell us whether legislation has or has not diminished the prevalence of drinking.

There are some interesting facts, however, that have a bearing on the results of legislation.

In the six years antedating the enforcement of the eighteenth amendment, only 21.6 per cent. of all the pneumonia patients were in the first group of abstainers or light users, whereas, in the two postamendment years, the number arose to 39 per cent. Similarly, in the preprohibition years, the excessive users constituted 46.8 per cent. of the whole number, while in the post-prohibition years they had fallen to 23 per cent. It was noted also that the amount of alcohol consumed by the persons in this group in recent years was far less than formerly. The tendency to drink less was already in evidence in the years 1915 and 1916, for reasons not explained.

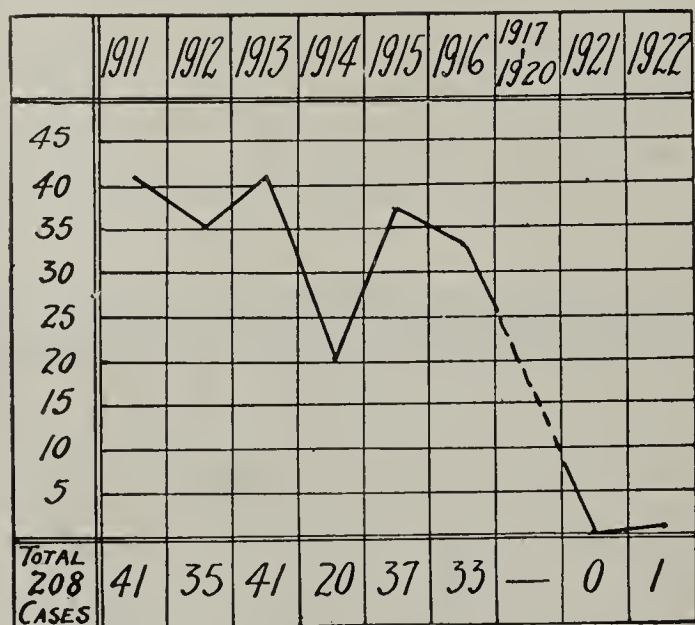


Chart 3.—Incidence of delirium tremens.

Another striking bit of evidence that the use of alcohol is greatly on the decrease, at least among the poor, is the record of delirium tremens. Chart 3 shows a yearly incidence of from twenty to forty-three cases of delirium tremens developing during the course of pneumonia in the preprohibition years, while in 1921 and 1922 together only one case occurred.

## SUMMARY

1. To determine what influence the use of alcohol might have on the death rate, 3,422 cases of lobar pneumonia occurring during eight years at the Cook County Hospital were studied. It was found that the mortality was considerably higher in moderate users than in light users or abstainers, and that the mortality in excessive users was much higher than in moderate users.

2. The average age of the moderate group was about five years greater than that of the abstainers or light users, and the average age of the excessive group was three years more than the moderate. The maximum range between the first and third group was eight years. This would therefore explain a certain increase of mortality in the second and third groups over that in the first group.

3. To eliminate the age factor entirely from the problem, the mortality rate was reckoned separately in each group by decades. A comparison of the death rate in the same decades of the three groups shows a remarkable increase of the moderate users over the light users or abstainers, and a still greater increase of the excessive users over the moderate. Taking, for example, the decade 30 to 39 years, embracing the largest number of patients, we find the mortality in the abstainer or light user group 18.4 per cent.; in the moderate user, 29.1 per cent., and in the excessive user, 42.5 per cent., from which we conclude that alcohol, in proportion to the amount consumed, increases the chances of death in pneumonia.

4. It is impossible to calculate the effect of legislative prohibition, but we do see in recent years an increase in the proportion of abstainers or light users, and a corresponding decrease in the number of excessive drinkers. The practical disappearance of delirium tremens in recent years, as compared with its frequency before prohibition, also bears testimony to a lowered rate of alcohol consumption.

5. It may be properly concluded that if all these patients had been restricted to abstinence or to the light usage of alcohol, 439 patients who died would have been saved.

122 South Michigan Avenue.

## SECONDARY OS CALCIS\*

ARTHUR KRIDA, M.D.

NEW YORK

This case is reported because it appears to be the first case in the literature in which this accessory bone was implicated in a traumatism of the foot.

## REPORT OF CASE

J. J. Mc., aged 30, an electrician, sprained his right ankle in April, 1921. I saw him three months later, at which time he was still complaining of pain and disability in the right foot. He localized the pain on the dorsum, in front of the external malleolus. He stated that occasionally a swelling appeared in this situation after use.

He walked with a slight limp. There was considerable tenderness on the dorsum in front of the external malleolus. Occasionally a crepitus could be elicited in the anterior subastragaloid region. The mobility of the subastragaloid region was moderately restricted.

A roentgenogram in the lateral view showed what at this time was interpreted as being a fracture through the processus anterior calcanei with avulsion of the distal fragment. The roentgenographic appearance of the left foot was not peculiar.

During the ensuing year, I saw the patient several times. He had had several recurring sprains with periods of disability. The findings on each examination were substantially as outlined above.

At this time, I arrived at the conclusion that, instead of a fracture, the loose bone shown in the roentgenogram was a secondary os calcis, which had become loosened in its situation, and which predisposed this region of the foot to recurring sprains by reason of its instability.

Aug. 15, 1922, I operated on this foot at the Hospital for the Ruptured and Crippled. The dissection was begun at the outer border of the calcaneocuboid joint. At about the middle of the dorsum of this joint, a small quantity of loosely organized cancellous bone was found lying on top of the joint ligaments. Further exploration inward disclosed the acces-

\* Presented before the Orthopedic Section of the New York Academy of Medicine, Jan. 19, 1923.



sory bone shown in the roentgenogram, lying quite loose in its bed, and with very little attachment anywhere. This was removed.

The specimen was an irregular, three-sided pyramid whose greatest diameter was rather less than one-half inch. The base was nonarticular, and faced toward the processus anterior calcanei. The dorsal face was likewise nonarticular. The internal and external faces were covered with articular cartilage and articulated respectively with the head of the astragalus and with the cuboid. The apex and part of the lower border between the two articular faces were directed toward the scaphoid, but did not touch this bone.

The patient returned to his work, October 9. On examination, Jan. 19, 1923, he stated that his pain and disability had been much relieved, although there was still some tenderness in the middle of the operation scar. The scar was non-adherent, and the joint mobility was good.

#### COMMENT

Dwight<sup>1</sup> offers the most comprehensive original information on the subject of accessory bones of the foot in the American literature. In the great number of dissections that he made, he apparently found only two examples of a separate bone in this situation. Since the entire material relating to secondary os calcis is contained in a single paragraph, it is quoted in full (page 17):

"The secondary os calcis is very puzzling, inasmuch as the term seems to be applied to two distinct structures. The most typical one forms the very front of the sustentaculum, and is usually a small bone with a convex posterior border fitting accurately into a corresponding concavity in the front of the sustentaculum. The other nontypical form (which I cannot feel sure is really the same), is a *nonarticular*, rough, ill-defined *projection* from the front and top of the os calcis, pointing toward, if it does not reach, the space between the scaphoid, cuboid, and head of the astragalus. It is apparently by an overdevelopment of this process that the os calcis and scaphoid are occasionally brought into contact. Once I have

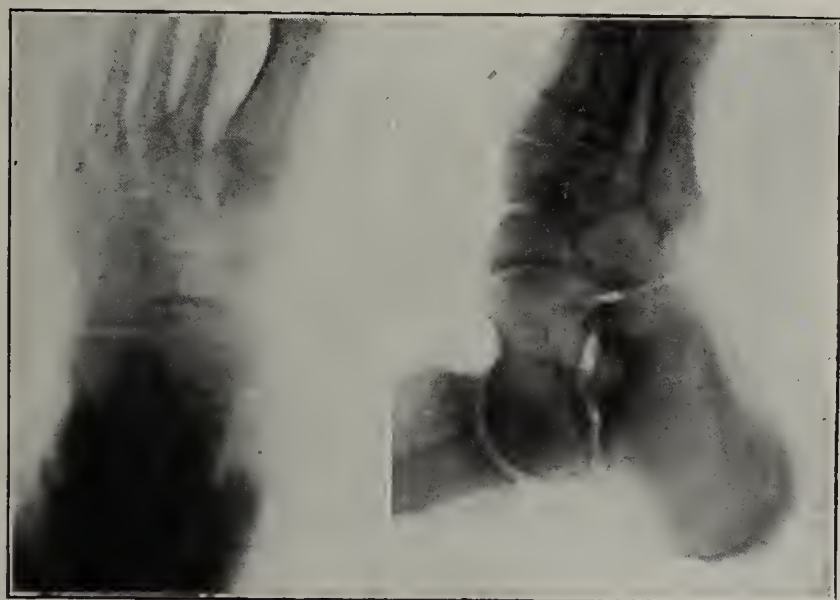


Fig. 1.—Secondary os calcis from above and from the side.

seen, in a very pathological foot, what looked like a bone in this place which earlier had been distinct, but had been absorbed into the os calcis."

Figure 50, Plate XXII, is a roentgenogram of a clinical case showing a secondary *separate* os calcis in both feet. These feet were not dissected. Figure 51 is a photograph of a dissected specimen, showing a *separate* bone, with the following comment. . . . "Unfortunately, the way it was connected with the bone below it, whether by joint, cartilage, or ligament, is not noted. . . . It is very common in skiagraphs of the outer side of the foot to see a *projection*

of the os calcis in this direction, which, if marked, would go on to join the scaphoid. It is very difficult to determine how much of this effect is due to bone and how much to the position of the plate." Figure 64 is another photograph of a *separate* bone, without descriptive matter.

Kleinberg,<sup>2</sup> in examining 350 roentgenograms, did not find a single example of a separate bone. He found seven examples (2 per cent.) of a projection of the os calcis, such as Dwight describes above.

Geist,<sup>3</sup> in examining 100 roentgenograms, found two examples of secondary os calcis, but whether or not as separate bones is not stated.

Pfzner<sup>4</sup> is the source of most comprehensive original information in the foreign literature. Prior to 1896, Stieda and Gruber, quoted by Pfzner, had each reported a case encountered in the dissecting room. In Pfzner's series of dissections of 840 feet, he encountered a separate

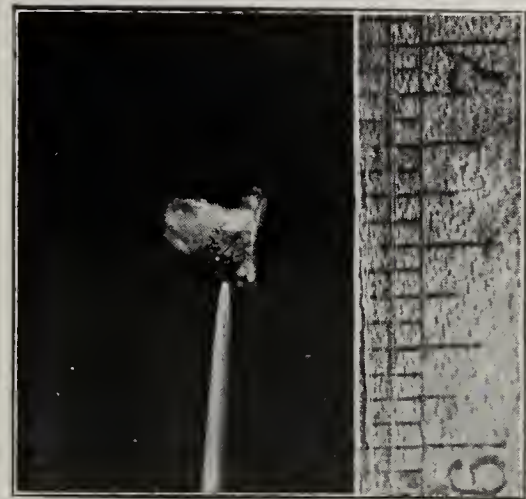


Fig. 2.—Specimen removed at operation.

secondary os calcis in the interval between the anterior end of the os calcis, the cuboid, scaphoid and astragalus, sixteen times (2 per cent.). The bones varied in diameter from 4 to 15 mm. The attachment to the os calcis was fibrous, but firm. In no case was there a joint here. The cuboidal and astragalar faces were commonly articular and covered with cartilage. The relation with the scaphoid was commonly by a free edge, without contact. In two cadavers, the condition was bilateral. In eleven instances, this was the only accessory bone in the foot under examination; there were four instances of association with a tibiale externum, and one with an os trigonum. Of the eleven cases of isolated occurrences of secondary os calcis, the other foot was not examined in three cases; of the remaining eight, four were accounted for in the bilateral cases mentioned above; in the remaining four, the other foot showed one instance of intermetarseum, one of talus accessorius, one of os trigonum, and one of tibiale externum.

#### CONCLUSIONS

From the clinical standpoint, the separate ossicle described by Pfzner may be accepted as the typical secondary os calcis. Its occurrence in 2 per cent. of his large series of dissections need not lead to the expectation of finding it frequently in routine roentgenograms of the foot, as the smaller and less well developed specimens might easily escape demonstration.

It would seem that a well developed secondary os calcis, acting like a wedge in a series of complicated movements in the middle of the tarsus, would be peculiarly liable to avulsion or displacement.

116 East Sixty-Third Street.

2. Kleinberg, S.: Supernumerary Bones of the Foot: An X-Ray Study, *Ann. Surg.* **65**: 499 (April) 1917.

3. Geist, E. S.: Supernumerary Bones of the Foot, *Am. J. Orthop. Surg.* **12**: 403-414, 1914-1915.

4. Pfzner: Die Variationen in Aufbau des Fusskels, *Schwalbe's Morphologische Arbeiten* **6**, 1896.

1. Dwight, Thomas: *Variations of the Bones of the Hand and Foot*, Philadelphia, J. B. Lippincott Company, 1907.



PRIMARY TUMOR OF THE THYMUS  
ASSOCIATED WITH TUBERCULOSIS\*HENRY C. SWEANY, M.D.  
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Ewing<sup>1</sup> classifies primary tumors of the thymus in three groups: (1) lymphosarcoma, or thymoma; (2) carcinoma, and (3) spindle-cell sarcoma (very rare). By far the greatest number fall within the first class. There seems to be considerable question whether the so-called carcinomas of the thymus are carcinomas or merely a variety of the first group. The lymphosarcoma of the thymus, or, more truly, the thymoma, presents a condition almost identical with that presented by the lymphosarcoma of the lymph glands. Clinically, they are indistinguishable; but histologically, there are certain well established differences, which may be roughly comparable to the differences between the structures of the lymph and of the thymus glands. The one

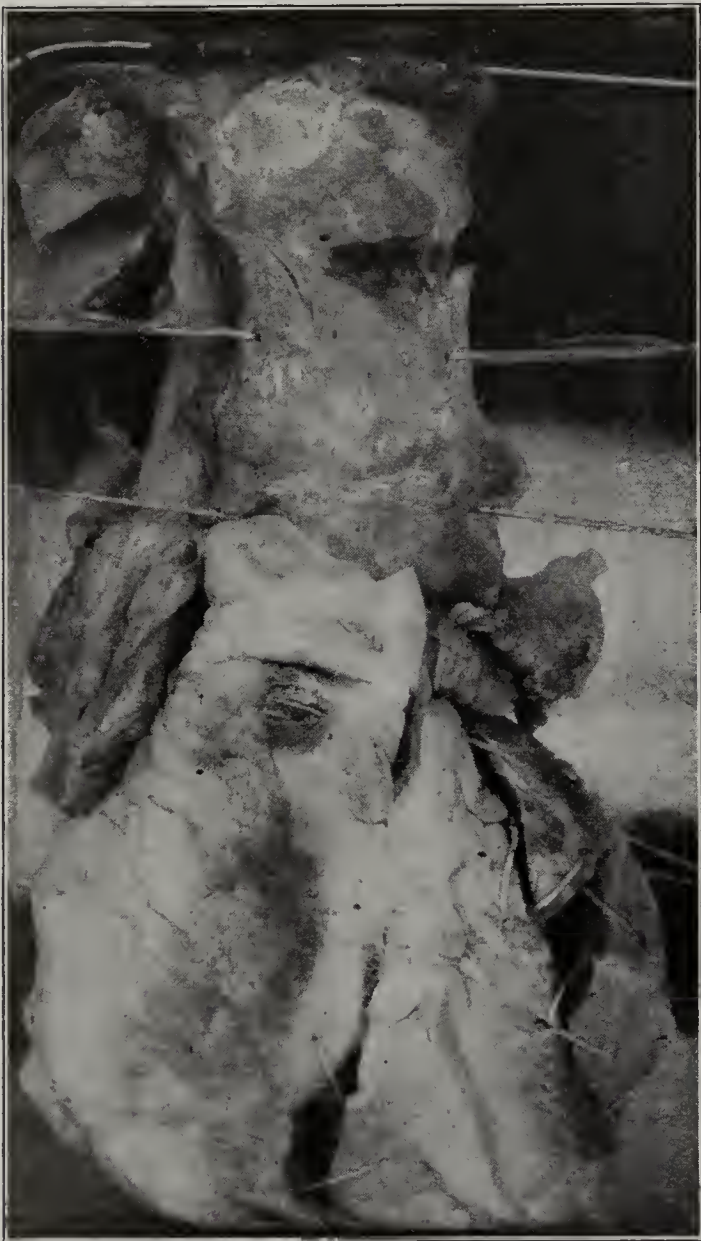


Fig. 1.—The tumor lying over the great vessels showing attachment to the chest wall, at the upper left.

outstanding point of difference in the primary tumor of the thymus is the fact that the reticular cells are larger and more nearly polyhedral, and they originate from the endoderm rather than from the mesoderm, as is true in the reticulum of lymph glands. Occasionally, the polyhedral cells may be very large and grouped,

resembling Hassal's corpuscles. Varying numbers of giant cells, eosinophils and plasma cells may be present.

## REPORT OF CASE

E. P., a man, aged 40, entered the Municipal Tuberculosis Sanitarium with moderately advanced pulmonary tuberculosis, tubercle bacilli having been found on several occasions in the sputum. Four months afterward, a small tumor developed, 1 inch to the right of the midline, between the second

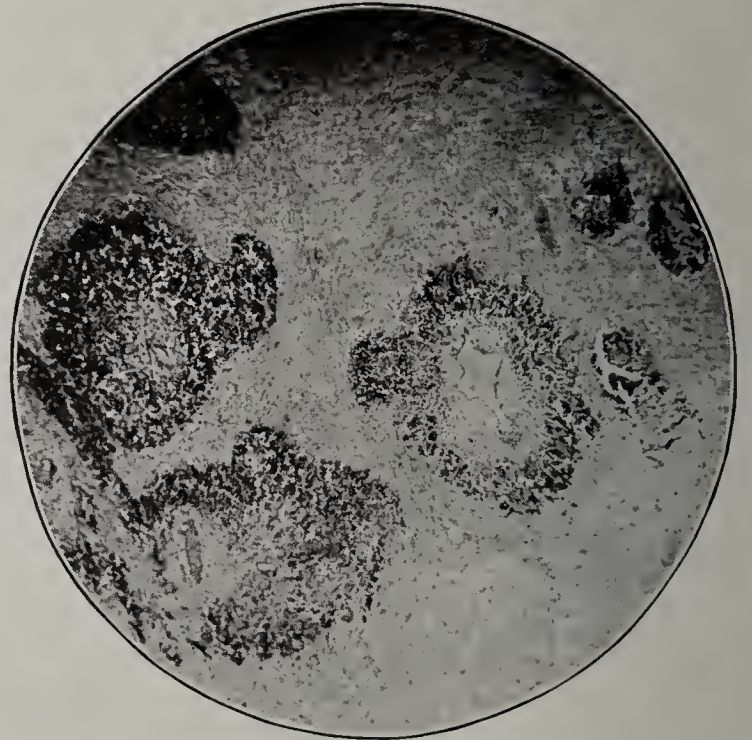


Fig. 2.—Perithelioma-like appearance due to loss of staining power of cells away from blood vessels. This condition is more marked in the older portions of the tumor (low power).

and the third rib, which, on section, was found to be sarcoma. The condition developed rapidly, death ensuing within six weeks. Necropsy revealed a tumor of the thymus gland, extending around the great vessels in crablike fashion. Direct extension of the tumor through the anterior chest wall was also found. Metastasis to the tracheobronchial lymph glands and the liver had occurred. A small tuberculous cavity, 1 cm. in diameter, and a few caseous and calcified tubercles, less than 0.5 cm. in diameter, all found in the right apex, were the only indications of tuberculous involvement that could be found.

The tumor was 11 by 3.5 cm., flat on the anterior surface and irregular on the posterior. The posterior surface conformed to the outlines of the great vessels. At the upper right portion, there was a circular elevation, 0.5 cm. high and 1.5 cm. in diameter, marking the attachment to the anterior chest wall. On section, the tissue was firm and offered resistance to the knife. In this respect, it resembled a pancreas in which there is considerable fibrosis. Microscopically, the type of cell varied slightly in the different portions of the tumor. In the portion penetrating the chest wall were many large polyhedral cells, with about an equal number of intervening round cells. There were a few plasma cells, and rather infrequently there was a giant cell. In the tumor proper and in the parts involved by metastasis, the polyhedral cells were predominant. They were joined more or less to each other by cell processes. There were many blood vessels throughout the tissue, immediately surrounding which the cells stained deeply. More remotely their staining power was lost completely.

Certain authors<sup>2</sup> place tumors that have the large polyhedral cells as the principal element among the carcinomas, because of the size and origin of the cells. While this may be correct histologically, it seems that the character of growth and the extremely rapid clinical course would permit as well of their classification with the lymphosarcomas. Authorities seem to be divided

\* From the Laboratories of the Municipal Tuberculosis Sanitarium.  
1. Ewing, James: *Neoplastic Diseases*. Ed. 2, Philadelphia, W. B. Saunders Company, 1922, pp. 917-920.

2. LeTulle: *Arch. gén. de méd.* 2: 641, 1890.



on this point. Ewing<sup>1</sup> quotes from reports of Dansac, Hauser and Rubaschow, who alike state that both round and polyhedral cells may be found together in the same tumor. Such appears to be the condition in the one here described. Ewing further states that, on the one extreme, there are the tumors resembling Hodgkin's granulomas, with lymphocytes, reticulum, giant, plasma and eosinophil cells. On the other extreme, there are the pure tumors of rounded or polyhedral reticulum cells. If there exists a true resemblance to Hodgkin's granuloma in the pathologicophysiology action, there should be the usual difference in the clinical manifestations, which would assist materially in an early classification of the tumor. The only point of difficulty here would lie in differentiating this type of tumor from a true Hodgkin's granuloma of the mediastinal lymph glands—a point of only academic interest.

The most important question that arises in this instance is the relation of the tuberculosis to the tumor formation. Many of these tumors are said to be of granulomatous origin. It is, therefore, not unreasonable to suppose that the tuberculosis, though in itself insignificant, incited the cells of the thymus to malignancy.

The course of this type of tumor is typical. They cause death within a short time. There are no successful means of treatment; measures taken are merely palliative. The tumors are, therefore, not difficult to differentiate from any other glandular involvement of the mediastinum, with the possible exception of the type that resembles Hodgkin's granuloma. They grow by

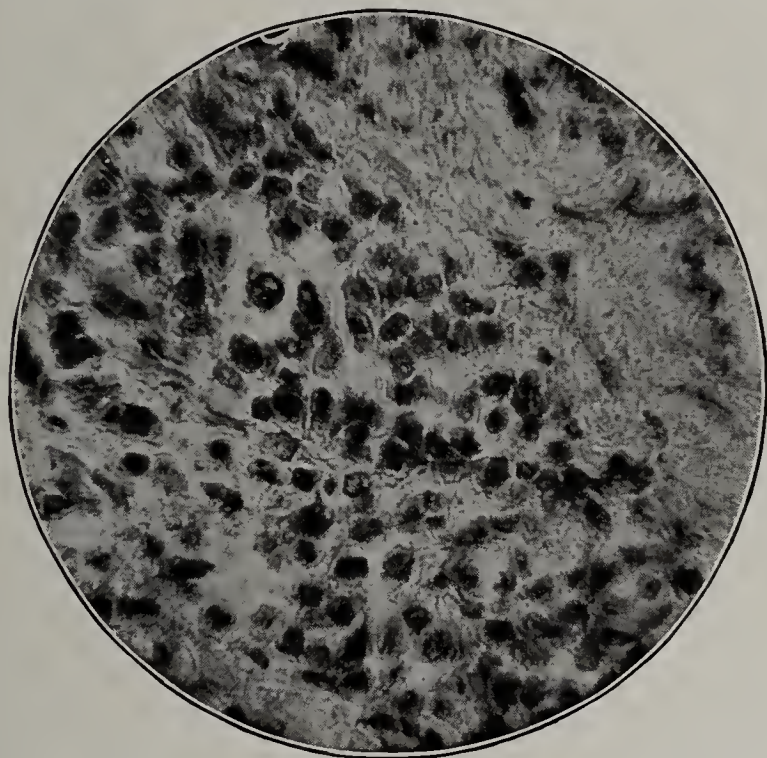


Fig. 3.—Oil immersion photograph of the edge of the tumor showing the polyhedral cells, with very few lymphocytes.

direct extension more than by metastasis; and furthermore, they differ from lymphosarcoma, embryologically and histologically, but not clinically.

5601 North Crawford Avenue.

**The "Cure" for Tuberculosis.**—The history of tuberculosis reveals a record of attempts at cure which reflects little credit on the medical profession, and it well illustrates the waste of energies wrongly directed. Instead of strenuously seeking to understand the nature of the patient's ill health, modern medicine is content still to flounder along in the vain search for "a cure."—Sir James Mackenzie, *Brit. J. Tuberc.* 17:15 (Jan.) 1923.

## NOAH WEBSTER AS EPIDEMIOLOGIST

ALDRED SCOTT WARTHIN, M.D.

ANN ARBOR, MICH.

Oct. 16, 1758, there was born, in the best front room of a farmhouse, in the primitive farming village of West Hartford, Conn., a male infant destined to play a very important part in the intellectual development of "these United States of America." Noah Webster is known today, by name, to every high school student in this land, because no American High School is without a copy of

"Webster's Dictionary." But he is known by name alone as the "great lexicographer and philologist," and even his legitimate posterity, as a class, the pedagogues, accord him in their minds no higher place than that of a compiler of a dictionary. Yet Webster might well, nay, should, be ranged with the Fathers of this nation, since perhaps no other single individual of Revolutionary times contributed more to

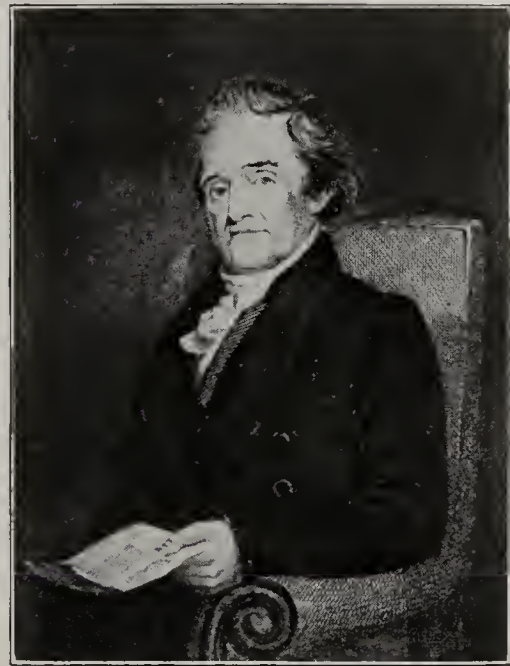


Fig. 1.—Portrait of Noah Webster, engraved by Halpin from the painting by Jared Flagg. (From Scudder's Life of Noah Webster.)

the welding of the diverse colonial states into a national solidarity than did this New England schoolmaster. For he gave to the developing confederation of states a unity of speech, a common mode of expression of thought, without which there can be no national harmony. And Noah Webster accomplished this chiefly by means of his "American Spelling Book," the first edition of which he published in 1783, at the age of 25, bearing himself the expenses of the printing. Forty-five years later came the fruition of his labors for the unification of the American language in the publication of his great "American Dictionary." On this philological achievement alone his claims to fame might rest securely, but a survey of his long life of extraordinary mental activity reveals an astounding record of scholarly accomplishment in many lines.

He entered into every field of activity in the cultural development of the young American nation, and in every field he left some mark of his influence. Little of this is known to the average American citizen of his generation, and still less, perhaps, is the part he played in the early medical history of this country known to the medical profession of today. Although not a medical man himself, he made a scholar's sally into the arena of medical disputation, throwing himself with all of his enthusiastic ardor, backed by his scholarly knowledge of the world's literature, into one of the most bitter medical fights ever waged in this country—the argument concerning the origin of the epidemics of yellow fever, from the occurrence of which the young nation so frequently suffered at that period. The main result of this bold excursion into the realm of medicine—much bolder then than it would be



regarded today—was a two-volume work on “The History of Epidemics and Pestilential Diseases,” the first American work on general epidemiology, and for the production of which he might well be called the father of American epidemiology, should we wish to enhance his claims to a place among the national fathers.

#### THE SPELLING BOOK AND THE GRAMMAR

How the curious happening of a lexicographer writing an ambitious work on epidemiology in the closing years of the eighteenth century came about



Fig. 2.—Birthplace of Noah Webster. (From the illustration in the “Life of Noah Webster,” by Emily E. F. Ford, New York, 1912.)

can be properly understood only in its relation to Webster's whole life story. If there ever was a man through whose entire life, from early manhood to ripe old age, there ran one unceasing purpose, that man was Noah Webster. He was one of those predestined souls born with a mission to fulfil, and the accomplishment of this ideal became almost an obsession. He bent his whole life to that end. His career as an epidemiologist made but a short length in the full chain of his life, and is explainable only as a part of that whole. In 1782, when 24 years of age and only four years out of college, he began his life-work by the compilation of his “Spelling Book,” and his “Grammar,” as the first two parts of an ambitious “Grammatical Institute of the English Language,” the third part of which was to be a reader. Only the first two parts of this educational trilogy achieved immediate publication, and only the first one a great success. It may be considered the first published American book, and its publication led to the passing of the first American copyright laws. Listen to this extract from its introduction:

The author wishes to promote the honor and prosperity of the confederated republics of America, and cheerfully throws his mite into the common treasure of patriotic exertions. This country must, at some future time, be as distinguished by the superiority of her literary improvements as she is already by the liberality of her civil and ecclesiastical constitutions. Europe is grown old in folly, corruption and tyranny; in that country laws are perverted, manners are licentious, literature is declining and human nature debased. For America in her infancy to adopt the present maxims of the old world would be to stamp the wrinkle of decrepit age upon the bloom of youth and to plant the seed of decay in a vigorous constitution.

Such was the patriotism of a Yankee schoolmaster, at the age of 24, in the year 1782, six years after Lex-

ington and Concord, and only one year after the surrender of Cornwallis. Does such a youthful expression of nationalism sound bombastic to the youth of 1922, five years after the European debacle? Webster was a typical product of Revolutionary times, of Puritan and Pilgrim stock, his immediate ancestors holding positions of authority in the religious and civil life of the developing colony of Connecticut. Born under the poignant influences of the “Old French War,” his boyhood was passed on a primitive Connecticut farm to which the news of the stirring events of the gradual separation of the colonies from the mother-country must have come with greatly intensified force, exerting an especial influence on the youthful minds so isolated. Of the actual story of his boyhood up to the age of 14, we have only family traditions. It was said that he was especially fond of words. His early education must have been that accorded to all New England farmers' boys of Colonial times—“the nurture and admonition of the Lord,” with the material assistance of Dilworth's Spelling Book, the Psalter and the Testament, the only educational facilities possessed by the New England district schools. We find him at 14, after this preliminary education, with such a decided love for study and books that he was led to take more interest in a Latin grammar than in the tasks of the field. But he had a wise father who appreciated his son's preference for study, and gave him such preparation for college as the times af-

forded. In 1774, at the age of 16, he entered Yale, his father mortgaging his farm to pay his son's college expenses. In the spring of his freshman year the stirring events of Lexington, Concord and Bunker Hill aroused the patriotism of the Yale youth as it did that of all New England. When General Washington passed through New Haven on his way to take command of the army at Charlestown, Webster was one of the welcoming musicians in the escort of Yale students.

The distractions of the Revolution and the condition of the country affected his course in Yale; the classes were separated and quartered in different towns, and little is known of the part played by individual students, and of their rank and honors during the next seven years. Webster graduated in September, 1778, in a class of forty, one of the most notable that ever came from Yale for the number of distinguished men it produced. The education that these men received was a very limited classical one, but they took it seriously, and the duty of the citizen toward the common good,

THE  
AMERICAN  
SPELLING BOOK:  
CONTAINING,  
AN EASY STANDARD OF PRONUNCIATION.  
Being the FIRST PART of a  
Grammatical Institute  
OF THE  
*English Language.*  
IN THREE PARTS.  
By NOAH WEBSTER, Jun. Esq.  
The EIGHTH Edition, with additional Lessons.  
PHILADELPHIA:  
Printed by W. YOUNG, Bookseller and Stationer, at the  
Corner of Chestnut and Second-streets.  
M,DCC,LXXXVIII.

Fig. 3.—Title page to the American Spelling Book, Edition 8, Philadelphia, 1788.



as emphasized in the ancient classics, stimulated their patriotism and strengthened their ideals of service to their own troubled country. Reared and educated in such an atmosphere of patriotic fervor, Webster was marked for life by its influences, and the desire to aid in the intellectual and moral development of the young American nation became in his mind an obsessing passion; it dominated all of the endeavors of his long and vigorous life, persisting to its close. His conception of national service was a great one, and he clung to it in spite of the greatest obstacles and discouragements,

To diffuse an uniformity and purity of language in America--- to destroy the provincial prejudices that originate in the trifling differences of dialect and produce reciprocal ridicule---to promote the interest of literature and the harmony of the United States--- is the most ardent wish of the author; and it is his highest ambition to deserve the approbation and encouragement of his countrymen.

Fig. 4.—Foreword to the American Spelling Book.

bending all of his unfailing energies, with courage undiminished, toward the accomplishment of his ideal. Through all of his enterprises there may be traced the thread of his great purpose, and that was the improvement of the intellectual and moral life of the independent American people.

He had selected the law as his profession, but the poverty of the country after the Revolution made it impossible for him to gain a living through legal practice. Immediately following his graduation, his father had presented to him an eight dollar continental bill, worth about fifty cents on the dollar, with the remark that he could do no more for him. It is recorded that Webster shut himself up in his room for three days, considering his future, and reading Johnson and the *Spectator* for spiritual consolation. How significant this seems when viewed in the light of his future career! He later in his life spoke of the deep and permanent effect produced on his mind by Johnson's "Rambler." There was nothing for the poverty-stricken young man to turn his hand to for immediate means of obtaining a livelihood but teaching school, so Webster became a Yankee schoolmaster, continuing his own studies at the same time, taking his Master's degree at Yale in 1781, and obtaining admission to the bar in Hartford. The very fact that the disturbed condition of the country prevented any prosperous career in law, and turned him to teaching was probably the decisive turn of fate that determined his career as a lexicographer. His own intrinsic love for words and language, his classical education, the patriotism engendered by the conditions of the times, the separation of America from Great Britain, and the influence of Franklin made him dissatisfied with the educational material then in use. The chief implement of the schoolmaster of the day was Dilworth's Spelling Book, originally designed for the charity schools of England and Scotland. Webster found this especially unfit for American use, and out of this dissatisfaction there gradually developed an ever-growing conviction of the need for a separate American literature and education. And so the spark of the divine fire of a creative plan was kindled. "America must be as independent in literature as she is in politics, as famous for Arts as for Arms," and so the famous Speller was born, with an American flavor all its own, and arranged much more logically and with greater common sense than its English predecessor. The times

were ripe for it, and it had an immediate success. On this success his whole future career was founded.

#### EARLY ACTIVITIES

A growing sense of the value of his own ideals led him now into a life of the most varied activities. As early as 1785 he wrote in his journal, "I have begun a reformation of the language, and my plan is yet but in embryo." He wrote dissertations, and gave subscription lectures on the improvement of the alphabet and the American language, throughout the chief cities of the federated states, even to Charleston, South Carolina. He met and corresponded with Franklin, Washington, Benjamin Rush and other leading minds of the period, and impressed them with his views on these matters. Franklin especially was drawn toward the youth, and later endeavored to have him carry out his ideas of spelling reform. At one time Webster contemplated becoming the private secretary of George Washington, but dropped the matter as he feared that his time for intellectual activity on his own part would be too restricted.

He founded and edited newspapers and magazines, and wrote constantly for the public press on every subject of general interest to the nation, particularly on methods of improving the general system of education. He entered into politics; impressed with the weakness of the Confederation, his political efforts were in favor of a stronger and more centralized form of general government. In 1788 he proposed to Benjamin Rush a plan to found a literary and political magazine in Philadelphia. It materialized in New York instead, in the form of the *American Magazine*, with the motto "Science the guide, and Truth the



FABLE I. Of the Boy that stole Apples.

**A**N old Man found a rude Boy upon one of the Trees stealing Apples.

Fig. 5.—Example of the wood-cut illustrations of the American Spelling Book, Edition 8, 1788.

Eternal God." It lasted but a year, and the venture ended in considerable financial loss to him. His plans were far ahead of the possibilities of the times so far as both literary and financial support were concerned. In New York he founded the Philological Society. In Boston, in 1789, he published "Dissertation on the English Language," which he dedicated to Franklin. Characterized by their strong national spirit, these essays were written with the ideal "Our political harmony is therefore conceived in a uniformity of language." In 1790 he published a volume of moral tales and fables anonymously, in Hartford, under the



name of "The Prompter." Written in the style of Johnson's "Rambler" and in the manner of Franklin, with the motto "To see all others' faults and feel our own" these lively and pointed essays had a great popularity, and were copied into all of the journals throughout the country. At least fourteen legitimate editions were printed of this little volume of essays, and it was extensively pirated both in this country and in England, where it was pronounced to be "a very good shilling's worth publication." In the same year he also published anonymously an edition of Governor Winthrop's Journal, showing his early recognition of the value of the preservation of the records of early colonial history. In this enterprise, as in others, Webster was a pioneer, and showed an intellectual judgment and vision far ahead of his time. Into "The Little Reader's Assistant," published this year, he introduced a "Federal Catechism" in explanation of the Constitution of the United States and of the principles of government and commerce, the first attempt to introduce instruction on matters of civil government into the common schools. In the same year he published also a "Farmers' Catechism."

This brief recapitulation may seem to show the multiplicity of his activities and the catholicity of his interests during the first thirty-two years of his life. Nothing affecting the life of the American people during this time escaped his interest and active attention. Their language, education, politics, political economy, morals, religion, laws, vital statistics, agriculture and general culture all received treatment at his hands. Naturally, a man who could give intelligent discussion and treatment of so many diverse matters would arouse resentment because of that very ability. It

was a primitive society, with a thinly spread and localized culture. The nation was making history too rapidly and the development of literature and the arts lagged very far behind. Local feelings were predominant; Philadelphia vaunted itself, not only as the seat of the government, but because of its literary superiority and still other excellences. Benjamin Rush, writing to Webster in 1788, said: "I object to your printing it in New York. Philadelphia is the primum mobile of the United States. From habit, from necessity and from local circumstances, all the states view our city as the capital of the New World." The union of the colonial states was an economic and political one, and a broader national spirit and culture, a national tie—the very ideals for which Webster was working with all of his might—did not yet exist.

#### THE DICTIONARY

Webster possessed an idea—a great idea—which he kept constantly in mind and presented on all possible occasions. The patriotic ardor, the self-assertiveness and aggressiveness of this crude Yankee youth were taken by many for self-conceit and vanity. He was nick-named the "Institute," the "Monarch"; his *reformed* spelling was called *deformed* spelling. Par-

ticularly were the Boston literati offended by Webster's belief in himself and his national ardor and enthusiasm. Ebenezer Hazard, later Postmaster General, wrote to Jeremy Belknap of Webster: "He certainly does not want understanding, and yet there is a mixture of self-sufficiency, all-sufficiency, and at the same time a degree of insufficiency about him which is intolerable." And Belknap, writing to Hazard, calls Webster "critick and coxcomb general of the United States." With the unpleasant attitude of these smaller men may be contrasted that of the larger minded master spirits of the time in Philadelphia—Franklin, King, Hopkinson, Dickinson, Benjamin Rush and others who had encouraged him with their approval of his schemes and plans for educational reforms, and asked the aid of his pen in furthering theirs in developing the policies of the government.

Through these youthful years of varied achievements, undaunted by his poverty or the opposition of his critics, the growing conviction in Webster's mind of the need of a separate American literature and education

fanned the divine fire of his creative plan for the writing of a complete "American Dictionary of the English Language." He began his labors on this in 1800, and although in the meantime he published abridged forms, the first great quarto of the complete form was not published until 1828. More than twenty-five years of the most exacting and painstaking labor did he give to this great work. We are amazed when we consider the magnitude of his conception, and the tremendous difficulties in carrying it out. The limitations of his own education, the poverty of the library facilities of the United States, the general paucity of American scholarship, his own financial

condition—all of these potent arguments against so extravagant a plan deterred him not a whit. He intended his dictionary to be not only a manual of words but an every-day encyclopedia. Through all of his intensive literary labors in acquiring a working knowledge of new languages, in word-hunting, synopsis-writing and definition-coining he was animated by his ideal of giving to the people of the United States "one language and one tongue." The broad interest which he maintained in the life of the nation, in its politics, in civic affairs, in theology and in other matters constantly revived him, and gave him courage to persist in his heroic labors.

Yet his Journal and the letters of these years reveal periods of discouragement. In 1809, he writes: "I have accumulated such a mass of materials for a dictionary, materials which no other person could use to advantage, that I think it my duty, as it is my pleasure, to prosecute the work." His financial difficulties became greater. In 1812 he moved his family from New Haven to Amherst, Mass., that his living expenses might be cheapened, and that he might have more undisturbed time for work on his dictionary. In his study, a large front room looking out upon the hill, later to be the seat of Amherst College, he worked at a

#### *The Description of a BAD BOY.*

**A** Bad Boy is undutiful to his father and mother, disobedient and stubborn to his master, and ill-natured to all his play fellows. He hates his book, and takes no pleasure in improving himself in any thing. He is sleepy and slothful in the morning, too idle to clean himself, and too wicked to say his prayers. He is always in mischief, and when he has done a fault will tell twenty lies in hopes to clear himself, which is only making bad worse. He hates that any body should give him good advice, and when they are out of sight, will laugh at them. He swears and wrangles, and quarrels with his companions, and is always in some dispute or other. He will steal whatsoever comes in his way; and if he is not caught, thinks it no crime, not considering that God sees whatsoever he does. He is frequently out of humor, and fullen and obstinate.

Fig. 6.—Description of a bad boy, from the American Spelling Book, Edition 8, 1788.



large table on which were spread his works of reference, passing around the table from one volume to another, collating the radical words in twenty different languages, including the seven Asiatic tongues of the Assyrian stocks. A knowledge of Sanskrit, unfortunately, he was not able to acquire. During all of this labor he became interested in the development of the Amherst Academy, and in 1818, while Webster was president of the board of trustees, there was organized the institution which became the kernel of Amherst College. During these years of literary toil he developed a fine garden about his home, in which he cultivated vegetables, fruits and flowers with equal pleasure and success.

In 1820 he writes that he had expended nearly \$25,000 of his own, and \$1,000 of subscribers' money toward his dictionary labors. We shall soon see where his own money came from. By 1822, Webster had exhausted all the resources of the American libraries of his time. To finish the labor of years he must go to Europe and study for a time in the larger ones of France and England. And helped by his children, one daughter giving him \$1,000, he, attended by his only

living son, William, a lad of 22, went, at the age of 66, to complete and perfect his dictionary. He arrived in Paris in the first week of July, and completed his work there by September 13. He then went to Cambridge, where he remained, with visits to London, until his return to America in June, 1825. It is an amazing picture presented by the visit of this unknown American scholar to these seats of ancient learning, inspiring but pathetic. In Paris he had no acquaintance of literary or scholarly re-

pute; he gained access to the Royal Library through the aid of Mr. Brown, the American minister. He writes, nevertheless, that he saw in Paris all of the books he wished to examine, save one, which he missed through his ignorance that the Royal Library was closed throughout the month of September. In Cambridge he knew but one man, Rev. Dr. Lee, to whom he had a letter of introduction. The same general indifference shown by English scholars and book-publishers to all American literary efforts was extended to him. From London he writes on Feb. 15, 1825, "I lived very little known in Cambridge, till the last three weeks, when I was invited to dine with the officers and fellows of Trinity College." This was followed by expressions of interest in his work from some of them, and regret that they had not been made acquainted with him earlier.

His efforts to obtain from the scholars of Oxford and Cambridge a discussion of certain unsettled points in pronunciation and grammatical construction were of no avail. His letter to Oxford on this point was not even answered.

Nevertheless, he had accomplished the great object of his life. His opus magnum, the great Dictionary, was finished in Cambridge, in January, 1825. He

wrote of this achievement: "When I had come to the last word, I was seized with a trembling which made it somewhat difficult to hold my pen steady for writing. The cause seems to have been the thought that I might not then live to finish the work, or the thought that I was so near the end of my labors. But I summoned strength to finish the last word, and then, walking about the room a few minutes, I recovered."

The American Dictionary in two volumes quarto was published in an edition of 2,500 copies, November, 1828, by Converse of New York, the printing being done by Hezekiah Howe of New Haven. The publisher had to send to Germany for the types of the Oriental languages; otherwise, the work was wholly American. Yet a writer in the *Edinburgh Review* had written spitefully: "In the four quarters of the globe, who reads an American book or goes to an American play or looks at an American picture or statue? What does the world yet owe to American physicians or surgeons?" This quotation became a title-page motto for the *Philadelphia Journal of the Medical and Physical Sciences*. But in 1832 an edition of 3,000 copies of Webster's Dictionary was published in Eng-

land. It was seventy years since the publication of Johnson's Dictionary, and scarcely an improvement had been made in the various editions through which that classic had passed. In the first edition of Webster's Dictionary there were twelve thousand new words and over thirty thousand definitions not contained in any previous work.

We cannot take space here to speak of Webster's subsequent labors, his revised version of the Bible, and his later writings. In 1841, at the age of 83, the

revised edition of his dictionary was published. He died in 1843, in his eighty-fifth year.

#### SOURCE OF INCOME

To return to the Spelling Book! Through all the years of labor on the dictionary it was the income from this little fifteen-penny volume, less than a cent a copy, that kept the fire going and the pot boiling, and made possible the achievement of the greater dictionary. It appeared just at the proper psychologic time. Seized upon by all of the young patriotic schoolmasters, of the early days of our Nation's life, it was carried from the hillsides of New England to all parts of the country, as the tides of migration and settlement flowed through the valleys of the Alleghenies, through Ohio and Indiana, to the oak openings of Michigan and the prairies of Illinois. By 1837 at least fifteen million copies had been sent into circulation, by 1865 at least 42,000,000. Between 1876 and 1890 the records of Appleton & Co. showed a sale of eleven and a half million copies more. The total legitimate sale must far have exceeded fifty millions, and in addition it was repeatedly published in pirated editions without acknowledgment to the author. This little book was undoubtedly an important factor in the primary education of a greater number of minds than any other single

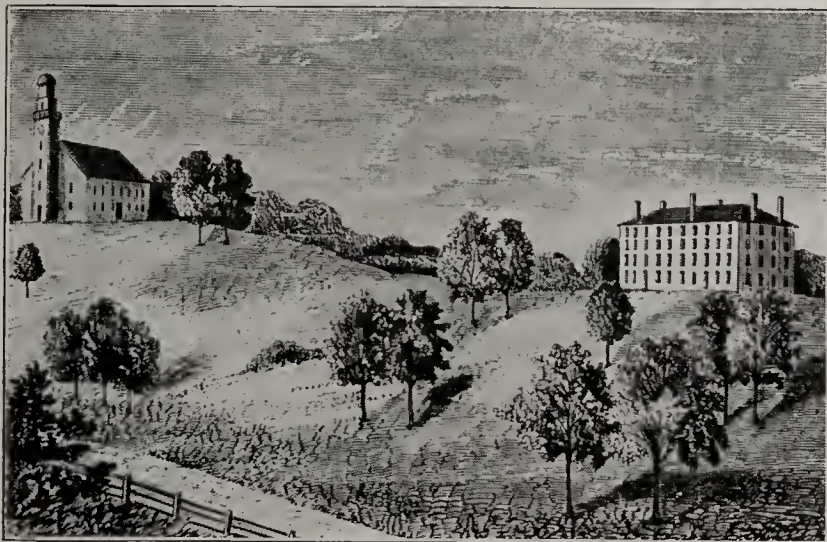


Fig. 7.—View of Amherst Hill from Noah Webster's study windows, at the time he was working on the dictionary. (From the History of Amherst College, by W. S. Tyler, 1873.)



schoolbook used in America. Little wonder that one writer should say:

It was well that Dr. Webster did believe in himself and his own work. His indomitable heroism has laid the foundation of a common tongue for the United States. They have one orthography and nearly one pronunciation. His little "Spelling Book" has in a measure prevented the dialects which exist in the counties of England and the patois of the departments of France, and his views of language have been some of the shaping and controlling forces all over our continent.

Webster had surely accomplished his ideal more completely than falls to the lot of the great majority of men.

#### SCIENTIFIC ACTIVITIES

In the light of the varied intellectual interests of Webster's life as given above, we may now return to

## AN AMERICAN DICTIONARY OF THE ENGLISH LANGUAGE:

INTENDED TO EXHIBIT,

- I. THE ORIGIN, AFFINITIES AND PRIMARY SIGNIFICATION OF ENGLISH WORDS, AS FAR AS THEY HAVE BEEN ASCERTAINED.
- II. THE DENOMINATE ORTHOGRAPHY AND PRONUNCIATION OF WORDS, ACCORDING TO GENERAL USAGE, OR TO JUST PRINCIPLES OF ANALOGY.
- III. ACCURATE AND DISCRIMINATING DEFINITIONS, WITH NUMEROUS AUTHORITIES AND ILLUSTRATIONS.

TO WHICH ARE PREFIXED,

AN INTRODUCTORY DISSERTATION

ON THE

ORIGIN, HISTORY AND CONNECTION OF THE  
LANGUAGES OF WESTERN ASIA AND OF EUROPE,

AND A CONCISE GRAMMAR

OF THE

ENGLISH LANGUAGE.

BY NOAH WEBSTER, LL. D.

IN TWO VOLUMES.

VOL. I.

He that wishes to be counted among the benefactors of posterity, must add, by his own toil, to the acquisitions of his ancestors.—Rambler.

NEW YORK:

PUBLISHED BY S. CONVERSE.

PRINTED BY BEZELIAH HOWE—NEW HAVEN.

1828.

Fig. 8.—Title-page of the first edition of the dictionary, New York, 1828.

a consideration of that part of his activities concerned with medicine. It is perhaps the one least known. Few physicians and fewer students of medicine today ever think of Webster the lexicographer as in any way connected with the history of American medicine. Yet in the closing decade of the eighteenth century he became for a number of years intensely interested in epidemiology, and in 1796 he published "A Collection of Papers on the Subject of Bilious Fevers, Prevalent in the United States for a Few Years Past." This was followed in 1799 by the two volume "History of Epidemics and Pestilential Diseases." It is the first American work of any pretension on general epidemiology, although preceded by various publications on the nature of certain epidemic fevers and catarrhs from the pens of some of the more prominent American physicians of that day. Webster's work was written with the idea of collecting all existent knowledge of the

pestilences and epidemics occurring in the history of the world, with the definite plan of analyzing this knowledge in the attempt to find some common causal factor.

We have seen that Webster had received no scientific training of any kind, and he had at this time no close association with any medical man. He had met Dr. Rush and corresponded with him on the founding of a magazine, but not on medical matters. Yet between 1796 and 1802 he published two medical works and sent a number of letters and articles to medical journals. His name appears frequently in the indexes of the earliest volumes of the "Medical Repository," and he is quoted as an authority on epidemics as late as 1855. This sudden excursion, or intrusion, as some of his medical contemporaries regarded it, of a literary schoolmaster and lawyer into the field of medical inquiry may well seem an extraordinary phenomenon requiring some especial explanation. Was this just another example of Webster's know-it-all conceit, or did he have legitimate reasons for breaking into medicine as a vehement advocate of certain doctrines as to the causation of disease?

We are sure of one thing: that, although not trained in science, Webster possessed a scientific mind. He was a most keen observer, and intensely interested in natural phenomena. That we know from his Journal, in which he recorded from 1784 to 1820 the events of his daily life that seemed to him most interesting and important. It was but natural that in the earlier years of this diary "the ladies" formed a not inconsiderable portion of the material of his observations; but, after he achieved marriage, they gave place to comets, meteors, floods and storms, so that his journal became largely meteorological in character. He registered temperatures, precipitation and the character of the prevailing winds. It is recorded that when the French scientist Volney, in 1796, wrote a circular letter to the American press asking for information in regard to winds, Webster sent him observations extending over a period of eighteen years. Later in life he carried out a series of experimental investigations on the nature of dew, anticipating in his method and conclusions by about fourteen years the theories of Wells in London. There can be no doubt that he had a real and vital interest in natural phenomena, but he claimed nothing as a scientist.

To these powers of observation he added a decided statistical bent. When he visited a strange city, he took pleasure in counting the houses—1,950 in Baltimore in 1785, 3,500 in New York in 1786, 2,600 below Market Street in Philadelphia—one of our earliest census attempts, if not the first one. Bills of mortality had an especial interest for him. Apparently he was always much impressed by the sight of disease. As a boy in 1776, he visited the Revolutionary camps with his brother, and was so struck with their insanitary conditions that the picture remained clear in his memory until late in life, when he wrote, "We found about half the soldiers sick with dysentery and fever, so that the very air was infected." In his diary he mentions the births and deaths occurring in his immediate community, and also the cases of illness, often giving a concise but forcible description of the main symptoms. Though not medically educated, he had a wonderful natural power of clinical observation and a facility of description that would have taken him a long way had he elected to become a physician rather than a writer of dictionaries. He was an instinctive scientist, without



special scientific training or knowledge, except that acquired through his own reading. His manifold interests thus systematically practiced in his daily life made him anticipate in a humble way the census, the department of vital statistics, the weather bureau, the health board and the school board of modern times. No wonder that some of his contemporaries thought him "all-too-sufficient." Undoubtedly his youthful and vigorous enthusiasm exhibited along so many lines of mental activity made him appear conceited. That was inevitable, and so he appeared to some of his less gifted contemporaries. One does not, however, get such an impression of the man from his own writings. Far in advance of the times he saw the need and the importance of these statistical observations, and he carried them out, as far as he was able, consistent and true to his ideal of national service.

## EXTRACTS FROM DIARY

From his diary we can take the following extracts as illustrating the points made above:

1784. January 21. Saw the comet in the evening and danced at Dr. Butler's.
- February 18. At evening rode to Weathersfield with the ladies, who reminded us of the mile-stones and bridges.
19. P. M. Rode to East Windsor; had a clergyman with us, who sang an excellent song. Mile-stones and bridges almost totally neglected.
- March 25. In the evening saw a multitude of pretty faces. But my heart is my own.
- August 30. Saw an object of charity, a cripple. . . . His arms are small and without much strength, and so confined to his body that he can move his hand only: his legs are bent under, and grow to the thighs several inches from his knees; they are wholly useless. His body is nearly perfect, his health and his speech good; he is forty-eight years of age.
- September 6. Divide my time between the ladies and my books.
1785. November 27. Take a view of the city (Petersburg), find about 300 houses; an unhealthy place.
1786. January 3. Number houses (Annapolis), 260: a pleasant city and more elegant houses in proportion than in any town in America; ground covered with verdure.
1788. April 11-14. At St. Paul's (New York). After church a mob collected at the Hospital and destroyed all the anatomical preparations, amounting to several hundred pounds value. The cause was the frequent digging up of dead bodies for dissection—the students of physic having been shamefully imprudent in taking up bodies of respectable people and without sufficient secrecy. Mob collects to the number of a thousand or two, attacks the houses of Dr. Kissam, Mr. Knight, Bailey, etc., break windows, enter and destroy furniture, etc. They then attacked the jail where some physicians were lodged for safety, a small body of armed men defend it. The governor and mayor insulted. . . .

1789.

October 24. President Washington arrives in Boston, and all the world is collected to see him. I am almost confined with the influenza. This differs from a common cold, by affecting the eyes and taking away all taste. The head appears to be fastened with chains, and the disorder is attended with a cough. The best remedy is hot liquids to produce perspiration, or a sweat brought on by violent exercise in a warm room. But if the stomach is disordered and refuses diet, a puke is necessary.

1793. September 18. The first frost appears this morning, which after the hottest summer ever known, is very agreeable. The plague rages in Philadelphia, or a disorder like it. The dysentery and influenza common all over the country, but not formidable.

September 29. Public prayers ordered every afternoon on account of the fatal sickness in Philadelphia.

- October 4. Rain. Circuit Court rise.
5. Cool. Vines first killed by frost.
6. Sunday. Pleasant. Cool.
7. Ditto. No favorable news from Philadelphia as to the fever; it still rages.
8. City Court. Pleasant.
9. Pleasant. Very warm.
10. Very warm like June.
11. Ditto; fever in Philadelphia carried off 159 in a day.
12. Cloudy.
15. Wind changes. Cool.
16. My birthday, completing 35 years, half the life of man. Very cold.
17. Cold: disorder in Philadelphia abates.

## INTEREST IN EPIDEMIOLOGY

The yellow fever epidemic of 1793, in Philadelphia, was the immediate cause of Webster's entrance into the field of epidemiology. The principal city was not only the seat of government, but also the intellectual center of the young nation. Webster had lived there for more than a year; he knew intimately its chief citizens, and corresponded with them. Among these was Oliver Wolcott, an ardent Federalist, Washington's Secretary of the Treasury after Hamilton, and later governor of Connecticut. He had been both classmate and roommate of Webster at Yale, and an intimate friendship existed between them for nearly sixty years.

September 19, 1793, he wrote to Webster, from Philadelphia:

The dreadful malady which has raged for some time in this city has prevented me from writing before. Business of all kinds is nearly suspended, my imagination could never have conceived that a short time could have effected such an alteration in Philadelphia, as has taken place—every face is sad, all conversation is avoided except at a distance, a great part of the houses are shut up—and the citizens fled; the streets in the buisy parts of the city where I now write are as silent as at midnight. For the last two days the malady has much abated, but few are taken sick—but it will be some time, however, before the panic is over and business resumed. Mrs. Wolcott and part of my family are in the country. I am here no more than absolute necessity requires. In a few days we shall begin to operate in an office, which I have concluded to open near the falls of Schuylkill.

This account which I have given is not a highly coloured one, but it is meant only for *your self*. From your friend.



Webster's sympathies and mental activities were much aroused by the accounts of the Philadelphia epidemic. In a long letter to Wolcott dated October 10, 1793, he shows that he already had formulated ideas of his own in regard to the nature of pestilential diseases, and their origin. This letter is too long to quote in full, but it is of great importance in showing what a conception of disease an unusually intelligent layman of that day might possess:

By the last accounts from Philadelphia we learn that the raging malady still spreads and is more fatal. We are told also that the College of Physicians have pronounced it the plague. I am not acquainted with diseases of this kind, but I have an idea that the plague, the yellow fever of the West Indies, and the malignant fevers of our country, are all diseases of the same genus, differing in degree and virulence, according to the climate. I take them all to be, or to proceed from a tendency to a dissolution of the blood, or to putrefaction, or to use a chemical phrase, a decomposition of the parts which compose the system.

[He then goes on to point out relationships between these epidemic diseases and latitude, physical situation, climate, temperature, bad air, and accumulation of filth in a great city.]

The great reason why the same parallels of latitude in America have not been subject to such putrid diseases hitherto, I suppose to be our long cold winters. All the causes I believe to be of inferior force. Short cold rainy summers will hardly predispose the body to putrefaction. But the last winter was unusually open and warm, and the summer past for degree and continuance of hot dry weather, perhaps was never equalled in America.

[He writes of the daily public prayers offered, and of the desire of the citizens of New England to send relief to the suffering Philadelphians.]

We are not apprehensive of danger here, and no measures to restrain travelers have been taken. Though in Boston such measures are taken. . . . One question I beg you to answer, respecting the disease. Do people sicken and die with it, without being exposed to its contagion? If so, are such instances common?

He advises that the people retire to the country, and suggests that large streams of fresh water might be brought from the falls of the Schuylkill and made to flow through the streets. This letter indicates that he has not yet fully made up his mind as to the contagious or noncontagious character of the epidemic, and the physicians of Philadelphia, and soon those of the entire country, were engaged in active dispute concerning this great problem. In Philadelphia, itself, the controversy raged with intensity. Dr. Benjamin Rush, the greatest physician of the day, and one of the greatest the American nation has ever produced, the "father of American psychiatry," was the first to recognize the nature of the disease, about the middle of the month of August. In his "Account of the Bilious Yellow Fever of 1793," one of the most masterly descriptions of an epidemic ever written, Rush writes:

This discovery of the malignity, extent and origin of a fever which I knew to be attended with great danger and mortality gave me great pain. I did not hesitate to name it

the bilious remitting yellow fever. I had once seen it epidemic in Philadelphia in 1762. . . . I expressed my distress at what I had discovered to several of my fellow citizens. The report of a malignant and mortal fever being in town spread in every direction, but it did not gain universal credit. Some of these physicians who had not seen patients in it denied that any such fever existed, and asserted (although its mortality was not denied) that it was nothing but the common annual remittent of the city. Many of the citizens joined the physicians in endeavoring to discredit the account I had given of this fever and for a while it was treated with ridicule or contempt. Indignation in some instances was excited, against me, and one of my friends, whom I advised in this early stage of the disease to leave the city, has since told me that for that advice he "had hated me."

Rush was confident that the disease had not been imported, but had arisen from the putrid exhalations of a quantity of damaged coffee on one of the wharves.

The College of Physicians declared it to be a contagious fever, and issued a statement to that effect. Rush inserted in the *American Daily Advertiser* of August 29 an address to the citizens of Philadelphia, giving his opinion as to the local origin, warning the public against the spot where the coffee lay, in the hope of checking the progress of the fever as far as it was continued by the original cause. Fresh indignation was excited against Rush; he was threatened with all sorts of indignities, even personal assault, but he remained steadfast in his convictions. The mayor ordered the coffee removed, but the epidemic lasted until November, the number of deaths between August 1 and November 9 being 4,044, a death rate of about one in ten of the total population. Rush remained at his post, doing heroic work; on October 9 he himself contracted the disease, but fortunately recovered after a long convalescence. The psychologic effects on the country were very great; the epidemic was celebrated in verse and in one of the early American novels, Brown's "Arthur Mervyn."

The next year, 1794, saw another epidemic of yellow fever in Philadelphia, of less severity, and the disease appeared in New York, New Haven, Baltimore, Charleston and elsewhere, and for the next two years sporadic cases developed in many places. In 1795, in New York, 700 people died of the disease in a few weeks, and there was great mortality in the cities of Norfolk and Charleston. Again in 1796 there were lesser epidemics, even as far north as Newburyport, Mass. The physicians of the whole country were now divided into two hostile camps, those who believed the disease was imported and contagious, and those who favored the view that it was of local origin and dependent on a local or general atmospheric state.

Webster threw himself with enthusiasm into this discussion. He had come to believe more and more in a close relationship between epidemics and natural phenomena, and now busied himself in collecting material in support of this view. His diary becomes more than

A BRIEF  
**HISTORY**  
OF  
EPIDEMIC AND PESTILENTIAL DISEASES  
WITH THE  
PRINCIPAL PHENOMENA OF THE PHYSICAL  
WORLD, WHICH PRECEDE AND ACCOMPANY THEM,  
AND  
OBSERVATIONS DEDUCED FROM THE  
FACTS STATED.  
IN TWO VOLUMES.

By NOAH WEBSTER,  
Author of *Dissertations on the English Language and several other Works*—Member of the Connecticut Academy of Arts and Sciences—of the Society for the Promotion of Agriculture, Arts and Manufactures, in the State of New York—of the American Academy of Arts and Sciences, and corresponding Member of the Historical Society in Massachusetts.

VOL. I.

HARTFORD:

PRINTED BY HUDSON & GOODWIN

1799.

[PUBLISHED ACCORDING TO ACT OF CONGRESS.]

Fig. 9.—Title-page of the "History of Epidemic and Pestilential Diseases," Hartford, 1799.



ever loaded with meteorological observations. He went to the public libraries of New York and Philadelphia, to Yale and Harvard College in search of material concerning this subject. He collected all that he could from the historical works available in the country bearing upon the occurrence of epidemic diseases in all parts of the world at all ages of history. His education and literary methods made him especially adapted to such library research, aside from his own instinctive fondness for such investigations. He turned also to the living for individual experiences with epidemic diseases; he wrote to his usual correspondents, he sent out circular letters to the prominent men of the day, to the historians, to the most prominent physicians, the list too long to be given here, to foreign countries; he took depositions of sailors and other persons, collecting an enormous amount of material which he arranged systematically and analyzed with that tireless indefatigability which seems the most remarkable characteristic of this remarkable man. During these years he carried on a most interesting correspondence with Dr. Rush bearing upon the nature of epidemic diseases.

The first fruits of these investigations were published in 1797, in a series of twenty-five letters in the public press, addressed to Dr. William Currie of Philadelphia, one of Rush's most bitter antagonists. What Rush thought of Currie is shown in a letter to Webster dated Feb. 7, 1798: "I wish you would address your letters to the College, instead of Dr. Currie. The latter is thought a weak man by his friends, and *something worse* by his enemies. His name will hurt the circulation of your book in Philadelphia."

#### THE HISTORY OF EPIDEMIC DISEASES

In his diary of 1798, Webster wrote on April 10, "Begin to write my History of Epidemic Diseases from materials which I have been three months collecting." In August of this year, yellow fever appeared in New York and Philadelphia in a more virulent form. In his diary of 1799, Webster writes:

My history of Pestilential Diseases was published in December, 1799. On the 14th of December, 1799, died the Great and Good Washington in the 68th year of his age, of a Cynanche Tonsillaris, after 24 hours illness. All America Mourns.

"A Brief History of Epidemic and Pestilential Diseases," in two volumes, was published in 1799, by Hudson and Goodwin of Hartford, and was reprinted in London, in 1800. There was some talk of a German translation, but apparently this was never made. In the introduction he explains why a publication on the subject of diseases should come from the pen of a man who has never before turned his attention to medical sciences. He distinguishes clearly glandular or inguinal plague of the Levant and the bilious or American plague commonly called yellow fever. He gives concise definitions for infection and contagion:

That quality of a disease which communicates it from a sick to a well person, on simply inhaling the breath or effluvia from the person of the diseased, at any time and in any place, may be called specific infection. Such is the contagion of the smallpox and the measles, which are, therefore, called contagious diseases.

That quality of a disease which though insalutary will not communicate it, without the aid of other causes, as warm weather, or peculiar situation and habit of body, and which requires the healthful person to be a considerable time under its influence, to give it effect, may be called *infection*. Such is the quality of the plague, in all its forms, dysentery, and all typhus fevers.

This is a very remarkable distinction for one who had no knowledge of the actual causes of these diseases. He came as close to the truth as any one could who knew nothing at all of living micro-organisms as the real causal agents of contagion and infection. As he, himself, observes, such a distinction had not been defined or used by European physicians, and it is of extraordinary interest that a layman on the basis of literary methods of study alone should come as close to scientific truth as it was possible for any one to do at that time, in the absence of all the facts of the parasitic nature of infection.

The main point of his argument is, however, the identification of general or primary contagion with a pestilential stage or constitution of the atmosphere which produces disease, or disposes the body to disease; and the chief aim of his work is to support this theory by a historical study of the relations between epidemics and natural phenomena producing such a pestilential atmosphere. After a short section in which he gives the views of various authorities on the origin of plagues and epidemics, he starts boldly at his task of historical investigation of epidemics and the concurrence of natural phenomena, beginning with the five books of Moses, through Greek and Roman times, the early Christian era, and

all of the succeeding centuries, up to the year 1799. This took up the first volume. His plan was a simple one: From all possible historical sources he collected the facts of the recorded epidemics of the world, collating with these the records of natural phenomena, such as comets, meteors, eclipses, earthquakes, famines and storms. The accompanying examples of his pages will show his method and his material.

It was but natural that Webster should be troubled by the difficulty of synchronizing dates, and he was sometimes hard put to it in his attempts to show the desired sequence between natural events and epidemics of disease. He naturally was extremely honest; but in a work of this kind, it was easy enough to ascribe any embarrassing discrepancies to historical inaccuracies or deficiencies. In his second volume he gives the bills of mortality for the last two centuries with the principal phenomena of the elements, with a discussion on the history and the tables, showing pestilential periods of the atmosphere to be indicated by an increase of

#### SECTION XII.

##### *Of the Influenza, or Epidemic Catarrh.*

AS the catarrh appears to be the disease which is most closely connected with pestilence, and the least dependent on local causes or the sensible qualities of the air, I have collected all the well-defined instances of this epidemic which have occurred to my researches, and arranged them in chronological order; placing against the year the most remarkable physical occurrences, and mentioning those which fell within the years next preceding and following:

- |       |  |
|-------|--|
| A. D. | CATARRH EPIDEMIC IN  |
| 1174, | the year <i>before</i> an eruption of Etna, and followed by great mortality. [Chasfm in the accounts of this disease.]                 |
| 1510, | the <i>same</i> year with an eruption in Iceland, and following great earthquakes. Humid air—a comet appeared the next year. [Chasfm.] |
| 1551, | the year <i>after</i> an eruption of Etna, and a comet. Season wet.  |
| 1557, | the year <i>after</i> an eruption of Etna. Season mostly wet; but in some countries dry; a comet the same year. [Chasf.]               |
| 1580, | the year <i>after</i> an eruption of Etna. Cool dry north wind—A comet.  |
| 1587, | the <i>same</i> year with an eruption in Iceland—and <i>after</i> a comet.   |
| 1591, | <i>after</i> earthquakes in 1590, and a comet.   |
| 1597, | the year <i>after</i> earthquakes and a hard winter; rainy season, and a comet the same year.  |
| 1602, | the year <i>after</i> earthquakes, volcano and severe winter. Cold and wet season.   |

Fig. 10.—Page from the "History of Epidemic and Pestilential Diseases."



mortality in different parts of the world. One chapter is given to a discussion of the "influenza or epidemic catarrh." The remainder of this volume is taken up by an argumentative discussion of the order, connection and progression of pestilential epidemics; the extent of a pestilential state of air; the phenomena attending pestilential periods, with conjectures as to the causes; a full discussion of his views on contagion and infection; finally, preventive medicine is given consideration in a long chapter on the means of preventing or mitigating pestilential diseases, and a final chapter on the disappearance of plagues in parts of Europe and of new diseases. Webster even then cannot leave his subject, and gives extensive addenda on lunar influences, electricity, popular modes of guarding against infection, venesection, vapor or mephitic air, revolution of certain comets, and at the very last a postscript—all of these suggesting immense desk labor, overfilled notebooks and prodigious use of time, and all accomplished without amanuensis or typewriter.

The upshot of it all was the chief theorem that "the principle which gives to fevers the pestilential quality consists in the *insensible* properties of the atmosphere." How near he came to the germ-theory, and yet how far away from it!

To Benjamin Rush he wrote, Nov. 26, 1799:

I feel a good deal of confidence in my proofs that epidemic diseases of all kinds proceed from chemical changes in this fluid in which we live and whose vivifying and elastic powers constitute the source of life. . . .

After all, I more and more see the difficulty of reaching the cause. That the electrical principle is the agent I am inclined to believe; indeed, I have not the power to resist the evidence of it; but by what combinations with aerial substances, I am ignorant.

Webster's work was received by the medical profession according to their individual beliefs. Those, like Rush, who believed in the local origin of epidemics, praised it highly; the other school condemned it bitterly. It was reviewed in the *Medical Repository* and other scientific journals in the same way, according to the individual beliefs of the writers. Currie of Philadelphia in his work on "The Origin of Yellow Fever," appearing in 1800, retorts in vigorous terms:

The doctrine of Mr. Webster on this subject, notwithstanding his elaborate researches, appears still more exceptional, and to be as much the creature of the imagination as the tales of the fairies.

Webster received no profit from this work. It was a work of love, or rather, of conviction. In 1801 he wrote that he was some 700 or 800 dollars out of pocket on account of it, with all his previous expenses, his labor and his toil. Nevertheless, the work had a great influence in modifying the prevalent views on the contagious nature of yellow fever, and this was of great practical and humanitarian importance. During the first half of the nineteenth century; epidemics of yellow fever continued to occur in this country, and the controversy as to its origin still went on. Webster's

views were repeatedly quoted in connection with medical ones. His work was imitated, without any credit, by Bascom of England in "A History of Epidemic Pestilence," 1851, carrying the same method of investigation up to 1848. Much of this work and conclusions are taken bodily from Webster, but his name is not even mentioned. This work had the same fate in one way as the Spelling Book: it was frequently pirated without acknowledgment.

John W. Francis, in the *International Magazine*, February, 1852, said of Webster:

If with philologists he is deemed a man of merit, it may with equal justice be said that he is to be recognized by medical men as an author of importance for his "History of Pestilence."

Today we know that these early strivers for the truth were all wrong; that the intangible something in the atmosphere was a mosquito, *Stegomyia*, and the organisms of yellow fever carried by it and injected into the human beings bitten by it. The personal bitterness of their dispute, in their ignorance, appear pathetic to us today, as children crying in the dark. But it was all necessary as a phase in the slow, painful

evolution of human knowledge, and another generation will look on our own efforts in the same light.

Noah Webster was one of America's greatest men, measured by the vigor of his mentality, the manifold character of his interests, and the value of his achievements. His courage and his indomitable will should be an inspiration to every youth

of the present age. He lacks a sympathetic biographer, to throw about his life a literary atmosphere of appeal and suggestion. His great predecessor Johnson had his Boswell, and so attained immortality in literature. Webster remains today a name on a dictionary, known to every American but almost wholly unknown in the deeper significance of his life and work.

**The Most Intelligent Animals.**—The chimpanzee is the most intelligent of all animals below man. He can learn more by training, and learn more easily than any other animal. The orang-utan is mentally next to the chimpanzee. The Indian elephant in mental capacity is third from man. The high class domestic horse is very wise and capable, but this is chiefly due to its long association with man. The wild horse mentally is a very different animal, and in intellectual scale ranks with the deer and antelopes. The lion is endowed with reasoning ability and judgment of a high order; its mind is surprisingly receptive. The grizzly bear is believed to be the wisest of all bears. The pack rat is the intellectual phenomenon of the great group of gnawing animals, and is in a class by itself. The white mountain goat seems to be the wisest of all the mountain summit animals whose habits are known. A high class dog is the animal that mentally is in closest touch with the mind, the feelings, and the impulses of man, and is the only animal that can read a man's feelings from his eyes and his facial expression.—Hornaday, "The Minds and Manners of Wild Animals," *Scribners*, 1922.

A. D.	Summer.	Winter.	Comets	Volcanoes.	DISEASES.	London	Paris.	Phil.
1778	hot	mild			typhus fevers, plague Constantinople	20399	17112	183
1779	hot Eng.	very severe		Vefu. great	health	20420		142
1780			halo	Etna	bilious fever Philadelphia, general health, plague in Smyrna	20517	Saloni	155
1781					influenza America	20709	Maff.	179
1782	dry Amc.		(me's)		influenza Europe, scarlatina began in Edinburg	17918	175	198
1783	hot	very severe	many	Heckla gre.	measles and scarlatina Amer. famin India, plague in Egypt, &c.	19029	189	232
1784	hot		comet	Vefuvius	plague in the east, angina America, canine madness	17828	140	210
1785	dry Euro.	cold		Vefuvius	angina, fevers America	18919	114	166
1786	cool	cold			yellow fever Cadix, angina America and England	20454	138	156
1787	cool		(comet)	Et. & Vefu.	plague Barbary coast	19347	110	147
1788	rainy Am.	cold	meteor		measles began N. York and Phila. codfish sickly, influenza Eu.	19697	144	126
1789	(cool spri.)	(severe Eur.)	halo	Vefuvius	{ famin in Asia, dearth in America, measles America and influ- enza, death of haddock Europe, plague in the east.	22744	129	164
1790					influenza America (and Grenada)	18038	203	145
1791	ve. hot A.	cold			plague began in Egypt, bilious pestilence began in New-York	18760	148	183
1792					plague in Egypt, scarlet fever began in America	20213	148	125
1793	hot, dry A.	mild Amer.	comet		scarlet fever Am. and Eng. pestilence Phil. dysentery Maryland	21749	148	193
1794		severe Euro.		great, of Ve.	scarlatina, pestilence New-Haven and Baltimore, dysentery	19241	122	172
1795	America				{ scarlatina, pestilence New-York and Norfolk, dysentery New-Haven, influenza England	21179	195	223
1796	hot, rainy				{ scarlatina, pestilence N. York, Boston, Charleston, Newbu- ryport, measles America	19288	216	213
1797	cool Am.	severe Ame.	comet	Andes and	{ influenza Europe, pestilence Phil. Balti. Prov. Norfolk, and Guadaloupe among cats and other animals in Turkey, canine madnefs	17014	147	197
1798	very hot	long and fe.	comet	Teaciff	pest. Phil. N. York, Bost. N. Lond. Portf. Wilming. in Turkey			
1799	ve. dry A.	(vere A. & E.)			pestilence Philadelphia, New-York, Hartford			

Fig. 11.—Table from the "History of Epidemic and Pestilential Diseases," illustrating Webster's method of correlating historical data concerning the coincidence of epidemic diseases and natural phenomena.



THE PHYSIOLOGIC EFFECTS OF  
ETHYLENE

A NEW GAS ANESTHETIC \*

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AND

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CHICAGO

During the early part of 1908, severe losses were sustained by carnation growers shipping their products into Chicago, because of the fact that these flowers, when placed in the greenhouses, would "go to sleep," whereas the buds already showing petals failed to open. Crocker and Knight<sup>1</sup> of the Hull Botanical Laboratory immediately undertook the study of the effect of illuminating gas on flowering carnations, the results of which showed that ethylene, which forms approximately 4 per cent. of the gas, is the chief constituent that determines the toxicity of the gas for plants. Their investigations showed that one part of ethylene in 2,000,000 parts of air caused the already open flowers to close, on twelve hours' exposure, whereas one part in 1,000,000 prevented the opening of buds already showing petals. Neljubow,<sup>2</sup> who had previously studied the effects of ethylene on etiolated seedlings of peas and other legumes, showed that one part of ethylene in 1,000,000 parts of air caused horizontal nutation, whereas one part in 4,000 killed the majority of the seedlings. The effects of ethylene on the metabolism of plants has been studied by Harvey,<sup>3</sup> who also studied its effect on castor oil plants<sup>4</sup> and on sweet peas,<sup>5</sup> demonstrating the fact that one part of ethylene in 1,000,000 caused the petioles of the leaves to droop, or the laminae to fold down. These plants, being sensitive to as little as 0.00001 per cent. of ethylene in the atmosphere, can be used as very delicate tests for the heavy hydrocarbons (ethylene), exceeding many fold the delicacy of any chemical test for these substances.

Because of its marked toxic effects on flowering carnations and plants, the question of the toxicity of ethylene for animals naturally arose. The extreme toxicity of ethylene for plants furthermore suggested the possibility that some of the toxic properties of ordinary illuminating gas for animals might be due to its ethylene rather than to its carbon monoxid content. Several experiments<sup>6</sup> having been performed with various concentrations of ethylene with no perceptible toxic but, if anything, mildly anesthetizing effects, it was decided to use higher concentrations, the results of which will be given later.

## METHODS

For the preparation of ethylene, we used the orthophosphoric acid method,<sup>7</sup> which consists of slowly introducing absolute alcohol from a separatory funnel led to the bottom of a 500 c.c. generating flask

containing between 100 and 150 c.c. of orthophosphoric acid, held at a temperature of from 210 to 230 C., the ethylene being allowed to pass first through an empty wash bottle (which took care of the water distilling over), thence through a series of four wash bottles containing 33 per cent. potassium hydroxid (to remove any carbon dioxid present), being finally collected, over water, into 17 liter demijohns for storing.

Hempel<sup>8</sup> advises passing the gas also through concentrated sulphuric acid (specific gravity, 1.84, to remove the aldehyd) and in addition through copper sulphate (for the absorption of phosphin, if any should be present), but the two latter precautions were found to be unnecessary. Anhydrous aluminum sulphate was used as a catalyst in some of the preparations, but with questionable results.

This method was chosen after the concentrated sulphuric acid-absolute alcohol method of Ehrlenmeyer and Bunte<sup>9</sup> had been tried, partly because much less potassium hydroxid was necessary to take care of the carbon dioxid, since no sulphur dioxid was formed, and partly because of the fact that a single portion of phosphoric acid could be used repeatedly, since the water removed from the alcohol was distilled over immediately at this temperature, the acid remaining undecomposed.

The purity of the ethylene thus prepared was determined by analysis of samples, bromin absorbing 98 per cent. plus, the unabsorbed portion proving to be air coming from the generator chamber.

The various concentrations used were obtained by displacing a certain amount of the gas in the demijohn by a measured quantity of water, corresponding to the percentage concentration of the oxygen desired, and then displacing this by oxygen, over water.

The animals used for these experiments were successively frogs, white mice, white rats, guinea-pigs, rabbits, kittens, dogs and man. Nitrogen and hydrogen were used in all experiments in corresponding concentrations for the purpose of studying the asphyxial effects of that concentration of a nonrespirable gas. Nitrous oxid was also used in like concentration for the sake of comparing the effects of ethylene with those of this well known depressant and anesthetic.

The criterion for determining anesthesia and analgesia in all experiments, except where otherwise noted, was that stage of narcotization wherein the animal lay quietly on its back and showed no signs of spontaneous movements or skeletal reflexes on tactile or even painful stimulation.

In this study, as well as in the earlier work (in 1909 and 1918), various amounts of ethylene gas were allowed to bubble through diluted dog's blood. This blood was then examined spectroscopically to detect if possible any characteristic absorption bands resulting from the chemical union of ethylene with the hemoglobin. The ethylene apparently does not enter into chemical combination with the hemoglobin of the blood, for, when the gas was passed through dilute dog's blood, the absorption bands of oxyhemoglobin remained unaltered. When, furthermore, the blood was treated with ammonium sulphid, it showed the same reduced hemoglobin bands as are obtained by the reduction of oxyhemoglobin. Ethylene probably exists in the blood during anesthesia, in a state of physical solution, as is suggested by the rapid recovery of all animals after prolonged administration of the gas.

\* From the Hull Physiological Laboratory, the University of Chicago.

1. Crocker and Knight: *Bot. Gaz.* **46**: 259-276, 1908.

2. Neljubow, D.: *Bot. Centralbl. Beitr.* **39**: 128, 1901.

3. Harvey, E. M.: *Bot. Gaz.* **60**: 193-214, 1915.

4. Harvey, E. M.: *J. Roy. Hort. Soc.* **40**: 300, 1914.

5. Harvey, E. M.: *Bot. Gaz.* **55**: 357.

6. The preliminary experiments on the physiologic properties of ethylene were performed by one of the authors (A. B. L.) and R. C. Thompson in the spring of 1918. These experiments (on frogs, white rats and one dog) indicated that the gas in the concentrations used was relatively nontoxic and seemed to possess anesthetizing and analgesic properties.

7. Barnett: *Preparations of Organic Compounds*, p. 36. Gatterman: *Preparations of Organic Chemicals*, New York, the Macmillan Company, 1906, pp. 166-170.

8. Dennis, L. M.: *Hempel's Gas Analysis*, New York, 1902, pp. 34-95, and 316.

9. Ehrlenmeyer and Bunte: *Liebig's Annals*, **168**: 64; **192**: 244.



The device for the administration of the gas mixtures is the same in principle for all experiments on white mice, white rats, guinea-pigs, rabbits and kittens, and may be briefly described, with the aid of Figure 1:

The animals placed in their respective bell jars, *F*, *G*, *H* and *I*, are sealed up by pieces of plate glass applied to the bases, these having been thickly smeared with petrolatum. Next, the pinch clamps *e*, *e'*, *f* and *f'* are removed from the rubber tubes *i*, *j*, *k* and *l* leading from the forked siphon (*a*), and water, which is kept at a constant level in the pressure bottle (*A*) by means of water forced into it through the tube (*b*) attached to the faucet (*z*), is allowed to flow into the 17 liter demijohns *B*, *C*, *D* and *E*, which contain the gases hydrogen, nitrogen, nitrous oxid and ethylene, mixed with the desired concentration of oxygen. Immediately the pinch clamps *g*, *g'*, *h* and *h'* are removed from the rubber tubes *m*, *n*, *o* and *p*, and the gas mixtures are delivered over into their respective 4 liter bell jars *F*, *G*, *H* and *I*, containing the animals used. The flow through the four branches of the forked siphon is kept constant by adjustment of the screw clamps (*c*) and (*c'*), and is easily judged by the relative level of the water in *B*, *C*, *D* and *E*. The gas mixtures, having been delivered over into *F*, *G*, *H* and *I*, at a constant rate, make exit through the glass tubes *d'*, *d''*, *d'''* and *d''''* fitted into the sides of the bell jars near their base.

In the work with frogs, wide mouthed bottles of 675 c.c. capacity were used. The gases in the desired percentage concentrations were introduced under water; the frogs being likewise introduced into their respective bottles, and these tightly corked.

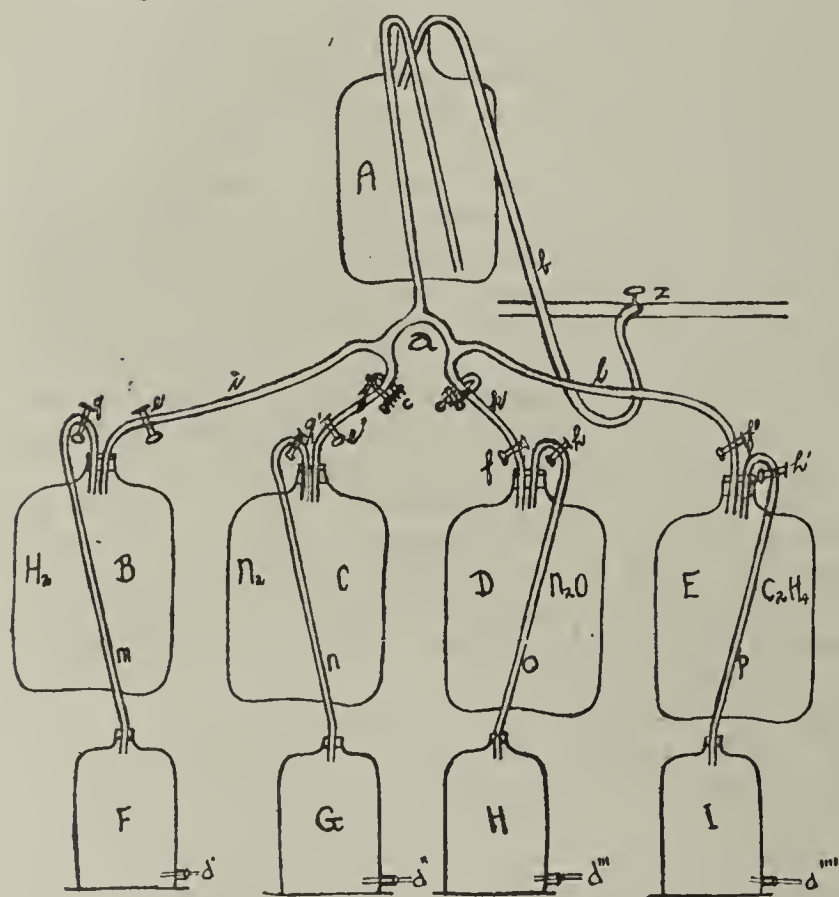


Fig. 1.—Scheme employed in studying simultaneously the effect of a given concentration of hydrogen, nitrogen, nitrous oxid and ethylene on white mice, rats, guinea-pigs, rabbits and kittens. Water siphoned from demijohn *A* displaced the various gases contained in *B*, *C*, *D* and *E*, into *F*, *G*, *H* and *I* containing the animals.

Because of the fact that the method used for the smaller animals was wasteful, it was decided to employ a closed system for the work on dogs. The apparatus devised for this work, after considerable experimentation, may be briefly described, with the aid of Figure 2:

The dog's nose, having been closely shaved, is inserted into the metal flask (*C*), which is covered by a strong rubber dam (*W*), containing a circular opening (*z*) three-fourths inch in

diameter. The motor (*F*) when started, caused the pump (*E*) to circulate the gas contained in the 17 liter demijohn (*A*) successively through tubes *a*, *b*, *c* and *d* and back into *A*. *D* is a jar containing soda lime for the absorption of carbon dioxide. *B* is an ordinary basketball bladder, which takes care of any increase in pressure in the system when oxygen is added, and also functions as a manometer in indicating the decrease in pressure due to the oxygen used up, thereby

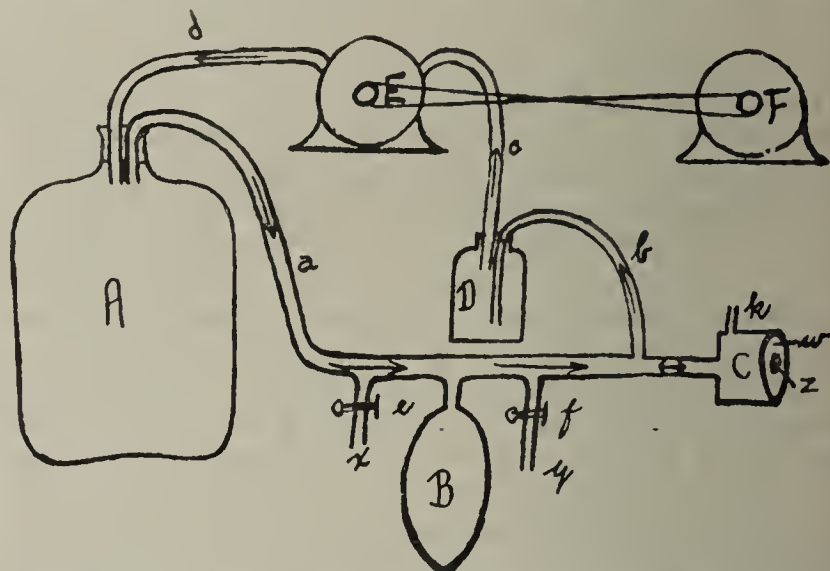


Fig. 2.—Device used in studying on dogs the anesthetizing properties of ethylene. The electrically driven pump *E-F* circulated the ethylene (in *A*) and oxygen introduced at *x* through the connecting tubing and to *C*, a mask for the dog's snout, the carbon dioxide being removed on passage of the circulating gas mixture through jar *D*, containing soda lime.

serving as a guide as to when more oxygen should be added. A rubber tube (*x*), closed by a pinch clamp (*e*), is led off from a T-tube to an oxygen tank; *y* is likewise a rubber tube, kept closed by a pinch clamp (*f*), and used for the purpose of removing 50 c.c. samples of the gas mixtures, during the experiment, for analysis. A small rubber tube (*k*) serves to connect the system with a tambour for respiratory tracings.

Small, young dogs; weighing from 4 to 8 kg., were used for these experiments. Just before the experiment, the animal was prepared for blood pressure tracings by insertion of a two-way cannula into the femoral artery under local anesthesia, a weak solution of procain being used to which 10 drops of epinephrin chlorid had been added. The experiments covered a period of from forty-five minutes to one hour.

#### RESULTS

The accompanying table contains the essential details of the pharmacologic effects of ethylene gas used in various concentrations on the different types of animals. In all experiments the effects of ethylene were compared simultaneously in the same concentration with two other irrespirable gases, hydrogen and nitrogen, as well as with nitrous oxid.

By 85, 90 or 95 per cent. of a gas we mean that, in a given experimental mixture, 85, 90 or 95 parts of the mixture consisted of ethylene, hydrogen, nitrogen or nitrous oxid, and that the other 15, 10 or 5 parts consisted of oxygen. One hundred per cent. indicates, of course, the pure gas (be it hydrogen, nitrogen, nitrous oxid or ethylene) without admixture with oxygen.

For the convenience of the reader, we point out some of the salient features of this table.

*Frogs.*—In an 85 per cent. mixture of the various gases, frogs were anesthetized after twenty minutes by ethylene. At that time the frogs in a similar concentration of hydrogen, nitrogen and nitrous oxid were practically normal. When 100 per cent. of the various gases were used, ethylene anesthetized in four minutes, nitrous oxid in fifteen minutes,



hydrogen and nitrogen not at all. *Ethylene, compared with nitrous oxid, anesthetizes frogs in approximately one-fourth the time.* Recovery from the anesthetic (ethylene) is complete within two minutes.

*White Mice.*—In from 75 to 80 per cent. mixture of ethylene, the animals are markedly depressed but not anesthetized. Animals in a similar percentage of nitrous oxid are practically normal except possibly for some evidence of excitement. Those in from 75 to 80 per cent. hydrogen or nitrogen are normal. As the percentage of gas is increased (to 85 and 90 per cent.), the animals in ethylene are anesthetized at a time (from twenty-two to thirty minutes) when those in nitrous oxid show only slight depression, and those in hydrogen and nitrogen show only a slightly increased respiration. With a 95 per cent. mixture, ethylene anesthetizes in

in the other gases, including nitrous oxid, no depression was in evidence. With a 90 per cent. mixture of ethylene, all animals were anesthetized in from ten to twenty minutes (extremes). Those in 90 per cent. nitrous oxid were anesthetized in from twenty to forty minutes (extremes). Animals in the other irrespirable gases of hydrogen and nitrogen (90 per cent.) were unaffected. In all animals anesthetized, recovery took place promptly within from one to three minutes.

From these experiments it appears that all of our animals (mice, rats, rabbits, guinea-pigs and kittens) could be anesthetized with a 90 per cent. ethylene mixture in *one-half the time necessary to anesthetize the same animals with the same percentage of nitrous oxid.*

## EFFECTS OF ETHYLENE ON DIFFERENT TYPES OF ANIMALS

Animal	Con- centra- tion of Gas Used	No. of Experi- ments Per- formed	Average Time of Experi- ment	Effects Observed			
				Hydrogen	Nitrogen	Nitrous Oxid	Ethylene
Frog.....	80%	2	30 min.	Respiration fell from 108 to 63; seemed depressed	Respiration fell from 96 to 84; less depressed	Much less depressed than one in ethylene; not anesthetized	More depressed than one in N <sub>2</sub> O; not anesthetized
	85%	5	30 min.	Seemed normal throughout; not anesthetized	Quite normal throughout; not anesthetized	Practically normal; not anesthetized	Anesthesia after 20 minutes; recovered in 2 minutes
	100%	4	30 min.	Gasping cyanosis depression; not anesthetized	Less marked effects than H <sub>2</sub> ; not anesthetized	Respiration depressed; anesthesia after 15 minutes	Respiration depressed; anesthesia after 4 minutes; recovered in 2 minutes
White mouse	75%	2	1 hr.	Normal .....	Normal .....	Normal .....	Marked depression; not anesthetized
	80%	3	70 min.	Normal .....	Normal .....	Some excitement; no depression; not anesthetized	Marked depression; equilibrium disturbed; not anesthetized
	85%	3	80 min.	Slightly depressed after 1 hour; not anesthetized	Normal .....	Slight respiratory difficulty near end; not anesthetized	Light anesthesia after 30 minutes; recovered in 3 minutes
	90%	6	100 min.	Respiration increased slightly; depressed slightly; not anesthetized	Respiration increased slightly; otherwise normal	Slightly depressed; not anesthetized	Anesthesia after 22 to 30 minutes; recovered in 1 minute
	95%	4	.....	Anesthesia after 22 to 28 minutes	Anesthesia after 18 to 28 minutes	Anesthesia after 5 to 9 minutes; maintained 10 minutes; recovered in 1 minute	Anesthesia after 3 to 4 minutes; maintained for 10 minutes; recovered in 1 minute
White rat...	85%	2	60 min.	Normal .....	Normal .....	No depression; not anesthetized	Slight depression; not anesthetized
	90%	5	55 min.	Normal .....	Normal .....	Slight depression; not anesthetized	Anesthesia after 18 to 22 minutes; recovered in 1 minute
	95%	4	50 min.	Depressed after 40 minutes	Same as rat in hydrogen	Anesthesia after 30 to 35 minutes; recovered in 2 minutes	Anesthesia after 7 to 12 minutes; recovered in less than 2 minutes
Rabbit.....	85%	3	60 min.	Normal .....	Normal .....	No depression; not anesthetized	Slightly depressed; not anesthetized
	90%	4	50 min.	Normal .....	Normal .....	Anesthesia after 20 to 30 minutes; recovered in 2 minutes	Anesthesia after 10 to 16 minutes; recovered in 2 minutes; respiration slow and regular
Guinea-Pig..	85%	3	50 min.	Normal .....	Normal .....	No depression; not anesthetized	Slight depression; not anesthetized
	90%	5	50 min.	Normal .....	Normal .....	Anesthesia after 30 to 40 minutes; recovered in 1 minute	Anesthesia after 10 to 15 minutes; recovered in 1 minute
Kitten.....	85%	2	50 min.	Normal .....	Normal .....	No depression; not anesthetized	Slight depression; not anesthetized
	90%	6	50 min.	Normal .....	Normal .....	Anesthesia after 30 to 35 minutes; recovered in 3 minutes	Anesthesia after 10 to 20 minutes; sat up after 1 minute; walked after 2 minutes

\* Anesthesia and analgesia were tested by strong pinches with hemostat introduced into bell jar through rubber dam.

from three to four minutes, nitrous oxid in from five to eight minutes, nitrogen in from eighteen to twenty-eight (?), hydrogen in from twenty-two to twenty-eight (?) minutes. Recovery is complete within one minute after the animals are returned to the air.

*Ethylene, compared with nitrous oxid, anesthetizes white mice not only in lower concentration but in one-half the time.*

*White Rats.*—Ethylene anesthetized these animals in from seven to twelve minutes when used in 95 per cent. mixture. It took from thirty to thirty-five minutes to effect the same degree of anesthesia when nitrous oxid was used. In this concentration, nitrous oxid was only slightly more effective than nitrogen or hydrogen.

*Rabbits, Guinea-Pigs and Kittens.*—In 85 per cent. ethylene these species of mammals showed slight depression, whereas

*Results on Dogs.*—All arrangements having been made for blood pressure and respiratory tracings, the dog's nose was carefully inserted into the mask, the motor started, and a demijohn of pure ethylene was introduced into the system. A small amount of oxygen was added at once, which quickly relieved all signs of asphyxia. Complete anesthesia was obtained in from two to five minutes, the animal passing through an excitement stage (showing increased knee-jerk, dilated pupils, slightly increased respiratory rate, but very little struggling) into a surgical stage with abolition of the knee, skin and light reflexes, retention of the corneal reflex, complete muscular relaxation, and pin-point pupil. Oxygen was added to the system as needed, and by careful administration of it this stage of anesthesia could be maintained for a period of about thirty minutes on one bottle (17 liters)



of ethylene; but if the oxygen had been given too freely, or if it was desired to continue this stage beyond this period, it was necessary to introduce a fresh supply of ethylene. It was found that 17 liters of 90 per cent. ethylene and 10 per cent. oxygen, with proper administration of oxygen, served to continue this stage over a similar period. During the experiment, samples of the gas mixture were removed, and the percentage concentration of ethylene determined by absorption with bromin. This varied between 85 and 90 per cent. for complete anesthesia; whereas, when the concentration fell to 80 per cent. there was complete analgesia, and absence of struggling, but no muscular relaxation. The pupil was dilated.

When the ethylene-oxygen mixture was replaced with air, the artery having been tied and the cannula removed, the dog wagged his tail in two minutes, walked in three minutes,

One animal was anesthetized for forty-five minutes, fifteen times during a period of three weeks, the results in each of these experiments being absolutely consistent with the others of the series. The animal always completely recovered in three minutes, romped and played within five minutes, and, up to date, has shown absolutely no signs of evil after-effects. The animal in question, being in a very emaciated condition at first, managed, with good feeding, to gain approximately 3 kg. in weight during the three weeks of experimentation.

*Results on Man.*—On the basis of our experiences with ethylene reported above, it seemed desirable to investigate its analgesic and anesthetizing properties on the human subject. For such trials a larger supply of ethylene was necessary. After what seemed a fruitless search we were able to obtain the gas tanked by a commercial chemical company. The gas so obtained proved to be as pure as quoted, and we proceeded

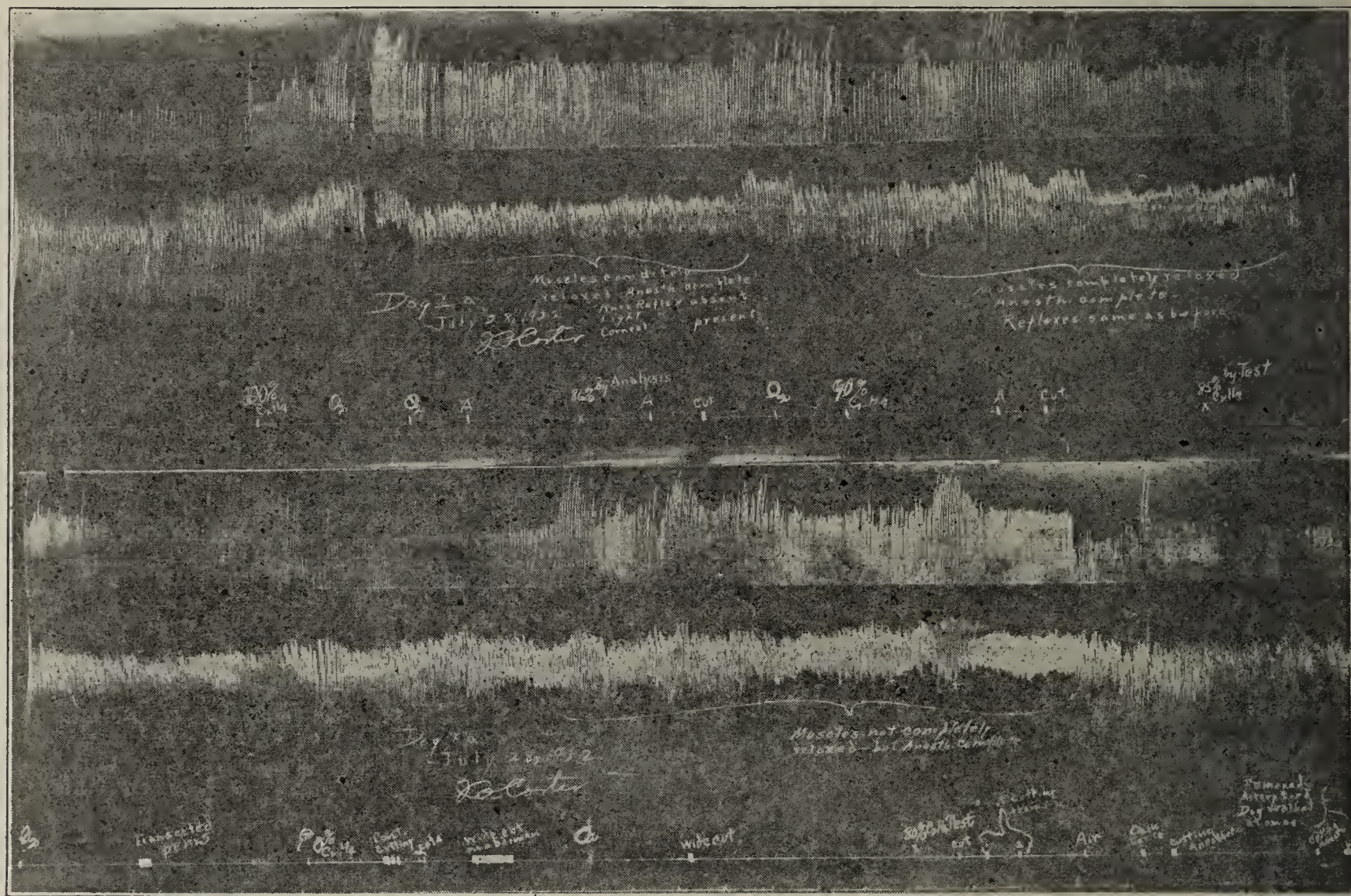


Fig. 3.—Effects of ethylene on blood pressure and respiration: A, analgesia.

and showed no signs of evil after-effects, except slight salivation, if a high concentration of ethylene had been maintained throughout the experiment. The analgesia usually lasted for two minutes after removal of the animal from the ethylene-oxygen system.

During some of these acute experiments, wide cuts were made all over the abdomen, with considerable traumatization of tissue. These procedures give rise to no muscular contractions or to reflex effects on the blood pressure or respiration. Although a laparotomy would have been a simple matter, owing to the complete muscular relaxation, this was not done, because of the fact that it was not desired to have the animal recover. In the case of all animals traumatized but allowed to recover, all wounds were previously bathed in a 4 per cent. solution of procain, and the animals showed no signs of discomfort during the few minutes they were permitted to live.

Besides the seven acute experiments, six other experiments were performed in which all observations were duplicated, except those on blood pressure and respiration.

to test out its properties in combination with oxygen on ourselves, using a Clark gas apparatus and appliances for its administration. We append briefly our experiences to date with it:

EXPERIMENT 1.—J. B. Carter, reclining, Jan. 21, 1923, held the mask to the face with one hand and held up the other arm. He was given gas plentifully mixed with oxygen until the extended arm wavered. Administration was discontinued. Just enough was given to give a sense of well-being and exhilaration. At no time was there change in the color of the face.

EXPERIMENT 2.—A. B. Luckhardt reclined and held the mask and extended the arm as did Mr. Carter. Mr. Carter gave the gas mixture. The arm soon wavered and dropped (in less than one minute). There were no asphyxial sensations. There was a sense of contentment and well being. There was no apprehension of possible danger. Everything seemed well. Pains from an infected and active frontal sinus infection left. The subject was satisfied to lie there under the influence of the gas for all time. He did not think that con-



sciousness was completely lost at any time. He came out rather rapidly from a half sleep with slight incoordination of gait lasting a few minutes.

EXPERIMENT 3.—The authors having thus tried out on themselves the immediate effects of the gas, the following subjects volunteered and were more or less deeply anesthetized:

(a) A. J. Carlson: After a minute or less the extended arm fell awkwardly and laterally against the wall with a thud. The subject was quiet throughout. Administration of the pure gas with occasional oxygen inhalations continued for three or four minutes. The subject thinks he was conscious throughout but felt extremely comfortable. He came to after a minute or so. He states that he was slightly nauseated for several hours after.

(b) J. Blumenstock: The arm dropped; he laughed a good deal at the start. This subsided. He seemed completely anesthetized. The skin of the arm was lifted up and a blunt-pointed safety pin pushed through without any indication on the part of the subject of having felt it. He was kept under for three or four minutes. The experiment was repeated later in the morning.

(c) Archer C. Sudan, N. Kleitmann and K. Phillips were similarly anesthetized far past the stage of analgesia, for in two (N. K. and A. C. S.) the safety pin was pushed through the skin without provoking reflex movement of the arm, much less sensation of pain in the subjects. A. C. S. laughed a great deal before complete anesthetization. On recovery, he talked excitedly and incoherently of his experience. Only after several minutes did his speech assume a logical tendency. He had no recollection whatever of having had the blunt safety pin thrust through the skin of his forearm. N. K., while recovering from the anesthetic but while still dazed, vomited up a large breakfast taken several hours previously. He likewise had no recollection of having vomited. Nausea was not experienced, and the subject ate a hearty dinner within an hour.

(d) J. B. Carter and A. P. Luckhardt served alternately as subjects for two further attempts, being anesthetized by each other far past the stage of analgesia. Neither felt nauseated except for possibly slight abdominal discomfort for several minutes after recovery, the latter always being prompt and complete except for slight weakness and unsteadiness of gait immediately on getting up from the couch. A. B. L. desired to turn over on his side and go to sleep. J. B. C. went through a period of excitement in coming out of the anesthesia so that restraint by holding down the extremities was found necessary.

January 28, A. B. Luckhardt and J. B. Carter were in complete surgical anesthesia. The former was anesthetized for fully ten minutes, during which time he was pinched in the ear and the upper right arm. The soles of his feet were beaten with a Stillson wrench. Of none of these procedures had he any recollection. In the course of the following week a large "black and blue" area developed on the upper arm at the place of greatest injury. In addition to such observations on ourselves; we anesthetized lightly and for a short period of time (about five minute) several other volunteers, Carl Johnson, T. Boyd and G. Turner. Mr. Johnson arose from the couch a little pale and slightly nauseated. Mr. Boyd was slightly nauseated, but this discomfort left within the next hour while he was about working in the laboratory. G. Turner passed through a period of excitement during recovery from the anesthetic.

February 4, A. B. Luckhardt was again anesthetized by J. B. Carter for a short period, with Drs. Eugene Cary and Dallas B. Phemister, surgeons, making observations. In turns, Drs. Phemister and Cary were themselves anesthetized: the former only very lightly; the latter, until deep surgical anesthesia was attained. Thereafter, A. B. Luckhardt anesthetized J. B. Carter for a period of fifteen minutes, the longest anesthesia in time and depth so far maintained in man. Although all had taken large breakfasts, none experienced anything but a transient nausea.

In all, then, we have anesthetized, more or less deeply, twelve subjects. One of the authors (A. B. L.) was anesthetized six times in three days in three weeks;

the other (J. B. C.), seven times on the three days in three weeks. In neither of us did sugar or albumin appear in the urine as a result of the experiences, nor did we experience any other evil after-effects except for a slight nausea and loss of appetite, both of very temporary nature.

#### SUMMARY

The following summary is warranted on the basis of these experiments:

1. Deep surgical anesthesia can be rapidly induced by ethylene without any sense of asphyxia, but, on the contrary, with a sense of well-being and comfort.

2. Analgesia comes on early apparently long before complete surgical anesthesia is established.

3. At a time when there is complete muscular flaccidity, the pulse rate is slightly decreased, if changed at all; respirations are slow but regular, and the countenance normal in color for the individual, or slightly paler. No cyanosis was ever observed. No subject ever showed any sign even suggestive of asphyxia.

4. The induction of anesthesia was in no way unpleasant except possibly for the first few inhalations of the *concentrated* gas, which induced reflex swallowing. A period of excitement characterized by laughing or forced movement preceded the anesthesia in some. In others, such signs were absent during induction, but were in evidence as the person recovered from the anesthesia.

5. Recovery from the anesthesia was always rapid on withdrawal of the gas mixture. In all, slight weakness and a sense of fatigue was experienced if the person arose from the couch almost immediately on waking up. Vomiting occurred in one early during recovery. In some, slight epigastric distress was experienced temporarily. In others, a slight nausea persisted for several hours after the administration of the gas. In none was nausea so pronounced or so prolonged as to interfere with the ingestion of the next meal.

#### ADVANTAGES

The possible advantages of ethylene over nitrous oxid, if used for human anesthesia, are:

1. Anesthesia may be maintained:

(a) In the absence of all signs of asphyxia.

(b) In the absence of effects on blood pressure.

(c) In the absence of dyspnea.

(d) With complete muscular relaxation.

2. It may be used in obstetrics, a state of complete analgesia being possible at a concentration of 80 per cent. ethylene.

3. There is rapid recovery after long continued administration, without evidence of after-effects.

These advantages would make possible its use in many persons and conditions in which nitrous oxid is specifically contraindicated, such as in children, in diabetic patients, in old age, in advanced arteriosclerosis, in high cerebral pressure, in operations on the brain, in major operations, and in obstetrics.

#### COMMENT

The phenomena produced by the undiluted gas are, in fact, partly asphyxial; but this factor can be removed by the addition of oxygen, when it is seen that narcosis results from the ethylene itself. This is shown on frogs, which preserve their reflexes for hours when placed in pure hydrogen, but lose them promptly (four minutes) when placed in pure ethylene.



Evidently the ethylene has a direct action on the central nervous system, a concentration of 90 per cent. maintaining the higher centers in a state of insensibility, after this has been induced by a higher concentration. This fact was first apparent in experiments on frogs, in which it was found that these animals could live in 85 per cent. illuminating gas for thirty minutes without showing any marked symptoms; whereas, when placed in a like concentration of ethylene they became completely anesthetic in twenty minutes. The motor reflexes are also abolished if a concentration of 90 per cent. is maintained after anesthesia has been induced.

There is no marked stimulation or depression of the vagus center, there being an increase in the heart rate during induction (excitement of animal), but a rapid return of this to practically normal later in the procedure. The vasomotor center remains undisturbed, except for a slight asphyxial depression during the beginning of induction, the blood pressure being practically the same at the end of a forty-five minute period of anesthesia as at the beginning. The respiratory center, likewise, is not affected in the absence of asphyxia, this fact being quite noticeable in the experiments on all the animals. Stimulation of the vomiting center sometimes occurs, during recovery, but was never observed during the induction of anesthesia, although several dogs were used soon after being fed.

Relaxation of the sphincters does not occur during the period of the anesthesia, but defecation and micturition take place immediately on recovery, in the case of the dog.

It is worthy of note that, with a small variation in the time required to produce anesthesia, the same concentration of gas can be used in the case of all animals used, and when this condition of anesthesia is induced it can be maintained practically indefinitely.

It is a well known fact that ethylene is readily oxidized in vitro to carbon dioxide by the use of an aqueous solution of chromic acid.<sup>10</sup> We have strong indications that ethylene is oxidized in vivo just as is alcohol; but this has not been definitely established.

So far we have not tried the anesthetic for minor or major surgical work. This we intend to do in the near future, using it, of course, cautiously and for only short periods of time. We recall that one dog was anesthetized for forty-five minutes fifteen times in the course of three weeks without our observing any untoward symptoms. We have been under the influence of ethylene two and three times on a given day for three consecutive Sundays. No late or evil effects were in evidence. We are therefore inclined to the view that the gas is relatively innocuous. However, we intend at an early date to determine whether a prolonged anesthetization (for two or more hours) produces in dogs any marked functional or histologic changes in the various organs of the body.

All experiences to date, involving many types of animals and including man himself, indicate that ethylene is a gas anesthetic of considerable merit; in fact, more desirable than nitrous oxide not only because of the ease of its administration but because of the several important points referred to and enumerated above.

#### CONCLUSION

This must be considered as a preliminary report of experimental work which has not been carried far

enough to warrant general clinical use. We reserve for further study and experimentation in the clinic and laboratory the many problems which the study of the gas has suggested.

In conclusion, we desire to acknowledge our indebtedness to Prof. Fred C. Koch, whose advice and help in the preparation of pure ethylene was of the greatest importance in this research, as well as to Mr. George Turner for his willing help in the conduct of some of the experiments on dogs.

## Clinical Notes, Suggestions, and New Instruments

### TRAUMATIC FAT NECROSIS OF THE BREAST

IRA COHEN, M.D., NEW YORK

The attention of physicians was directed to traumatic fat necrosis of the breast by Lee and Adair<sup>1</sup> in 1920, and again in 1922. Clinically, these tumors present many features commonly associated with carcinoma. They are hard; they may be fixed to the skin or deeper structures; there may be retraction of the nipple and enlarged axillary lymph nodes. Two characteristics which have to date constantly been described in all cases are the history of trauma and the corpulence of the patient. A certain number of malignant tumors, variously estimated at from 3 to 39 per cent., give a distinct traumatic history, so that there is nothing pathognomonic of traumatic fat necrosis except the histologic picture.

The nature of the trauma as the etiologic factor in this case of breast tumor is the reason for this report.

#### REPORT OF CASE

Mrs. S. H., aged 35, was referred because of a tumor in the left breast which had been present four weeks. In the history, the only point bearing any relation to the present complaint was that she had been under treatment for hypertension, and suffered with palpitation and precordial pains. She had had seven pregnancies, one of which resulted in a stillbirth after a difficult labor, and one a miscarriage. The youngest child was 3 years old. She nursed all her children, and never had had any trouble with her breasts till the present illness.

About five weeks prior to the time I saw her, she had an attack of severe palpitation and precordial distress, for which she applied an ice bag to the precordium. This bag was unprotected, and was allowed to remain practically in the one place for two hours. The following day she noted a burning sensation in the entire mesial half of the breast, which continued for forty-eight hours. On the second day the breast was red; on the third day the burning was replaced by pain, dull and inconstant in character, and localized in the lower mesial quadrant. Here on the fifth day a small nodule appeared. The nodule itself was not especially tender, but the skin overlying it was sensitive. About this time the pain entirely disappeared, to return the following week, and then remained with varying intensity throughout the illness. The small nodule slowly increased in size for three weeks, and then remained stationary.

The patient was an obese woman; she weighed 150 pounds (68 kg.), which was much too great for her height, with large breasts. In the mesial lower quadrant of the left breast was a tumor approximately 4 by 3 by 2 cm., which was hard and very irregular in contour, seemingly composed, at least in part, of many pea-size nodules. It was attached to the skin but not to the deeper structures. It was not sensitive. There were two axillary nodes to be felt, but one could also be felt in the opposite axilla. There was no retraction of the nipple.

In spite of the hardness and the skin attachment, the tumor did not impress me as malignant. I did not, however, at

10. Norris: Organic Chemistry, New York, McGraw Hill, 1912, pp. 43-54.

1. Lee, B. J., and Adair, F. E.: *Ann. Surg.* 72: 188 (Aug.) 1920; *Surg., Gynec. & Obst.* 34: 521 (April) 1922.



that time lay any stress on the history, but believed that the patient's attention had been directed to the breast because of the ice bag, and that we were dealing with a fibro-adenoma. Local excision was advised, with pathologic examination of the excised tumor to determine any subsequent procedure.

Under local anesthesia the tumor was excised. Grossly, it was not encapsulated, nor did it resemble on section any malignant or benign tumor that I had seen. It was made up of many nodules of fatty tissue, different in appearance from breast fat. In the histologic report, Dr. S. H. Geist stated that the specimen showed small areas of fatty necrosis containing numerous giant cells, and that the lesion was probably due to some traumatic process.

## COMMENT

To the two cases following direct blows and the three following hypodermoclysis may be added freezing from the prolonged application of an ice bag as an etiologic factor in producing a fat necrosis tumor of the breast.

Given a traumatic history in a corpulent patient with a breast tumor, the possibility of the benign nature of the growth should be kept in mind.

178 East Seventieth Street.

## PERFORATED ULCER: REPORT OF A CASE

G. B. LEMMON, M.D., SPRINGFIELD, MO.

The perforation of a gastric ulcer in a physician's office is sufficiently impressive to cause some speculation. It is natural to inquire, in such a case, whether or not any part of the diagnostic procedure was responsible. I have wondered especially whether there could be any hazard connected with the manipulation of the barium-filled stomach behind the fluoroscopic screen.

It has long been taught that the palpation of a stomach suspected of ulcer should be done with the utmost gentleness. For instance Aaron<sup>1</sup> says: "The epigastric pain is increased on pressure. Regarding the inadvisability of exerting much pressure in testing the sensibility at this spot, Brinton advises caution with respect to the pressure test; not only must it be applied with great care and delicacy in the first examination of a supposed case of gastric ulcer, but, as a rule, we can scarcely be too reluctant to repeat it. Its effects are sometimes so injurious that it is necessary strictly to prohibit the patient from all manipulations of the epigastric region, as well as from all pressure produced by dress or work."

Yet it is true that the roentgenologists find it necessary to use deep pressure and massage in fluoroscopy, and that their manipulations are at times rather vigorous.

## REPORT OF CASE

A man, aged 54, gave a history, pointing to ulcer, characterized by attacks only in the spring, for fourteen years. There was occult blood in the stool on a bloodless diet, and occult blood in the stomach contents, with 60 per cent. hemoglobin. The total acidity of the stomach contents was 66, with yeast cells present. The roentgen-ray examination revealed, on the greater curvature of the stomach, a constant spastic contracture present on the fluoroscopic screen and in the roentgenograms. The latter did not show the duodenal cap, but it was present on the screen and was normal in contour. There were no marked irregularities of the stomach outline other than that mentioned on the greater curvature; the diagnosis was ulcer of the prepyloric region of the stomach.

There was no six hour residue. After the roentgen-ray examination, the patient went home with a friend and ate a little bread and milk. In seven hours, he was back in the office to hear the conclusions in the case. As we were talking, he was seized with a sudden, severe pain in the abdomen, and became very pale, and began to sweat. He was moved to a hospital, where a surgeon performed a laparotomy. There was a large perforation where the roentgenologist had located the ulcer. For six days he did very well, but on the seventh grew suddenly worse and died.

1. Aaron, C. D.: Diseases of the Digestive Organs, Philadelphia, Lea & Febiger, 1921.

## Special Articles

## THE ESCANABA HYPERPYREXIA

## REPORT OF A SPECIAL INVESTIGATION

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[NOTE.—The case of alleged hyperpyrexia in Escanaba, Mich., created such nation-wide interest through the sensational publicity in the press that THE JOURNAL concluded that it would be desirable that the facts be known. Arrangements were made, therefore, for an investigation, a report of which follows.—Ed.]

Our investigation of the case of Evelyn Lyons resulted in a diagnosis of malingering by an hysterical woman, with the usual background of conscious and subconscious motives and with no feature of exceptional nature that would warrant devoting to it any particularly serious attention had it not been for an extraordinary notoriety given it by the press. On our arrival in Escanaba we located Dr. Harry C. Defnet, the attending physician, at St. Francis' Hospital. We first secured the past history of the patient, which was long and varied.

She had at one time or another consulted nearly every physician in Escanaba, and several in other localities, including Chicago, where she had left her thyroid gland. Another physician had removed her appendix. Dr. Defnet and other physicians in Escanaba recounted episodes in which she had figured, that savored strongly of hysteria and malingering. At one time Dr. Defnet had been called on to remove from the bladder a fragment of rubber tubing which she had inserted in an alleged attempt to catheterize herself. During her sojourn in the St. Francis Hospital for this minor operation she had acted emotionally and capriciously, causing great annoyance to the sisters, with whom she was *persona non grata* at the time of the investigation.

During the period of time in which, according to the reports in the press, she had the remarkably high fever (from 108 to 114 F.), she had repeatedly spurned medical advice. It had not been possible to make her go to bed at home or to get her into the hospital until on one occasion the civil authorities were invoked and she had to be conveyed thither in a patrol wagon. She had then remained at the hospital for but two days and a half, when she walked out of her own volition. On the Sunday of her arrival there a temperature of 101.4 F. was recorded, but for the next two days the temperature and pulse records, as taken by the nurses, were normal. At that time the readings observed by her physicians were regularly high.

The patient had had some experience in nursing and had a smattering of medical knowledge. She was involved in legal proceedings over a broken love affair at the time of this visit. All in all, the past history bristled with evidences of abnormal emotional behavior of the type which we associate in our minds with the words hysteria and malingering. In fact, so strong was the presumptive evidence of fraud that it seemed in reality almost unnecessary to examine the patient herself. During the twenty-four hours preceding the investigation, she had "carried on" in an awe-inspiring



manner, had been given large doses of morphin without the slightest visible effects and had been catheterized at times. Dr. Defnet stated to the investigators that her temperature had been recorded at 118 F. at 7 a. m., March 11, and that it seemed unlikely that she would live through the day.

The investigation now proceeded to the patient's home, where the investigators asked Dr. Defnet to catheterize her again and provided him with a pint vacuum bottle into which to deliver the urine. The temperature of the urine in the vacuum bottle was then read by means of two chemical thermometers of known accuracy, both registering between 36.8 and 37 C. (98.4 to 98.6 F.). One of the observers now placed an ordinary clinical thermometer in the usual way in the patient's mouth and left the patient to her own devices. She sent the mercury up to 109 F., or as far as it would go in this thermometer. One of the large chemical thermometers with the bulb in the axilla registered 36.8 C., apparently without her knowledge that a second instrument was being used. Thus, obviously, she had manipulated the mouth thermometer.

The patient was now informed that the physicians were acquainted with her deception. She replied with a storm of protest and a refusal to cooperate further in the investigation. Nevertheless, the investigators persisted and endeavored to secure a reading with a thermometer in the patient's mouth, under actual observation. She attempted repeatedly to remove the thermometer, taking it from her mouth and holding it upside down while arguing with the observers, moving it wildly around in her hand, voicing her fears that she might break it, etc.; indeed, Dr. Defnet stated that she had thus broken several thermometers. Finally she was induced to submit to a mouth reading and the result was normal. The patient was again asked as to her method of deception but again refused to submit any information. The physicians arranged therefore to duplicate the second test made, this time, however, keeping the patient, unaware that she was being watched, under actual observation. When left alone with the clinical thermometer in her mouth, she removed it, read it rapidly, arched her body and placed her hands under the bed coverings. She then returned it to her mouth, and when the physicians entered the room it was found that the mercury column had ascended to the top of the tube. One of the investigators then demanded that she produce the hot water bottle. She sat up in bed, searched wildly among the coverings and mattresses, and finally produced a small very hot, hot water bottle. The patient's mother stated that she had regularly kept the bottle filled for her since she complained of pains in the back and abdomen.

If from the medical standpoint there was aught to be said—and in view of the fact that so many physicians who saw her failed to make a correct diagnosis, something should be said—it would be: (1) that it is highly important in such cases to elicit and write down a complete clinical history; (2) that it is well to know that when large doses of morphin fail to affect a pain in the slightest degree the "pain" may be spurious. It is important to realize (3) that when a patient appears to be suffering from some very grave symptoms, but still behaves in a casual manner and refuses to go where the condition can be investigated and treated effectively, a discrepancy exists which requires explanation—a discrepancy between the gravity of the alleged condition and the mental attitude of the patient toward it. Finally,

(4) symptoms so extraordinary as the alleged symptoms were in this case should be very thoroughly investigated before they are given publicity.

## THE CARE AND FEEDING OF INFANTS

(Continued from page 695)

[NOTE.—This is the eleventh of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—Ed.]

### PRINCIPLES GOVERNING THE PREPARATION OF MILK MIXTURES

So far as it has been developed by the scientific knowledge of the present day, the basis to be recommended for the artificial feeding of average normal infants is the unit requirements in fat, protein, carbohydrate, salts, water and accessory food factors per pound or kilogram of body weight.

It is therefore evident that there must be a rational understanding of the infant's digestive and metabolic processes as concerns the individual ingredients of his diet, and that the quantitative relationship of the individual components of the diet to these physiologic processes must be duly considered. It soon becomes evident that while in many instances one or more of the food elements may cause digestive disturbance, poorly balanced combinations of these elements have a far greater influence on its development. If all the ingredients are in excess, it may cause a general upset to develop rapidly; but the insufficiency of one or more of the ingredients usually results in the more chronic type of nutritional disturbances. One of the best illustrations of the latter type is seen when proper quantities of fat and protein are fed but the carbohydrates are insufficient. A similar but less constant picture presents itself when fat is insufficient in an otherwise well balanced diet.

It is therefore necessary to consider, first, the fundamental principles governing nutrition, basing these on knowledge not only of the digestion, absorption and later metabolism of the individual food elements, but also of their relative action. It must also be remembered that an improperly constituted diet reacts on both the quantity and quality of the digestive secretions, affords pathogenic bacterial flora a suitable medium in which to develop, and accelerates or delays the intestinal reaction, having thus a direct effect on the infant's development.

While the chemical composition of the diet must be most carefully considered, its quality, as regards its freshness and purity, is equally important. Therefore, in providing a suitable food, its source, subsequent handling and finally its proper modification must be supervised. A study of the literature arising during the last half century, concerning the many theories and methods advanced for the feeding of infants, emphasizes that *no substitute has been found for human milk*.

When an infant is fed on food not primarily intended for its use, attempts at adaptation must be made, and their number as mentioned in the literature shows conclusively that no single method can possibly meet all demands.

Realizing that rigid dogmatism will ultimately lead to confusion, it is our object here to formulate prin-



ciples of feeding which are adaptable to the majority of well babies and will allow for their physiologic development. The discussion of the feeding of sick infants will be considered later. Such principles, to be worthy of recommendation, must permit of elasticity in the administration of individual ingredients and must be based on our present knowledge of the needs of the body for growth and development. *It is to be remembered that the diets to be recommended, although meeting the requirements of most infants, will be excessive for some and inadequate for others. Infants differ in their use of the food administered.*

In formulating a scientific basis for infant feeding, we must recognize that at present no hard and fast rules can be laid down for clinical application. Our present methods are still more or less empiric, and the result is dependent to a considerable degree on the wide range of food tolerance of the healthy infant. Hence in order to insure success the physician must depend on his own clinical observations.

The needs of the normal breast-fed infant are well known. The breast-fed infant taking  $2\frac{1}{2}$  ounces of milk per pound of body weight receives fat, 2.6, protein, 1.1, and carbohydrate, 5 gm., daily for each pound of weight. So long as he receives daily  $2\frac{1}{2}$  ounces of breast milk per pound of his body weight, it matters little to him whether he is given frequent feedings of small amounts or the more desirable larger individual feedings at longer intervals.

It should be emphasized that the needs of the artificially fed infant for the various food elements must be interpreted on the same basis of unit requirements per pound or kilogram of body weight. If the adoption of this method were to secure no other result than to cause a collection of facts from the various clinics for comparative study, it will have served a good purpose.

In the past, percentages of the food elements in their relation to the total milk mixture have been used, orders being written for two-thirds milk mixture, plus 5 per cent. carbohydrate, or a mixture containing fat, 2 per cent., protein, 1 per cent., and carbohydrates, 6 per cent., etc. This, more than any other method, has led to the many so-called schools of infant feeding and possible misinterpretation of end-results. In our present consideration of the infant's food requirements, his needs in fat, protein, carbohydrates, salts and water will be discussed with regard to each pound or kilogram of body weight, secondary emphasis being given to the percentages in the mixture. The German schools of pediatrics were the first to emphasize the caloric requirements of the infant and to make use of these as a basis for calculating food supply. This led in many instances to unbalanced diets, because heat units were thought of rather than food elements. The caloric content of the diet will be considered, therefore, chiefly as constituting a check on overfeeding and underfeeding as a whole and not as a basis for constructing diets.

*The question presenting itself to the practitioner is this: Can this principle be practically applied in every-day infant feeding?*

*Every formula with which feeding is begun should be looked on as experimental, and the reaction of the infant to this feeding should be carefully studied.*

If these principles are borne in mind, many an obstacle to successful infant feeding will be overcome.

The attempts toward ultrarefinement of the infant's diet have led to considerable confusion because of the

different conclusions of the various schools. Eventually infant feeding will be placed on a thoroughly scientific basis. This, however, does not answer the present-day needs, *which call for a safe and practical solution of the feeding problem for the every-day baby in every-day life.* Feeding advice commonly comes from food manufacturers, and if one preparation is not successful a rapid transition is made from one proprietary baby food to another, with untold detriment to the infant. In clinical experience, the rules advocated for feeding the normal healthy infant on simple milk mixtures with carbohydrates added, with further suggestions for the underfed, have been found safe for the baby and practical for the physician, which latter is to be neither overlooked nor taken lightly.

DATA AS TO FOOD AND FOOD REQUIREMENTS  
USED AS A BASIS FOR ESTIMATING  
THE DIET OF INFANTS

Average cow's milk contains the percentages given in Table 14.

TABLE 14.—CONTENT OF COW'S MILK

	Per Cent.
Fat .....	4.0
Protein .....	3.5
Carbohydrates .....	4.5
Calcium oxid.....	0.172

TABLE 15.—GRAMS OF FOOD ELEMENTS NEEDED AS A  
MINIMUM IN TWENTY-FOUR HOURS BY THE  
AVERAGE NORMAL ARTIFICIALLY  
FED INFANT

	Per Pound	Per Kilogram
Fat .....	1.8	4.0
Protein .....	1.5	3.5
Carbohydrates .....	5.0	11.0
Calcium oxid.....	0.08	0.17
Water .....	90.0	200.0

The grams of food elements needed as a minimum in twenty-four hours by the average normal artificially fed infant are given in Table 15. The milk or cream and skim milk needed to supply fat and protein will average 2 gm. of sugar. It will therefore be necessary to add the amount needed in excess of this, one-tenth ounce (3 gm.) per pound, or 6.6 gm. per kilogram.

For each gram of food elements in the mixture, the ingredients listed in Table 16 must be added.

TABLE 16.—INGREDIENTS TO BE ADDED FOR EACH GRAM  
OF FOOD ELEMENTS

Fat .....	$\frac{2}{10}$ oz., or 6 c.c., of cream
Protein .....	$\frac{5}{6}$ oz., or 25 c.c., of milk
Carbohydrates .....	1 oz., or 30 c.c., of milk or skim milk
Calcium oxid.....	$\frac{1}{30}$ oz., or 1 gm., of sugar
	18.5 oz., or 600 c.c., of milk or skim milk

TABLE 17.—REQUIREMENTS FOR EACH POUND OF  
BODY WEIGHT

Fat (1.8 gm.).....	$1\frac{1}{2}$ oz., or 45 c.c., of milk
Protein (1.5 gm.).....	$1\frac{1}{2}$ oz., or 45 c.c., of milk or skim milk
Carbohydrates (5.0 gm.).....	$\frac{1}{10}$ oz., or 3 gm., of sugar
Calcium oxid (0.08 gm.).....	$1\frac{1}{2}$ oz., or 45 c.c., of milk or skim milk

TABLE 18.—REQUIREMENTS FOR EACH KILOGRAM OF  
BODY WEIGHT \*

Fat (4.0 gm.).....	25 c.c. of cream; 100 c.c. of milk
Protein (3.5 gm.).....	100 c.c. (of milk or skim milk)
Carbohydrates (6.6 gm.).....	6.6 gm. of sugar
Calcium oxid (0.172).....	100 c.c.

\* No allowance made for protein in cream. Protein figured at 3.5 per cent. in milk.

(To be continued)



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SATURDAY, MARCH 17, 1923

## SOME LIMITATIONS OF ALKALI THERAPY

Aside from their somewhat indefinite employment in the treatment of a variety of unrelated "minor ills," alkalis have found a more extensive and rational application in the treatment of so-called acidosis and in gastric ulcer. The use of sodium bicarbonate to avert the disastrous effects of an impending coma in diabetes has often been attended with almost dramatic results in the direction of improvement. The doses have sometimes been very large, amounting to 30 or 40 grams a day.

Among the practitioners in this field, there has latterly been a marked change of sentiment. Joslin<sup>1</sup> of Boston, for example, who was formerly an advocate of alkali therapy, now frankly states that, although a diabetic patient theoretically needs alkali, the dangers attendant on its use in the treatment of the acid intoxication far outweigh the advantages. Specifically, he points to the possibility that the administration of alkalis over long periods may deplete the body salts, such as chlorids, which are distinctly useful. Another danger from the use of alkalis is the occurrence of nausea and vomiting, and this is real, though greatly lessened when chalk is combined with the sodium bicarbonate. When alkalis are given, large quantities of urine must be voided to remove the salts of the acid. The quantity of liquid that must be ingested is so large as to overburden the stomach, and the excretion of so much acid frequently overwhelms the kidneys, and they cease to act.

Alkali therapy has also found widespread favor in the treatment of peptic ulcer. The chronicity of the disease is so often ascribed to the irritant action of the gastric acid that the neutralization of the latter presents a rational aspect. To promote the healing process, sodium bicarbonate, calcium carbonate, magnesium oxid and bismuth subcarbonate have been used. In many instances such treatment, as the frequent successes reported in THE JOURNAL attest, has been

decidedly favorable.<sup>2</sup> Hardt and Rivers<sup>3</sup> have called attention to groups of cases in which symptoms of intoxication arise under alkali treatment. Patients with duodenal ulcer treated by the Sippy method may develop definite symptoms of toxemia associated with renal changes, increased blood urea, and normal or increased carbon dioxide combining power of the plasma. The gastric acidity during the period of toxemia is usually normal, or there is hyperacidity. When ulcer and renal complications are simultaneously present at the start, these toxic manifestations are more likely to appear and develop to a greater degree. Possibly the outcome is an expression of the as yet ill defined complex termed alkalosis. At any rate, whatever the upset which leads to untoward effects may be, therapy is likely to progress more satisfactorily when its limitations in any direction are better appreciated.

## OLD THEORIES AND NEW FACTS REGARDING THE TETANY DUE TO PARA- THYROIDECTOMY

Tetany is a symptom with which the clinician is not infrequently called on to deal. It is, furthermore, a phenomenon that can be produced experimentally in animals through surgical extirpation of the parathyroid glands. This fact has made it more easy to study the pathogenesis of tetany in order to secure directive clues with respect to effective treatment and prevention. The investigations have consequently resolved themselves largely into a consideration of the functions of the parathyroid glands. A recent writer has summarized the unsatisfactory state of present-day knowledge by pointing out the three foremost theories now being debated; namely, that the parathyroids control the metabolism of guanidin and by so doing regulate the tonus of the muscles; that they regulate the metabolism of calcium; that they are involved in the acid-base equilibrium of the body, so that their removal may cause alkalosis. The parathyroids have also been alleged to control the metabolism of sugar to some extent.

The significance of these theories has been reviewed from time to time in THE JOURNAL. Within the last year, evidence collected by various methods in several laboratories has seemed destined to bring the problem of parathyroid tetany somewhat nearer to a solution. At the University of Chicago, Dragstedt<sup>4</sup> has observed that completely thyroparathyroidectomized dogs could be kept alive, at least for a year, by diets containing large amounts of lactose. Such a regimen brings about a complete suppression of bacterial proteolysis in the intestine and the resultant production of intestinal

2. Sippy, B. W.: Gastric and Duodenal Ulcer, J. A. M. A. **64**: 1625 (May 15) 1915.

3. Hardt, L. L., and Rivers, A. B.: Toxic Manifestations Following the Alkaline Treatment of Peptic Ulcer, Arch. Int. Med. **31**: 171 (Feb.) 1923.

4. Dragstedt, L. R.: The Pathogenesis of Parathyroid Tetany, Am. J. Physiol. **63**: 408 (Feb.) 1923; Am. J. Physiol. **59**: 483, 1922; The Pathogenesis of Parathyroid Tetany, J. A. M. A. **79**: 1593 (Nov. 4) 1922.

1. Joslin, E. P.: The Treatment of Diabetes Mellitus, Philadelphia, Lea and Febiger, 1917, p. 394.



poisons. It was concluded that parathyroid tetany or depression is due to an intoxication, and that the responsible toxic substances come chiefly from the gastro-intestinal tract. They are supposed to arise through the activity of the proteolytic group of intestinal bacteria, and are probably for the most part protein cleavage products of the nature of amines. The function of the parathyroid glands is to prevent intoxication by these poisons. According to Dragstedt, the parathyroid glands do not furnish a hormone necessary for life, and dogs may be kept alive indefinitely after their removal, if treatment directed to the prevention of this toxemia of intestinal origin is carried out. Dragstedt further reports that, after a period of rigorous dietary control, parathyroidectomized dogs may be placed on mixed rations without developing tetany or depression. The mechanism of this readjustment to the loss of the parathyroids is not entirely clear, but it seems to him most likely that some other organ, probably the liver, has taken over the function of the missing tissue. However, the animals are far more susceptible to untoward dietary influences, spoiled foods and meat in particular, than are normal subjects.

In the same laboratory, Luckhardt<sup>5</sup> and his co-workers have found that completely parathyroidectomized dogs can be kept alive, without showing tetany, on a diet very rich in meat, by means of the oral administration of calcium lactate. After a time this can be stopped entirely without the appearance of tetany. The spontaneous tetany occurring thereafter at irregular intervals, presumably because of constipation or the ingestion of large quantities of unspoiled or small quantities of putrid meat or other spoiled food, can be rapidly controlled by the ingestion of calcium lactate and by the giving of enemas. On this basis, Luckhardt believes that the rôle of this calcium compound in preserving the life of completely parathyroidectomized animals is quite complex. It does not seem probable that calcium salts act by meeting a deficiency of tissue or blood or lymph calcium on the view held years ago that the tetany after removal of the parathyroids was due to a loss of body calcium (calcium diabetes).

In harmony with the foregoing findings, studies of Salvesen<sup>6</sup> at Christiania indicate the importance of the calcium factor in tetany. The advantage of the innocuous milk diets is assumed to lie in their yield of calcium in contrast with meat, which is deficient in this element. Meat diet lowers the calcium content of the blood and leads to symptoms of tetany; administration of milk or of calcium salts counteracts this. From the standpoint of Salvesen's experiments, the characteristic feature in the chemistry of parathyroid insufficiency is the drop in blood calcium, which is more marked the

more parathyroid tissue is removed. They suggest that the parathyroids control the calcium metabolism, and by doing so they influence the function not only of the muscle and nerve tissue, but probably of all organs. When the parathyroids are removed, the threshold for the excretion of calcium in the intestine is lowered. How Dragstedt's observations on the effects of dietary regulation in the prevention of tetany can be made to harmonize with the experiences of the other investigators remains to be learned. Perhaps the undoubted lack of calcium brought about through parathyroidectomy affects the permeability of the intestinal or other cells to poisons of intestinal origin; if so, the difficulty might conceivably be remedied either by supply of the element or by removal of the toxins. It remains for further investigation to develop an explanation that will encompass all the now known facts.

#### KEEPING THE BLOOD "FIT" BY EXERCISE

In the modern cult of personal hygiene, physical exercise occupies an exalted position. The experiences of thousands of persons attest the benefits that may be derived from various forms of vigorous activity. Here, as in many other instances in which the pendulum of interest swings rapidly from one enthusiasm to another, it is not always easy to identify the advantages, or to foresee the possible harms. It sometimes happens that the attempt to analyze our experiences meets unexpected difficulties, or fails to reveal any rational basis for the accepted beliefs. This has in large measure been the case with the physiology of exercise. A study of current textbooks is illuminating in this respect. They point to increased circulation, respiration, elimination, metabolism and neural activity as beneficial effects of exercise; yet one might equally well argue that these are an inevitable incident or necessary concomitant of muscular contraction rather than a specially advantageous by-product. One popular writer,<sup>1</sup> for example, points out that in vigorous activity there is an increase in the force and rate of the heart, the respirations are increased in depth and frequency, perspiration becomes more marked, and more waste is eliminated. There is in this heightened activity of the body systems a more or less complete change in the liquids of the body. He asserts that combustion of chemical compounds in the cells releases new energy; old accumulations of waste are removed, and all the mechanisms for action are put in tune. Even reflective states, he adds, are assisted by exercise, although, if carried to the point of fatigue, mental activity afterward is slowed down; and it is concluded that the scientific use of exercise involves the selection of forms and the extent of action that will favor best the particular somatic result desired.

Unfortunately, these considerations are too indefinite as to the physiology of exercise. No one questions

5. Luckhardt, A. B., and Goldberg, B.: Preservation of the Life of Completely Parathyroidectomized Dogs, *J. A. M. A.* **80**: 79 (Jan. 13) 1923. Luckhardt and Rosenbloom: *Proc. Soc. Exper. Biol. & Med.* **19**: 129, 130, 1921; *Science* **56**: 48 (July) 1922. Luckhardt and Blumenstock: *Science* **56**: 257 (Sept.) 1922.

6. Salvesen, H. A.: Studies on the Physiology of the Parathyroids, *Proc. Soc. Exper. Biol. & Med.* **20**: 204 (Jan. 17) 1923.

1. Williams, J. L.: *Personal Hygiene Applied*, Philadelphia, W. B. Saunders Company, 1922, p. 120.



that it may be good for the body in many ways. But precisely why? A muscle becomes weakened through disuse, and ultimately atrophies. Its functional ability is maintained and enhanced by exercise, and strong, well developed muscles are an obvious advantage. Recently, Broun<sup>2</sup> of the Rockefeller Institute for Medical Research has added a new chapter to the physiology of exercise, pointing to the probability that it stimulates the hematopoietic system to increased efficiency. The conclusion is based on observations of the effect of vigorous muscular activity, exhibiting itself in blood destruction. A slight decrease in the total red cell volume and hemoglobin content of the organism frequently occurs during a single day of exercise in animals previously kept under sedentary conditions. As Broun has fancifully expressed his scheme of experiment, animals long accustomed to sedentary life, and in which presumably little blood was being destroyed or made, were exercised vigorously with the idea that the blood-forming tissue might be "caught napping" and not at once make up such unusual corpuscle losses as exercise would entail. This is precisely what seems to happen, and it is particularly evidenced by the increase in the number of reticulated red corpuscles in the peripheral circulation such as always follows hemorrhage or other unusual demands made on the hematopoietic tissues for new cells.

Broun argued that the loss of blood cells which has been demonstrated in sedentary individuals after vigorous exercise produces a temporary anemia in them only because their blood-forming tissues are not in condition to compensate for the increased corpuscular wear and tear. Further investigation by him has now shown that a course of "training" through exercise greatly facilitates the functioning of the bone marrow. The latter adapts itself to the increased demands made. For this reason, in normally active individuals a virtually constant balance is maintained between blood destruction and blood formation in spite of occasional unusual exertions such as may be supposed to cause a temporarily increased blood destruction. These investigations have contributed an important chapter to the science of the physiology of exercise. They show that it must be an important factor in the maintenance of an efficient hematopoietic tissue. Anatomic evidence points in the same direction; for Külbs<sup>3</sup> long ago observed at necropsy that exercise increases the amount of red marrow. Perhaps precise information of this character will before long give a more specific meaning to the current vague statements regarding the power of exercise "to develop the organs of the vital systems."

## Current Comment

### THE EXPENDITURE OF ENERGY IN EXOPHTHALMIC GOITER

There are numerous statistics available to show the augmentation of metabolism in exophthalmic goiter. The increase in the basal exchange not infrequently amounts to more than 50 per cent., and is usually roughly proportional to the severity of the disease. Du Bois has recorded a rise of 87 per cent. in one case. This shows itself, of course, in the total energy transformations of the patients, who sometimes require a daily food intake of 5,000 calories to maintain weight, even when they are confined to bed. One can scarcely attribute all of this increment to the characteristic nervousness and restless muscular activity on the basis of the usual expenditure of energy for the contractile processes. Plummer and Boothby<sup>1</sup> have therefore determined the actual "net cost of work" in terms of energy calculated from respiratory data on various persons. Normal persons expended an average of 1.18 gram calories over the basal metabolism for each horizontal kilogrammeter of work at the approximate rate of 800 meters an hour. The cost was no greater in several patients in a debilitated condition. In contrast, however, patients with exophthalmic goiter under identical conditions of work required an average of 2.28 gram calories. The "net cost" could be reduced by operative procedure for relief of the hyperthyroidism. Plummer and Boothby are convinced that persons with moderately severe exophthalmic goiter are very inefficient in converting potential energy into any kind of motion, as they require twice as much food fuel as do normal persons for the same work. This type of disease is associated with a characteristic increase in the number of useless movements; but, in addition to this, each movement requires approximately twice the normal amount of energy for its accomplishment.

### TYPHOID FEVER IN 1922

Our annual summary of typhoid death rates in the large cities of the United States, which appeared last week, shows a continuance of the typhoid decline which has been so striking a factor of the epidemiology of this disease for the last twelve years. The slight interruption to the steady downward curve which occurred in 1921 was more than overcome in 1922, and the truly astonishing rate of 3.15 per hundred thousand has been reached. This is a little less than one sixth of the rate (19.59) for the large cities of this country in 1910. Three cities with an aggregate population of 473,975 were able to report a perfectly clean slate, not a single death from typhoid having occurred within their borders during the calendar year 1922. The main causes of indigenous urban typhoid in the United States at present seem to be contact with typhoid cases and typhoid carriers—a steadily diminishing hazard, occasional cases from contaminated shellfish and from bathing in polluted water, and, perhaps in some cities, from

2. Broun, G. O.: Blood Destruction During Exercise, *J. Exper. Med.* **36**: 481, 1922; **37**: 113 (Jan. 1) 1923; **37**: 187, 207 (Feb. 1) 1923.

3. Külbs: *Verhandl. d. Kong. f. inn. Med.* **26**: 197, 1909.

**Medicine and Superstition.**—Modern medicine is linked to the age of superstitious beliefs, of amulets and exorcisms, by its attitude toward treatment, and especially to "cures."—Sir James Mackenzie, *Brit. J. Tuberc.* **17**:14 (Jan.) 1923.

1. Plummer, H. S., and Boothby, W. M.: The Cost of Work in Exophthalmic Goiter, *Am. J. Physiol.* **63**: 406 (Feb.) 1923.



the improper disposal of excreta. Relatively few cases appear to be caused by polluted drinking-water, by milk supply, or, in the Northern cities, by inadequate sewerage. A considerable, if indeterminate, number of the typhoid deaths that occur in the large cities do not originate in the city itself, but are due either to infection contracted outside or to cases brought in for treatment. It is evident that not much further reduction in city typhoid rates can be expected until a diminution in rural typhoid can be brought about. In 1920, the rural death rate for typhoid, as reported by the Bureau of the Census, was nearly double the rate in the urban population. This condition is more marked in some parts of the country than in others. It is also true that in states with a large negro population typhoid rates are higher among the negroes than among the whites, for the same reasons probably that determine excess of typhoid in rural districts. The most encouraging feature of the whole typhoid situation is that our large American cities are no longer distributing centers of typhoid, black plague spots radiating corruption into the surrounding countryside. The two great agencies of typhoid dissemination, polluted water supplies and raw milk, are largely eliminated, and while cities of from 10,000 to 100,000 population have unquestionably much progress to make, especially in control of the milk supply, the condition in the larger cities for the most part may now be regarded with pride instead of being pointed to with obloquy as awful examples.

#### THE EXCRETION OF VITAMINS

The depletion of the body in vitamins, when these factors are not included in the food intake, is indicated by a variety of considerations. Most students of the subject are agreed that these food factors are not synthesized in the organism, so that the latter is dependent on exogenous sources for its supply. It is conceivable that the vitamins are destroyed in the body, either in the course of those reactions in which they may be physiologically concerned, or as an incident of the general chemical changes that proceed in the tissues and are usually comprehended in the expression metabolism. At any rate, it is known beyond question that all the familiar vitamins, A, B and C, pass into the milk, their content in this secretion apparently being modified by that of the intake. Equally plausible is the hypothesis that, instead of being stored or destroyed, the vitamins are eliminated from the body from time to time through the excretions, and are thus lost to the economy. Several years ago, Muckenfuss in this country asserted that traces of the antineuritic vitamin may be found in the human urine. Furthermore, the alleged presence of vitamin in the bile leads to the possibility of its loss with the feces. Now Van der Walle<sup>1</sup> of Eijkman's Laboratory at Utrecht brings added evidence in the same direction, with the further suggestion that the content of vitamin in the urine varies with the diet. Even more recently, Cooper<sup>2</sup> has demonstrated that vitamin A, if introduced in sufficient quantity into

the body, may pass into many of the secretions, including the urine. She suggests that the "alimentary vitaminuria" on diets rich in vitamin A probably indicates a limited capacity of the organism to store or destroy this factor. If this is further substantiated, the necessity of not allowing an unfavorable vitamin "balance" to arise in nutrition becomes an obvious deduction.

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### Association News

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#### THE SAN FRANCISCO SESSION

##### American Medical Scenic Special

A special train has been arranged for to leave Chicago over the Burlington Railroad at 11 p. m., June 20. Stops will be made at Aurora, Mendota, Galesburg, Burlington, Ottumwa, Creston, Council Bluffs, Omaha, Lincoln, Denver, Colorado Springs, Glenwood Springs and Salt Lake City. This train will arrive at Omaha at 3:50 p. m., and at Lincoln about 5:30 p. m., June 21; at Denver at 7:30 a. m., June 22, where a short stop will be made, and at Colorado Springs at 10:30 a. m., June 22. A stopover of approximately twenty-four hours will be made at Colorado Springs to permit sight-seeing trips to the Garden of the Gods, Pike's Peak and other places of interest. Sleeping cars will be placed conveniently, while at Colorado Springs, to meet the convenience of the party. Leaving Colorado Springs at 4 a. m., June 23, opportunity will be had to see the Royal Gorge and the Canyon of the Arkansas in daylight. About five hours will be spent in Salt Lake City, June 24. From Salt Lake City, the train will proceed over the Western Pacific Railway, known as the Feather River Canyon route, which offers some of the most interesting sights between Chicago and the Coast. San Francisco will be reached at 5:30 p. m., June 25. This special train will be made up of the finest Pullman equipment, with dining car and observation car. More specific information can be secured by addressing J. R. Van Dyke, General Agent, Passenger Department, C. B. & Q. Railroad, 179 West Jackson Boulevard, Chicago.

##### Clothing for California Comfort

We are receiving a number of inquiries regarding the climate and character of clothing to be worn at the time of the meeting of the American Medical Association here the last week in June. At this time of the year it is likely that there will be a certain amount of wind, some fog, and the evenings will be quite chilly. Rain is not expected at this time of year, and the days will be pleasant and delightful.

Persons coming to the annual meeting should bring overcoats and evening wraps; furs are worn by San Francisco ladies in the evening at this time of year. In the southern part of the state and the central valleys the climate will be very much warmer, corresponding somewhat to the summer climate in the Eastern states. In the mountain districts and the mountain resorts the climate will more nearly approach that of San Francisco. Persons who expect to travel much in this state will be more comfortable with the ordinary weights of underclothing and with overcoats and wraps to meet the varying climates in different parts of the state.

W. E. MUSGRAVE,  
Chairman, Local Committee of Arrangements.

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#### GROUP SUBSCRIPTIONS TO HYGEIA

At a meeting of the Genesee County Medical Society, Michigan, it was voted to send *Hygeia* to each school in the county. The society forwarded a check for \$166 to cover these subscriptions. In addition to the initial subscription of more than 1,200 sent by the Allegheny County Medical Society, a later order for 446 subscriptions was received. These include the heads of charitable organizations, public officials, presidents of women's clubs, educators, clergymen and public libraries. The society offers to increase this

1. Van der Walle, N.: The Presence of the Antineuritic and Antiscorbutic Vitamins in Urine, *Biochem. J.* **16**:713, 1922.

2. Cooper, Ethel: The Distribution of the Vitamin A in the Urine and the Digestive Secretions (Man, Dog), *Am. J. Physiol.* **63**:425 (Feb.) 1923.



amount still further, provided the introductory subscription is left open. Other local societies have also sent in group subscriptions to *Hygeia*, among them, Pierce County, Washington; Cascade County, Montana; Genesee County, Michigan; Lake County, Indiana; Fergus County, Indiana; Portage County, Ohio, and Douglas County, Wisconsin. A number of societies have reported that the matter will be considered at the next meeting.

## ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 5, 6 and 7, 1923

### MEDICAL EDUCATION

MARCH 5—MORNING

The congress met in the Florentine Room of the Congress Hotel, and was called to order by Dr. Arthur Dean Bevan, chairman of the Council on Medical Education and Hospitals.

DR. LOUIS B. WILSON, Rochester, Minn., presented a report on Graduate Medical Education, which is reported on page 790.

#### Coordination of Courses of Instruction to Increase the Efficiency of the Medical Curriculum

DR. E. STANLEY RYERSON, Toronto: The subjects of the present curriculum are taught too independently in what is aptly called a "water-tight compartment" system. There is a lack of coordination between the fundamental medical sciences (anatomy and physiology) and the clinical subjects. The present method fails to educate the student in anatomy and physiology in such a way that he can recall and apply the principles learned when the occasion arises. This defect is attributed to (a) nonuse of clinical subjects to stimulate the student's interest in the first two years; (b) lack of opportunity for the student to apply his theoretical knowledge at the time he is learning it; (c) lack of opportunity for the student to develop a sufficient number of associated ideas, more especially between the theoretical fact and its practical applications; (d) the presence in the mind of the student of the false attitude that these subjects are completed once the examinations in them are passed; (e) the lack of any basis on which the student can select the important from the less important facts, and thus gain a thorough familiarity with essential facts.

#### SCOPE OF REVISED CURRICULUM

The present curriculum fails to provide the student with sufficient clinical experience. The lengthening of the course and the provision of repetition courses have failed to produce the desired improvement in the efficiency of the students. To overcome these defects, a revised curriculum should provide for: (1) instruction according to modern educational methods; (2) opportunity for the student to acquire an absolutely up-to-date education in medical science; (3) coordination between the various subjects, and especially between anatomy, physiology, pathology, medicine and surgery; (4) opportunity for the student to apply his knowledge at the time he is acquiring it; (5) more prolonged clinical experience for the student, by beginning it earlier in his course.

#### DIVISION OF SUBJECTS

The division of the subjects might be made on the basis of the particular anatomic systems to be dealt with in each year, as follows: first year, general introduction; tegumentary, muscular, articular and osseous systems; second year, cardiovascular and respiratory systems; third year, alimentary, genito-urinary and reproductive systems; fourth year, nervous system, special senses and endocrine system. In drawing up a new curriculum, consideration would have to be given to the exact way in which each fundamental scientific subject is applied in practice. It is then necessary to arrange the scientific subjects in correlation with the clinical subjects in which they are applied and numerous opportunities for the student to make the practical applications himself. The student then has not only a means of developing associated

ideas, but also a persistent and active stimulus to his endeavors.

At the beginning, the student would be given a general survey of each of the main subjects of the course, namely, anatomy, physiology, pathology, medicine and surgery. He would thus gain a clear idea of the magnitude of each subject and the relationship of the subjects to one another. Thereafter, the student would acquire a detailed knowledge of tegumentary, muscular, articular and osseous systems. In anatomy, the extremities would be dissected. Their microscopic structure would be dealt with in histology. In embryology, after a study of the whole subject, the method of the development of muscles, bones and joints would be covered. The course in pathology would include (a) pathologic histology, (b) bacteriology and (c) general pathology accompanied by demonstrations of the principles of inflammation in its various aspects. A general introductory course in medicine would cover etiology, the methods of differentiation, the interpretation of signs and symptoms, and some of the general principles underlying the prevention of disease. In surgery, the course would cover the clinical manifestations of inflammation, and injuries as they occur in the extremities.

In the second year, all departments would devote their chief attention to the cardiovascular and respiratory systems, covering in *anatomy*, the dissection, histology and embryology of the thorax, head and neck; in *physiology*, the circulation and respiration; in *biochemistry*, the chemistry of the blood and gases in the physiology of the heart and lungs; in *pharmacology*, a general study of the various pharmacologic groups and the effects produced by drugs on the heart, lungs, breast and extremities; in *pathology*, the gross histologic changes of the heart and great vessels, lungs and pleura, breast, thyroid, lip, tongue and jaws; in *medicine*, the physical examination of the heart and lungs with the diagnosis of the diseases of these viscera, and in *surgery*, conditions of the thorax, mammary glands, neck and thyroid, the lesions of the lip, tongue and jaws, and the surgical aspect of the diseases of the circulatory and respiratory systems. Injuries and diseases of particular bones and joints would also be taken up.

In the third year, attention would be devoted chiefly to the alimentary, genito-urinary and reproductive systems. In anatomy, the dissection, histology and embryology of the abdomen and pelvis would be covered.

In the fourth year, the departments would devote the main part of the time to the consideration of the nervous system, organs of special sense and the endocrine system. The anatomy of the eye, ear, nose and throat, as well as the brain and spinal cord, would be studied. In physiology the student would take up the nervous system, special sense organs and the ductless glands. In pathology, he would note the results of disease and injury in the brain, cord and peripheral nerves and organs of special sense. In pathologic chemistry, the general disorders of the chemical processes of the body would be taken up, the student conducting individual chemical examinations. In medicine, the diseases of the nervous system and the ductless glands would be covered. The more important psychoses would be outlined. The treatment of the patient suffering from diseases would be covered in therapeutics. In surgery, the injuries and surgical diseases of these parts would be given. In obstetrics, the abnormal conditions arising during pregnancy, labor and the puerperium would form the syllabus, while in gynecology more advanced parts of this subject would be covered. In ophthalmology, the methods of examination of the eye, and testing sight would be dealt with. In otolaryngology, the methods of examining the ear, nose and throat, along with the tests for hearing, would be taught on patients. In pharmacology, the student would see the effects of drugs on the nervous system and the organs of special sense. In preventive medicine and hygiene, a course dealing with the problem of preventive medicine, hygiene and sanitation would be given. Such a course as that outlined above appears to be feasible, and its adoption would provide for a coordination of the courses, for more opportunities to develop associated ideas, and for the student to be in attendance at the hospitals for two years longer than he does at present.



### Revision of the Curriculum

DR. ARTHUR DEAN BEVAN, Chicago, outlined in detail the methods he followed in an investigation regarding the objections to the present-day medical curriculum. This investigation included interviews with the professors of the various laboratories and clinical departments of the medical school, special inquiry being made in regard to the opportunities for a better correlation of laboratory and clinical subjects, and in what manner the medical curriculum might be revised so as to bring laboratory and clinical subjects more nearly parallel throughout the four years. He also secured the opinions of a large number of medical students who were in the advanced classes, having completed their clinical work, in which criticisms were obtained regarding the manner in which the various laboratory and clinical subjects were taught. Their criticism may be thus summarized:

#### CRITICISMS

1. The work of the first two years is too theoretical; much of it is intended primarily for research. There is too much notebook work and too little reference to clinical application. 2. Anatomy receives much criticism; there is too little lecture work and demonstration, too little individual teaching, too much instruction by student assistants, and very little clinical application. 3. The work is considered too theoretical in biochemistry. It requires time far out of proportion to its importance. It could be made to include subjects given in laboratory diagnosis. There is much criticism of this department. Pharmacology is unsatisfactory in that its practical application is not made clear to the student. Physiology does not have enough practical application pointed out and emphasized. The pathologic department, on the whole, receives more favorable criticism than any other in the first two years.

The work of the third and fourth years is thus criticized: A better course in prescription writing should be given. More discussion on therapeutics should be given in the clinics. The definite line of treatment should be given as each case is presented. More definite instruction should be given on such therapeutic agents as the roentgen ray and radium, and the clinical value of such tests as basal metabolism and electrocardiography should be made clearer.

In medicine, better courses in laboratory diagnosis are urged. The value of the small teaching clinic is recognized. Better instruction in physical diagnosis is needed, and more systematic instruction in the large teaching clinics.

It is urged that surgery be taught with ample pathologic material, both gross and microscopic, and that its clinical application be shown by the introduction of patients illustrating the various conditions discussed. The value of the large teaching clinic is recognized, and the criticism made of operating in these large teaching clinics. They feel that little or no operating should be done in these clinics. The great value of dispensary work and of the small section hospital clinic of the ward walks is recognized. The courses on dog surgery and of surgical anatomy and operative surgery on the cadaver are favorably criticized. In obstetrics, the chief criticism is that the student sees too little pathologic obstetrics. The outside obstetric cases attended by the student under tuteur and obstetric assistant instruction are appreciated by the student and criticized favorably. The instruction in the specialties—eye, ear, nose and throat and dermatology, pediatrics and neurology—receives fairly generally favorable criticism. I have also obtained from a number of interns and senior students their opinions of the fifth hospital or intern year, and they all regard it as absolutely essential, and more than 90 per cent. prefer a mixed to a single service.

#### PLAN FOR REVISING CURRICULUM

On the basis of the foregoing study, I venture to submit this specific plan: 1. There are certain portions of the subjects of anatomy, physiology, pathology and pharmacology which are essential in actual practice and which are used every day in clinical work and which must be mastered. 2. The sum total of the knowledge now actually required is enormous, and is sufficient to crowd the time which can be allotted to the medical curriculum. 3. The essential portions

of the daughter sciences should be taught so as to make clear their application to clinical work. This necessitates a radical change in the curriculum, the introduction of the patient and the clinic at the very beginning of the medical course.

In revising the undergraduate curriculum, we must drop those portions of the sciences which have as yet no clinical application in the hands of the general practitioner. As an illustration, a large part of the formidable subjects of biochemistry and intricate neurology should be eliminated. There should be introduced into the first year a general medical clinic in charge of a broadly trained man of the Osler type. This clinic should be given once a week, and at this clinic should be demonstrated patients who represent big general clinical problems, such as diabetes, toxic goiter, jaundice, ascites, syphilis, tuberculosis and leukemia, and the use the clinician makes of anatomy, physiology, pathology and pharmacology in handling these problems should be demonstrated. At the same time, the laboratory teachers should have access to this clinical material so that they can demonstrate examinations of blood, urine, blood pressure, basal metabolism, etc., and the laboratory side of these same clinical problems. Pathology should be continued into the clinical years as a well organized department in charge of the postmortem work and general pathology laboratories and museum. The professor of pathology should act as a consultant in important problems in pathology. Whatever revision of the medical curriculum is made, there must be no conflict of authority, and there must be good teamwork.

(To be continued)

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**John A. Andrew Clinical Society.**—The fifth annual meeting of the John A. Andrew Clinical Society will be held at the Tuskegee Institute, April 1-7. Dr. Richard H. Miller of the Massachusetts General Hospital and Dr. William B. Breed, Boston, will lecture and give surgical demonstrations.

**Personal.**—Dr. Edwin O. Williamson, Gurley, has been elected president of the Madison County Medical Society to fill the unexpired term of Dr. C. A. Grote, county health officer who has gone to Greensboro, N. C.—On the retirement of Dr. C. H. Smith, Montgomery, as physician inspector for the state convict department, the inmates of Kilby prison presented him with a gold ring as a token of their esteem.

### CALIFORNIA

**Physician Sentenced.**—Dr. G. A. Scheuer, San Francisco, was committed to jail for thirty days, it is reported, when he pleaded guilty to violation of the prohibition act, February 21.

**Personal.**—Dr. Wood C. Baker, county physician of San Mateo County, has accepted an appointment as superintendent of the new San Mateo County Community Hospital to be opened at Beresford in June.—Dr. George C. Wrigley, Sonora, has been reappointed physician of Tuolumne County.—Dr. Herbert M. Evans, professor of anatomy at the University of California, Berkeley, addressed the Alameda County Medical Society, February 22.—Dr. Clarence A. Tillotson, Dinuba, was seriously injured when the automobile in which he was driving was struck by a fire engine, February 3.—Dr. John J. Sippy, Helena, Mont., has been appointed head of the public health board of San Joaquin County, with headquarters at Stockton.

### COLORADO

**Hospital News.**—Construction work on the first three units of the Swedish National Sanatorium to be erected in Denver, will be commenced, April 1. The completed buildings will cost \$500,000, and will cover about two blocks. The institution will have a capacity of 125 beds.—A \$25,000 addition will be erected at the Fort Collins Hospital, Fort Collins, to



include two operating rooms and a roentgen-ray laboratory. —The Weld County Hospital at Greeley has recently been opened.

### CONNECTICUT

**Public Health News.**—A hearing of the Milk Regulation bill, in accordance with Section 2486 of the General Statutes, was held, March 7, in Hartford, to consider regulations regarding the manufacture and sale of ice cream and changes in the specifications for Grade A milk. —A case of yaws was recently reported from Ansonia. The health officer stated that the patient arrived in the United States two months ago from Jamaica. —The division of venereal diseases of the state department of health is holding a series of conferences, in cooperation with the Hartford Medical Society to which all physicians are invited. The first conference was given at the Hunt Memorial, Hartford, March 16, by Dr. John H. Stokes of the Mayo Clinic, Rochester, Minn.

### DISTRICT OF COLUMBIA

**Free Medical Treatment for Shriners.**—All physicians, nurses and druggists of Washington will give free treatment when necessary to the Shriners and visitors during the session of the imperial council of the Mystic Shrine in June, it was announced by Dr. Charles S. White, chairman of the medical and Red Cross committee. This service will include emergency dentistry, eye glass repairing, nursing, and prescriptions from druggists. Twenty army ambulances and ten private ambulances will be constantly on duty and within easy call.

### ILLINOIS

**Lay Educational Fund.**—More than 500 members of the Illinois State Medical Society have subscribed to a fund to publish in the newspapers of the state the profession's methods of serving the public, it is reported.

**Smallpox at Rock Island.**—Following the outbreak of smallpox at Rock Island, the city physician, Dr. A. N. Muller, has issued orders that every schoolchild must be vaccinated within the next ten days or remain away from school indefinitely. The board of health asks the public's cooperation in stamping out the threatened epidemic.

**Personal.**—Dr. George T. Palmer, president of the Illinois State Tuberculosis Association, lectured at Louisville recently, during the celebration of "Health Week." —Dr. Albert W. Bradford has returned to his home in Lacon from the Proctor Hospital where he has been a patient with a broken leg for seven weeks. —The Joseph A. Holmes Safety Association of Washington, D. C., has awarded the gold medal of the society to Dr. Andrew W. Springs, Dewmaine, for his heroic work in the Royalton Explosion of October, 1914. —Dr. Louise H. Keator, formerly a medical missionary to China, has been transferred to the Dixon State Hospital from the Lincoln State School and Colony.

### Chicago

**Personal.**—Dr. Charles E. Humiston and Dr. Frederick W. Besley gave addresses at the annual banquet of the Lake County Medical Society at Waukegan, March 1. —Dr. Roy C. Flickinger, Ph.D., for four years dean of the college of liberal arts at Northwestern University, tendered his resignation to President Walter Dill Scott, March 10, to become effective, July 1.

**Michael Reese Alumni Association.**—There will be a meeting of former Michael Reese interns, March 22, at Michael Reese Hospital for the purpose of organizing a Michael Reese Hospital alumni association. Every ex-intern is urged to be present if possible. Those living in distant parts who may be unable to attend are requested to send their present addresses to Dr. Ralph B. Bettman, secretary of the Internes Alumni Association, Michael Reese Hospital, Chicago.

### INDIANA

**Personal.**—Dr. Max Bahr, of the Central Indiana Hospital for the Insane, gave the last of a series of lectures on forensic psychiatry, March 8, on "Methods of Examining Insane Criminals."

**Whole Family Has Smallpox.**—Dr. Willis B. Huron of Tipton, county health officer, recently found the family of George W. Van Horn, a wife and three children, suffering from smallpox.

**Protest Against State Laboratory Examinations.**—A group of Indiana physicians whose specialty is laboratory diagnosis presented a statement to the state board of health in protest

against indiscriminate examinations made by the state hygienic laboratory. It was said that at present the state laboratory examines practically every kind of specimen sent in by physicians free of charge regardless of its having any bearing on the enforcement of public health measures, or whether the patient is a proper beneficiary of free public medical service. The natural outcome of this custom is that physicians send all types of specimens from patients who can and do pay the physicians for service which the state laboratory renders free. The state thus enters into competition with physicians whose specialty is clinical diagnosis, and at the same time pauperizes the patients at the expense of taxpayers. In order to correct this particular abuse, it was suggested that physicians be required to certify that specimens forwarded which do not concern public health measures are from indigent patients to whom the physicians are making no charge whatsoever for their services. The protest was considered by the state board of health, February 14, which directed the superintendent of the laboratory to prepare a statement to the medical profession of Indiana setting forth a policy in laboratory matters, and to prepare a certificate to be used by physicians when specimens are forwarded for examination. The secretary, Dr. W. F. King, in a letter to the editor of the *Journal of the Indiana State Medical Association* said, in part, that the state board of health will go into this whole matter fully and will have in mind the good of the medical profession as well as the public, in any action that may be taken.

### IOWA

**Summer Course at Iowa University.**—A special course for public health nurses will be a part of the summer school work at the State University of Iowa, Iowa City. The course is designed for those nurses in public health work who are unable to take the work in the regular school year. Among the courses to be given will be those in public health nursing, child hygiene, hygiene and preventive medicine, psychology, speech and sociology. The various college faculties of the entire university will be drawn on for instructors. Miss Helena R. Stewart will be director of the school.

### LOUISIANA

**Personal.**—Dr. Richard A. Bolt, Washington, D. C., director of the medical service of the American Child Health Association, gave an address at the annual meeting of the Child Welfare Association in New Orleans, February 27.

**State Medical Meeting Changed.**—The annual meeting of the Louisiana State Medical Society will be held in New Orleans, April 24-26, instead of April 10-12, as previously announced. Dr. P. T. Talbot, New Orleans, is secretary of the society.

### MARYLAND

**Personal.**—The supervisors of city charities have appointed the following staff of physicians to Bay View Hospital: Dr. Leo A. Lally, resident physician of the tuberculosis hospital; Dr. Claude G. Drace, resident physician at the general hospital; Dr. R. J. Fulton, resident hospital surgeon; Dr. I. Franklin, resident physician of the hospital for the insane, and Dr. Joseph T. Eafan, assistant resident hospital physician. —Dr. Martin F. Sloan, for eleven years superintendent of the Eudowood Sanatorium, Towson, has opened the Maple Heights Sanatorium at Sparks, for the treatment of tuberculosis. —Dr. Arthur J. Lomas, former assistant superintendent of the Johns Hopkins Hospital and at present superintendent of the Iowa State University Hospital, has been appointed superintendent to the University of Maryland Hospital, Baltimore, to succeed Dr. Kenneth B. Jones, resigned. —Dr. Charles W. Hoffman has resumed the practice of surgery and gynecology at 1102 North Charles Street, Baltimore.

### MASSACHUSETTS

**Massachusetts Association for Occupational Therapy.**—At the second annual meeting of the association, Dr. Elliott G. Brackett was elected president; Dr. John D. Adams, vice president, and Miss Greene, secretary.

**Dinner to Dr. Edsall.**—The medical staff of the Massachusetts General Hospital, Boston, gave a dinner in honor of Dr. David L. Edsall, February 27, at the University Club. Dr. Edsall has just returned from abroad. Dr. Gerardo M. Balboni was toastmaster. Dr. Frederick A. Washburn and Dr. Richard C. Cabot were among the speakers.

**Award for Malpractice.**—It is reported \$5,000 was awarded A. E. Clarke of Malden in the East Cambridge Superior



Court, March 2, in his suit for \$25,000 against Dr. Clarence H. Staples of Malden. Clarke alleged that Dr. Staples did not give his leg proper treatment, following an automobile accident and that as a result he is permanently lame.

**New England Health Institute Postponed.**—Dr. Eugene R. Kelley, state health commissioner, announced that the New England Health Institute, held in Hartford, Conn., in 1922, will not be held in Boston this year as was planned, having been postponed until 1924. This change was necessary because of the Boston Health Show, which will be held in the Mechanics Building, Boston, October 6-13.

#### MICHIGAN

**Fellowship in Pathology for Detroit College.**—Dr. George E. Potter has endowed a fellowship in pathology in the Detroit College of Medicine and Surgery, it was recently announced by the Wayne County Medical Society. The endowment amounts to \$1,000 a year.

**Violation of Medical Law.**—According to reports, Harry L. Wise, agent for D. L. Smith of the "Vitalizer" Company, Detroit, was fined \$60, with an alternative of thirty days in the House of Correction, January 12, when he pleaded guilty to a charge of violating the medical law. Smith was fined \$100 on the same charge two days earlier.

#### MISSOURI

**Personal.**—Dr. Eugene A. Scharff, superintendent of the Isolation Hospital, St. Louis, was appointed superintendent of the City Hospital, recently, to fill the vacancy caused by the recent death of Dr. Rolla Henry.—Dr. Joseph K. Phipps, Grant City, was reappointed deputy state health commissioner at the last session of the county court, for a period of three years.—Edward A. Doisy, Ph.D., has been appointed professor of biochemistry at St. Louis University School of Medicine, the appointment to take effect, August 1. Mr. Doisy is at present associate professor of biochemistry at Washington University School of Medicine, St. Louis.

#### NEW JERSEY

**Physicians Oppose Naturopathy Bill.**—A meeting of physicians was held at the state house, Trenton, February 5, to protest against the passage of Assembly Bill 58, known as the Naturopathy bill. Dr. Wells P. Eagleton, Newark, chairman of the welfare committee of the state medical society, presided.

**Illegal Practitioners Sentenced.**—According to reports from the state board of medical examiners, A. Wilson Wood, a chiropractor of Ridgefield Park, was convicted of practicing medicine and surgery without a license, February 27.—In the case of George C. Lezenby, Camden, where the evidence showed that the defendant gave only electrical treatments, the judge of the district court dismissed the suit, holding that the board of medical examiners failed to establish any proof that the defendant had violated the medical act. On the board's carrying the case to the supreme court, the judgment of the district court of the city of Camden was reversed.

#### NEW YORK

**Mumps at Sing Sing.**—An epidemic of mumps has appeared at Sing Sing prison. Thus far, only officers and attendants have contracted the disease.

**Woman Sentenced for Murder of Physician.**—Mrs. Lillian Raizen was sentenced to from twenty years to life in prison, February 27, it is reported, for the murder of Dr. Abraham Glickstein of Brooklyn.

**Health Officers' Conference.**—State Health Commissioner Hermann M. Biggs announces that the annual state conference of health officers and public health nurses will be held at the Grand Union Hotel, Saratoga Springs, June 26-28.

**Damage Suit for Necropsy.**—The trial of a suit for \$20,000 damages commenced by Mrs. Regina Abrahms, widow of Joseph Abrahms, who died, Jan. 28, 1921, against Dr. William H. Garvin, superintendent of the Kings Park State Hospital, and Dr. Walter H. Sanford of the staff has come before the supreme court in Brooklyn. Mrs. Abrahms charges that her husband's body was mutilated during the performance of a necropsy, and that necropsy was performed without her consent. This is denied by the defendants, who state that, at the time her husband was taken to the institution, Mrs. Abrahms virtually consented to a necropsy should he die there. It is also stated that Mrs. Abrahms' mother signed a formal consent.

#### New York City

**Influenza Among City Employees.**—Nearly 2,000 of the city employees are suffering from influenza and pneumonia, it is announced. Out of 32,322 employees, 1,869 are off duty owing to sickness. Out of 10,000 policemen, 620 are off, and of the fire department's 6,000 men, 380 are sick.

**Janeway Lecture.**—The Mount Sinai Hospital invites physicians and their friends to attend the E. G. Janeway Lecture to be given at the Blumenthal Auditorium, March 26, by Prof. J. J. R. MacLeod of Toronto University, Canada. His subject will be "Experimental Work on Diabetes and Insulin."

**"Face Specialists" Lose Suit.**—A verdict of \$25,000 was awarded by a jury in the supreme court, February 21, to Miss Florence Clover, according to report, in her suit against Dr. Oswald C. Stackhouse and the John Woodbury Company, Inc., charging that her face was disfigured as the result of treatment to reduce the length of her nose.

**Case of Leprosy at Bellevue.**—A case of leprosy was recorded at Bellevue Hospital, March 3, when Abraham Wiener, 50 years old, was transferred there from the Jefferson Davis Hospital. The patient was placed in the contagious ward. He came to New York about three weeks ago. This is the only case of leprosy in New York City, as far as known.

**New Health Commissioner Named.**—Mayor Hylan made official announcement of the appointment of Dr. Frank J. Monaghan to the post of health commissioner of the city of New York, to succeed Dr. Royal S. Copeland, who has become United States senator. Dr. Monaghan entered the department of health at the beginning of Mayor Hylan's first term and has been the deputy commissioner.

**Epidemic Encephalitis in New York.**—The total number of cases of epidemic (lethargic) encephalitis occurring in this city since January 1 is 370, and the number of deaths, 115. The largest number of weekly cases occurred during the weeks of February 24 and March 3, seventy-eight and sixty-eight, respectively. For the first six days of the week of March 10, there were reported thirty-eight cases, with eighteen deaths. It is believed that the outbreak has passed the peak and is on the decline.

**Benefit Performance of "Pasteur."**—Mr. Henry Miller gave a benefit performance of the play "Pasteur" by Sacha Guitry, for the New York Academy of Medicine Building Fund. It has been suggested that the proceeds be used for the maintenance of a memorial to Louis Pasteur in the proposed new building of the New York Academy of Medicine. This performance, which took place, March 14, was the first public presentation of the play in this country. The New York Academy of Medicine is conducting an intensive drive to raise the \$250,000 fund for the site of its proposed new building, the funds for which are contingent on the raising of this amount for the site.

#### OHIO

**Physician's License Restored.**—The Ohio State Medical Board reports that the license of Dr. Henry Oliver Davis, Akron, which was revoked in 1915 following his conviction for selling narcotics illegally, was restored in January, 1918.

**Physician Sentenced.**—Dr. Addison D. Hobart, Toledo, reports state, was sentenced to serve three years in the Atlanta penitentiary by Judge Killits in the federal court, March 5, when he was found guilty of violating the Harrison Narcotic Law.

**Noted Physical Chemist Dies.**—Edward W. Morley, Ph.D., Sc.D., for thirty-seven years professor of chemistry at Western Reserve University, Cleveland, and at Cleveland Medical College for the period 1873-1888, died at his home in Hartford, Conn., February 24. Dr. Morley was a corresponding member of the British Association for the Advancement of Science, an honorary member of the Royal Institute of London and the Chemical Society of London, and has served as president of both the American Association for the Advancement of Science and the American Chemical Society.

#### PENNSYLVANIA

**Personal.**—For the first time in the history of Pennsylvania, it is said, a woman has been appointed a member of the governor's cabinet. Dr. Ellen C. Potter has been named welfare commissioner by Governor Pinchot.—Dr. William G. Turnbull, superintendent of the Cresson Free State Sanatorium for Tuberculosis since its opening, has been appointed deputy commissioner of health for Pennsylvania, to succeed



Dr. John D. McLean, Harrisburg, who resigned, March 1. —Dr. Edward W. Bixby, Wilkes-Barre, has been appointed county medical director of Luzerne County, to succeed Dr. Charles H. Miner. —Dr. S. Leon Gans, chief of the division of venereal disease control, Harrisburg, has resigned, the resignation to take effect, April 1. —Dr. John F. McCullough, Pittsburgh, will read a paper on "Complete Examination in Diseases of the Upper Right Quadrant," before the semi-annual meeting of the Roentgen Ray Society of Central Pennsylvania, April 27, at Williamsport.

#### Philadelphia

**Personal.**—Dr. Richard H. Harte, formerly director of health and charities, was awarded the Distinguished Service Medal, March 7, by the War Department. Colonel Harte was medical director of the Pennsylvania Hospital's Base Unit No. 10, one of the earliest American hospitals in France.

**Smallpox Closes School.**—More than 5,000 residents of the territory bounded by Thirty-Seventh and Thirty-Ninth streets and Haverford and Fairmount avenues were under quarantine, March 8, after the discovery of one case of smallpox at 3828 Mount Vernon Street. Police lines were drawn around the restricted area at 3 o'clock, and fifty physicians in charge of Dr. A. A. Cairns of the department of health, began the work of inoculation. The Mantua Primary School, at Mount Vernon and Thirty-Eighth streets, was closed because of the quarantine. The district was the largest and most thickly populated of all that has been under quarantine in recent months, and the work of vaccination was necessarily slow, because of the large number of children in many of the families.

#### SOUTH CAROLINA

**Personal.**—Dr. Henry H. Workman, Woodruff, and Dr. Newton T. Clark, Spartanburg, were elected president and secretary, respectively, of the Spartanburg County Medical Society at the annual meeting. —Dr. William M. Love, Chester, has been appointed to the board of health to succeed Dr. William R. Wallace. —Dr. B. R. Brown, city physician and chairman of the board of health of Gaffney, with four other members of the board, resigned, February 28.

#### WASHINGTON

**Health Exposition.**—A health exposition will be conducted in Seattle, May 16-26, similar to the one recently staged in Portland. It will be conducted by the American Health Exposition organization, and will have the cooperation of the state and county medical societies. Moving pictures, lectures and health exhibits will be among the features on the program at Seattle.

#### WISCONSIN

**Physician Sentenced.**—It is reported that Dr. Henry T. Brogan, Milwaukee, convicted of fourth degree manslaughter following the death of a woman as a result of an obstetric operation, was sentenced to one year in the house of correction, February 27.

**Personal.**—Dr. Smiley Blanton of the University of Wisconsin Medical School, Madison, spoke on "Organic Changes in Dementia Praecox" before the Milwaukee Neuropsychiatric Society, February 23. —A party was tendered Dr. Gilbert Mueller on the occasion of his resignation as house physician at the Emergency Hospital, Milwaukee. Dr. Edward J. Craite, Rice Lake, has been appointed to succeed Dr. Mueller. —Dr. John M. Conroy, formerly connected with the Nopeming Sanatorium, Nopeming, Minn., has been appointed superintendent of the Pureair Sanatorium at Bayfield, to succeed Dr. M. S. Hosmer.

#### WYOMING

**Personal.**—Dr. Robert W. Hale, Thermopolis, has been appointed a member of the new state board of health by Governor Ross. —Dr. Walter H. Hassel has leased the Lusk Hospital at Lusk. This institution was recently closed.

**Northwestern Wyoming Medical Society.**—At the annual meeting of the society held in Powell recently the following officers were elected for the ensuing year: president, Dr. Francis M. Lane, Cody; vice president, Dr. Neil D. Nelson, Thermopolis, and secretary-treasurer, Dr. Frank A. Mills, Powell. Dr. Will V. Gage, Worland, read a paper on "Asthma." The March meeting of the society at Thermopolis has been postponed until June, owing to unfavorable weather and roads.

#### CANADA

**Harvey Club of Canada.**—A piece of mahogany, obtained from the Harvey home built in Folkestone, England, in the sixteenth century, has been presented to the Harvey Club of Western University, London, Ont. The specimen will be made into a gavel for the use of the president of the club.

**Canadian Medical Association.**—The annual meeting of the Canadian Medical Association will be held in Montreal, June 12-14, under the presidency of Dr. David H. Arnot, London, Ont. The association has been investigating the feasibility of establishing a college of surgeons in Canada. A committee was appointed for this purpose at the last annual session at Winnipeg, June 20-23, 1922, and will report on the matter at the Montreal meeting.

#### GENERAL

**Western Electro-Therapeutic Association.**—The fifth annual meeting of the association will be held in Kansas City, Mo., April 19-20, under the presidency of Dr. Howard Plank of Chicago. Drs. F. H. Morse, Boston, and H. H. Bowing, Rochester, Minn., will be among the speakers.

**Aid for Tuberculous Veterans.**—The sum of \$50,000 has been voted by the Knights of Columbus for the aid of tuberculous and otherwise disabled war veterans who are stranded in the Southwestern states, where they have gone in search of work and health. The money has been forwarded to national headquarters of the American Legion, who will administer the fund.

**Award for Radium Research.**—At a meeting of the American Roentgen Ray Society in Atlantic City, N. J., recently, it was announced that \$1,000 would be awarded by the society for the best original research in the field of roentgen ray, radium or radioactivity. The competition will close July 1. Drs. George E. Pfahler, Philadelphia, Frederick H. Baetjer, Baltimore, and George W. Holmes, Boston, will be the judges.

**American Congress on Internal Medicine.**—The seventh annual clinic week of the American Congress on Internal Medicine will be held in Philadelphia, April 2-7, under the presidency of Dr. Sydney R. Miller of Baltimore. The opening session will be held in Mitchell Hall, College of Physicians Building, at 2 p. m., April 2. Dr. Thomas R. Neilson, president of the College of Physicians of Philadelphia, and Dr. William Pepper, dean of the University of Pennsylvania Medical School, will give addresses.

**Recognition of National Examining Board.**—The governor of the state of Texas has announced that the certificate of the National Board of Medical Examiners will in future be recognized. February 9, Governor Cox signed an act which will permit the Massachusetts Board of Registration in Medicine to accept the certificate of the national board in place of and as equivalent to its own professional examination in determining the qualifications of a candidate for registration. This act amends Chapter 112 of the General Laws of the Commonwealth, which has required the board of registration to give its own examination to each candidate for registration in medicine. This amendment becomes effective, May 9. The national board is now officially recognized by boards of registration in twenty-three states, and recognition in three other states is expected soon. In addition to the recognition by state boards, the certificate of the National Board of Medical Examiners is accepted as equivalent to the required professional examination of the U. S. Army, Navy and the Public Health Service, by the American College of Surgeons, and by the Mayo Foundation. Reciprocal relations have also been established with the Conjoint Examining Board of England and the Triple Qualification Board of Scotland.

#### FOREIGN

**Netherlands' Contribution to Pasteur Monument.**—The committee in the Netherlands has collected and presented to Professors Borrel and Weiss at Strasbourg the sum of 10,000 francs toward the monument to Louis Pasteur in the city in which he began his scientific career.

**The Carthage Prize.**—This biennial prize was founded in 1921, and has just been awarded for the first time. The recipient is Dr. Nicolle, noted for his researches at Tunis on the transmission of typhus and on trachoma, Malta fever, leishmaniasis and other tropical diseases. He first proved transmission of typhus by lice.

**Organization of Pediatric Society in Belgium.**—In January, the Société belge de pédiatrie was organized. It is proposed to hold five meetings a year. Professor Pêchère, 30 rue des



Drapiers, Brussels, is the secretary. He is to preside at the annual meeting of pediatricians of French-speaking countries, which is to be held at Brussels in September of the current year.

**Bust of Pasteur for League of Nations.**—The Pasteur Institute of Paris and the descendants of Pasteur will present to the Council of the League of Nations a bust of Pasteur, in gratitude for the appointment of a member of the Council and a delegation from the health committee of the League of Nations to attend the centenary of Louis Pasteur at Strasbourg.

**Approaching Congresses Abroad.**—April will see the International Congress on Thalassotherapy (the sea), at Venice, April 9 to 12, with excursions to Italian watering places and to the Italian Congress on Hydrology, which meets at Palermo, April 15, Professor Ceresole, Ospedale civile, Venice, is the secretary of the international gathering. At Rome, April 5 to 7, the Italian Società freniatrica holds its sixteenth annual meeting. The secretary is Prof. F. Bonfiglio, via del Mascherino 72, Rome.

**French Ophthalmologic Congress.**—The thirty-sixth congress of the French Société d'ophtalmologie is to be held this year at Strasbourg, June 11 and the following days. The discussion on "Treatment by Subconjunctival Injections" is to be opened by Dr. Van Lint of Brussels. The French railways allow a reduction of 50 per cent. to members of the congress, and various excursions have been planned. For further details, apply to Dr. R. Onfray, 6 ave. de la Motte-Picquet, Paris.

**Bicentennial of Christopher Wren.**—The bicentenary of the death of Sir Christopher Wren was observed in London, February 25-March 3. The ceremonies were organized by the Sir Christopher Wren Bicentenary Grand Committee, consisting of representatives of thirty-eight scientific and municipal bodies. Sir Christopher Wren was president of the Royal Society from 1680 to 1682, and was the designer of the Royal College of Physicians. A memorial volume of essays on various aspects of his life and work was published, the profits being devoted to the preservation fund of St. Paul's Cathedral, of which Sir Christopher was the builder.

**Biologic Neuropsychiatric Reunions.**—Under this name, the physicians of the Asile Sainte-Anne at Paris are holding quarterly conferences to demonstrate the new biologic methods of research in nervous and mental diseases. At the January meeting, Claude gave tests of the polygraph, which records the solar reflexes and the oculocardiac reflex. Garrelon presented evidence that dogs in which hypervagotony is induced are more susceptible to the action of toxins. Aubel's data confirmed that functional tests of the liver demonstrate insufficiency of this organ in melancholia. A number of neurologists from home and abroad attended this reunion. The second is to be held early in April.

**Personal.**—Dr. Thomas Gwynne Maitland, Birmingham, England, delivered a lecture before the members of the staff of Troy Hospital, Troy, N. Y., January 17. Dr. Maitland was director of the typhus colony in Serbia during the World War.—Sir Arthur Keith delivered his six Hunterian lectures on "Man's Posture: Its Evolution and Disorders," in the theater of the Royal College of Surgeons, London, March 5-16.—Dr. Stockis, professor in the University of Liège, has been elected president of the Belgian Federation of Scientific Societies.—A course of three lectures on "Recent Work on Inborn Errors of Metabolism" was given by Sir Archibald E. Garrod at the University of London, February 28, March 7 and 14.—The honorary medical degrees conferred by the Paris University on Dr. W. W. Keen of Philadelphia and on Golgi at Pavia are to be presented at the convocation, Nov. 24, 1923.—Professor Pittaluga of Madrid has been lecturing at the Paris medical school on "Diseases of the Blood" and "Malaria." He was banqueted by the dean of the medical school, and he also spoke in Vaquez's service. Professor Recasens of Madrid will lecture at Paris in April.—The University of Bordeaux has conferred an honorary degree on Prof. Ramón y Cajal. It is the first time a degree of the kind has been given by this university outside of France.—Drs. A. Wimmer and K. Krabbe of Copenhagen have been elected corresponding members of the Société de neurologie at Paris. Dr. A. Bang, also of Copenhagen, has been elected a member of the French Cancer Research Association.

#### Deaths in Other Countries

Dr. J. J. Cox of Manchester, England, former president of the Royal Society of Medicine of Edinburgh, the Manchester Medical Society and the Manchester Clinical and Pathological Society; consulting physician to the Manchester Northern

Hospital for Women and Children; in Scotland, January 17, aged 66.—Dr. J. A. Raubenheimer, member of the South African parliament; at Oudtshoorn.—Capt. Wesley Barritt, dental surgeon of Harley Street, aged 52.—Dr. Constance Long of London, at the home of Dr. Beatrice Hinkle, New York, U. S., February 16, from pneumonia.—Prof. Christian Saugman, chief of the Vejle fjord Sanatorium in Denmark and an authority on treatment of pulmonary tuberculosis. He had recently accepted the invitation of the Royal Medical Society to lecture in England on "Thoracoplastic Operations in Pulmonary Tuberculosis."—Dr. G. J. Witkowski of Paris, a practitioner and medical historian, author of "The Nude in the Theater from Antiquity," "The Physician in the Drama," "Medical Anecdotes" and "Human Generation," now in its ninth edition.—Dr. D. Baiardi, professor of surgical pathology at Turin.—Dr. Theodore Zaymis, professor of surgery at the University of Athens.—Dr. Rafael Pastor Reig, professor of surgery at the University of Valencia, one of the editors of *Policlinica*.

#### CORRECTION

**Experimental Hydronephrosis.**—In the paper by Dr. Frank Hinman on this subject in THE JOURNAL, Feb. 3, 1923, page 315, an error has been made in the photograph labeled Fig. 2, the wrong photograph having been sent by the author. A correction appears in the author's reprints.

## Government Services

#### Aviation Examining Unit Authorized

Pursuant to instructions of the Secretary of War, the organization of Aviation Physical Examining Unit No. 16 (a Pennsylvania state unit), organized reserves, has been authorized.

#### Physical Examinations for Training Camps

In the Army Appropriation bill, provision is made for the expenditure of \$6,400,000 for civilian military training camps in the summer of 1923. The War Department is consummating plans for the summer camp activities throughout the country, by which it contemplates training 30,000 men this year. The purpose of the summer camps is to build up a civilian reserve army that could be called on in case of national emergency. Before an applicant can be enrolled he must undergo a preliminary medical examination and meet certain minimum physical requirements. Physicians who make preliminary examinations are asked to be accurate in order to save the government expense, as failure to meet the requirements results in rejection at the army camps.

#### Community Show at Army School

The Army Medical Field School held a community show at Carlisle Barracks, Pa., March 5-10, at which each department of the school presented exhibits. The technical library was thrown open, showing hundreds of volumes on medical and military tactics. The museum containing a valuable collection of miniature sanitary devices and appliances that were used by the American army in France proved an interesting exhibit.

#### Change in Triple Typhoid Vaccine

The following changes have been made in the manufacture and issue of triple typhoid vaccine at the Army Medical School:

1. The content of paratyphoid A and paratyphoid B bacilli has been reduced from 750 million each to 500 million each per cubic centimeter. The present composition of the vaccine is, therefore, 1,000 million typhoid bacilli, 500 million paratyphoid A bacilli and 500 million paratyphoid B bacilli per cubic centimeter, a total of 2,000 million per cubic centimeter.
2. The time of expiration has been extended from four to six months.
3. The vaccine will be issued in special rubber stoppered bottles as well as in ampuls.

Commercial firms are allowed a limit of twelve months on their vaccines, but the present time of expiration is four months in the United States and six months outside the country. The strength of the vaccine has been reduced in order to meet existing indications more closely.



## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Feb. 19, 1923.

#### Reforms in the Public Mental Hospitals

Considerable public attention has been directed to the administration of mental hospitals, which used to be termed lunatic asylums, by a severe attack on their administration by a physician (Dr. Lomax) who was a medical officer in one for a short period. He alleged gross cruelty and neglect of patients, which led the government to appoint a commission of inquiry; but he declined to give evidence before the commission, as he was not satisfied with its constitution. The commission made a report in which his graver charges were discredited, but it was admitted that he had called attention to certain matters which required reform and a number of recommendations were made. The following reforms have been recommended by the board of control (the official body which controls all administration): In classification, some account will be taken of the home conditions and surroundings from which the patient comes. In the appointment of superintendents, preference will be given to those who have obtained a diploma in psychologic medicine and who have served as house surgeon or house physician in a general hospital. The number of assistant medical officers will be increased. Every endeavor will be made to provide patients with occupations and, as far as possible, to arouse their interest. The question of authorizing payment to patients is under consideration. Visiting committees should consider the desirability of providing letter boxes in which patients can post their letters, and in every ward notice should be posted informing patients of their right to forward letters unopened to the authorities. The organization of after-care work needs to be strengthened and extended, with a view to facilitating the discharge of patients who, though not fully recovered, could dispense with institutional care if suitable conditions were provided. Notices should be placed in the waiting rooms of public mental hospitals to inform friends and relatives of patients of the provision of the lunacy act empowering them to apply for the discharge of a patient. Visiting committees should be strengthened by the cooperation of persons who have special qualifications and time to devote to the work. The provision of facilities for the early treatment of incipient mental disorders without certification is recommended as of great value.

#### Insurance Medical Service

Much dissatisfaction with the insurance medical service is being expressed by the representatives of friendly societies and echoed in a section of the press. Many complaints are made of grudging and perfunctory attendance, such as the writing of prescriptions without even looking at patients. On the other hand, some patients state that they have received every possible care. The fact that the physician is not paid for each attendance but receives an insurance fee, whether the patient is ill or well, is largely the basis of the trouble. The stimulation of the fee paid or payable for each attendance is gone. Moreover, as the panel patient has to pay nothing additional, no matter how often he seeks advice, there is a strong tendency for the physician's time to be wasted in attendance on patients with trivial or imaginary complaints who would never trouble about them if they had to pay. Such persons deserve only perfunctory treatment, but this very practice tends to become a habit, especially in times of rush, when the time required for patients who are really ill is wasted by those who are not. Here have the weak

point of the insurance acts. The less the time devoted to a panel patient, the better the rate of pay, for the payment remains constant. The more conscientious the physician, the worse the rate of pay. As a remedy, paying according to attendance is suggested, but there is an equally crucial objection to this. In private practice, it is to the interest of the patient to see that the physician does not run up a bill larger than is necessary. Under the insurance system, the patient has no interest whatever in the amount of the bill, and indeed, as stated, often employs the physician unnecessarily. The funds would be completely at the mercy of any physician who desired to help himself.

The time is approaching when the present contract with the panel physicians expires. Apparently, in anticipation of this, the British Medical Association has called a conference of its insurance acts committee, with representatives of the friendly societies. In an opening address, Dr. H. B. Brackenbury, chairman of the insurance acts committee, who presided, said that this was the first plenary conference of those who worked under the insurance act. The service was now seen to be far too complicated, and it was still very incomplete. There were imperfections in those who operated under the acts and imperfections in the insured persons, who in some cases avoided the act or were indifferent to it, or failed to inform themselves as to its provisions and their duties under it. Yet the work improved, manifestly. Physicians as a whole no longer were antagonistic. Disciplinary action taken in certain cases had its effect on those who were less conscientious and zealous than they should be. The regulations had been in some respects simplified, and additional benefits were beginning to mature. The first subject discussed was "title to benefit." When an insured person has chosen a physician and been accepted by him, there is no difficulty. But a difficulty may arise when one who has not gone through this formality is taken ill. In some cases, physicians charge such persons for attendance as they would private patients. The most important subject discussed was with regard to the efficiency of service rendered. A representative of the friendly societies complained of insufficient waiting room accommodation, resulting in overcrowding. In every insurance area, physicians should be available at any hour. If a particular physician was not available, it ought to be the responsibility of his servant to get into telephonic communication with another physician about an urgent case; it ought not to be left to the friends to go around to one physician after another in the hope of getting attendance.

Another complaint was that patients went on the lists of popular physicians believing that they would get personal attention, but when taken ill they never saw any one but an assistant. Physicians should not employ assistants. This objection was answered by pointing out that, in the interests of patients, newly qualified physicians required some training as assistants before they practiced on their own account. Some physicians had two doors, one for private, the other for panel patients. That should be abolished. On the part of the association, it was pointed out that, while no doubt there were "black sheep in every flock," the number of complaints in proportion to 13,500,000 insured persons was very small. In a discussion of the supply of drugs and appliances, a representative of the friendly societies remarked, quite truly, that a great deal had been heard about excessive prescribing, but what was really wanted was a campaign against excessive drugging on the part of the insured. Medicine had become a fetish. The chairman opened a discussion on the extension of services, which he divided into (1) provision of diagnostic facilities and (2) institutional or specialist treatment. The former was much less expensive and more easy than the latter. There might soon be an extension of arrangements



for certain laboratory investigations and the use of the roentgen rays for examination of fractures and other conditions. Some approved societies have already supplied such extension, but the problem is to put it on a national basis. Although considerable antagonism, rising sometimes to acrimony, has existed between the representatives of the friendly societies and those of the panel physicians, the conference was marked by agreement rather than difference and was quite amicable.

#### Regulations with Regard to Condensed Milk

The ministry of health have made new regulations as to the labeling and composition of condensed milk. Every can must bear a label specifying its contents (for example, full cream or unsweetened), and stating the equivalent volume of milk (or skimmed milk) contained in the can. Every can of condensed skim milk must be labeled "unfit for babies." The name and address of the manufacturer must appear on the label. Any instructions as to dilution must be quantitatively accurate. Condensed milk must contain not less than the following percentages of milk fat and solids:

	Milk Fat, Per Cent.	All Milk Solids, Per Cent.
Full cream, unsweetened.....	9	31
Full cream, sweetened.....	9	31
Skimmed, unsweetened.....	..	20
Skimmed, sweetened.....	..	26

The regulations will come into force, August 1, and will apply to all milk intended for sale for human consumption, whether produced in this country or imported.

#### PARIS

(From Our Regular Correspondent)

Feb. 16, 1923.

#### The Centenary of Agrégés in Medicine

Instruction in our medical schools is given by "*professeurs*," a title which, when strictly used, always signifies incumbency of a definitely established professorial chair; or by assistant professors, designated as "*agrégés*," who do not occupy such chairs. The system of *agrégés* in medical schools was established just one hundred years ago, by a royal decree dated Feb. 2, 1823. Since that time, the system has undergone many transformations. The principal change has tended to transform the *agrégé* system, with its essentially temporary character, into one of a more permanent nature. It may be mentioned that *agrégés* are appointed for a period of nine years. If, during this period, the *agrégé* did not secure a chair and thus become a professor, his career as an instructor terminated and he became an "*agrégé libre*," having then no further connection with the faculty. The situation of an *agrégé* was, therefore, quite precarious. Attempts were made to remedy this by a series of measures. Thus, a rank somewhat intermediate between the professor and the *agrégé* was created, to which was assigned the title of "*professeur adjoint*" (adjunct or associate professor). In case there was no professorship vacant, and while they were waiting for a vacancy to occur, a limited number of *agrégés* could be appointed adjunct professors and thus continue on the faculty. Another step toward giving the *agrégé* system a more permanent character was taken with the passage of the decree of March 4, 1914, according to the provisions of which the *agrégés*, on completion of the term of nine years, and also the "*agrégés libres*," may be *pérennisés*; that is, their incumbency may be regarded as permanent, until the age of retirement is reached, which is after thirty years of service. Then, the decree of Jan. 4, 1921, provided that "*agrégés pérennisés*" (*agrégés* whose incumbency has been declared permanent) may be appointed "*professeurs titulaires*" (professors without a chair). Finally, according to the decree of May 28, 1921, *agrégés* may also be appointed "*professeurs honoraires*." In

accordance with these decrees, many *agrégés* in the universities of the provinces have been declared permanent incumbents of their posts, which is a fitting recompense for their labors and years of teaching.

In connection with the celebration of the centenary of the establishment of the *agrégé* system, Dr. Mauclair, who is himself an *agrégé* of the Faculté de médecine of Paris, gives, in the *Gazette des hôpitaux*, the complete list of *agrégés* appointed for Paris during the last hundred years. This list comprises a total of 406 *agrégés*, 150 of whom were later appointed professors of the Faculté de médecine of Paris. Ten others were appointed professors on the provincial faculties, and five in other educational institutions.

#### The Necessity of Supervision of Commercial Analytic Laboratories

In view of the continually growing number of private laboratories in which are made not only chemical analyses but also bacteriologic examinations and very important biologic tests, the necessity of some system of supervision, to which attention was directed about a year ago, by Dr. Paul Salmon (*THE JOURNAL*, Jan. 21, 1922, p. 207), is becoming more and more manifest. The current number of the *Presse médicale* reports numerous examples of analyses impaired by errors or in which discordant results were given. A physician took a specimen of urine and divided it into three parts, which he left with as many different pharmacists. The first reported a correct analysis: 3.4 gm. of albumin and 42 gm. of sugar. The second found 5 gm. of albumin and no sugar; the third, 30 gm. of sugar and no albumin. While this was serious enough, the following case is more grave: A girl, aged 17, contracted a sore throat. Her father, a physician, took a smear and sent it to a well known pharmacist, who reported: "numerous streptococci; no bacilli." The father was not convinced, and sent a new smear to the pharmacist every day; and every day he received the same report. One evening he found his daughter so ill that he became alarmed and asked the pharmacist whether he was quite certain about his report, and the latter replied that he had not the slightest doubt as to its correctness, and advised the injection of antistreptococcus serum. The father then went to a confrère residing in the neighborhood. This confrère was a hospital physician who had been for a long time director of a contagious disease ward. He had scarcely entered the patient's room when, without even examining the throat, he insisted on the necessity of giving the patient immediately an injection of antidiphtheric serum. And, indeed, the cultures that were prepared in a laboratory of the Faculté de médecine showed characteristic diphtheria bacilli. In another case, a physician, basing his judgment on the findings of a pharmacist, who, without adequate training, was playing the rôle of a bacteriologist, thought he was dealing with a streptococcal pneumonia and was preparing to inject antistreptococcus serum when it was discovered that the supposed streptococci were nothing more than spherical masses of an old fuchsin solution in water colored with anilin.

In view of such errors, the consequences of which may be extremely grave, some form of supervision seems essential. The writer of the article in the *Presse médicale* finds the present state of affairs unacceptable. Whereas no one can practice medicine, and no one can sell drugs or medicinal herbs, unless he holds a diploma, it seems to be regarded as of no importance who has the legal right to perform chemical, biologic and bacteriologic tests. One would suppose it was more difficult to make an analysis than to sell a bottle of "patent medicine," and yet he who dispenses the products that the wholesalers send him is provided with a very significant diploma, while the one who makes the analysis on which the life of the patient depends may be absolutely incompetent.



Before a person should be allowed to make medical analyses, he should pass a series of tests and should then be furnished with a diploma. Furthermore, medical analytic laboratories should be placed under the supervision of a joint commission composed of professors chosen from the Facultés de médecine and the Facultés de pharmacie.

#### Reminiscences Connected with Pasteur

Dr. J. A. Doléris, honorary obstetrician to the hospitals of Paris, publishes in the review *Gynécologie* a series of reminiscences connected with the life of Pasteur. Doléris was the first medical student to be admitted to Pasteur's modest laboratory and to be initiated, along with his many brilliant collaborators, all of them chemists, by Pasteur himself in the mysteries of micro-organisms. He was the author of the first doctorate thesis that came out of this bacteriologic laboratory and was defended before the Faculté de médecine of Paris. A few weeks after Pasteur presented to the Academy of Medicine his communication on the probable cause of puerperal fever, Doléris, who was then an intern at the Maternité, was performing a necropsy on a patient who had died from a puerperal infection; he then, for the first time, found himself brought into direct contact with Pasteur, who had been invited to be present and to collect certain specimens for study. What impressed Doléris most on this occasion was the pained expression that crossed the face of the eminent scientist, a laboratory man, who up to that time had studied puerperal infection only in animals, as he contemplated this human body as it lay on the bare slab in the low, dismal dissecting room. Pasteur could not help uttering words of compassion for this poor creature who, owing to an implacable disease, had sacrificed her life in the performance of her maternal duty. "*La pauvre femme! La malheureuse!*" he exclaimed, from time to time, as Doléris performed the necropsy before him and exposed the organs one by one, while Roux, who accompanied him, collected specimens of the pathologic fluids in the veins, the peritoneum and the fallopian tubes. The thesis of Doléris on the etiology of puerperal fever was received rather coldly by his critics. At the mention of bouillon culture mediums, Professor Depaul exclaimed scornfully: "What has all this cookery to do with puerperal fever?"

Let me call attention also to these characteristic lines of a letter that Pasteur wrote to Doléris a short time after the latter passed his doctorate: "You are about to enter, or, I may say, you have entered, the great field of practice. Seek to ascertain—but always exercising prudence and sound judgment—what part must be assigned to micro-organisms."

#### BERLIN

(From Our Regular Correspondent)

Feb. 10, 1923.

#### The Biologic and the Social Effects of Alcoholism

Dresel, professor of social hygiene in the University of Heidelberg, publishes in the *Zeitschrift für ärztlich-soziales Versorgungswesen* a very interesting study on the biologic and social effects of alcoholism, from which I will cite passages. According to experiments carried out by several scientific investigators, the narcotic effect of alcohol depends on its degree of dilution. The speed with which alcohol is absorbed is reduced if taken along with food, and the body that is habituated to alcohol absorbs it more rapidly than one that is not habituated. Whereas other narcotics produce a deeper sleep, alcohol has the opposite effect; sleep is, however, prolonged by alcohol. The sensation of hunger can be deadened by alcohol, since small quantities of alcohol stimulate the activity of the stomach. The sensation of thirst, however, seems to be increased by alcohol, for otherwise it would be difficult to comprehend how habitual drinkers can

consume such large quantities of alcoholic beverages; very few persons would be able to drink an equal quantity of water. The abolition of inhibitions is effected only by small doses of alcohol. Small doses also facilitate the development of motor power and stimulate the will. Larger doses, however, impair the coordination of movements, and, according to the investigations of Ach, the psychologist of Königsberg, lessen the power of comprehension in reading experiments; also the power of observation is reduced. The capacity to associate sounds is increased, which fact will explain why "poetic effusions" are so often produced under the effect of alcohol. The ability to add is often reduced, and the incoherence or flightiness of thought in habitual drinkers is well known. The power to perform muscular work is reduced by alcohol, although the subjects on whom the experiments were carried out stated that it was perceptibly easier to perform the work required when alcohol had been ingested.

The use of alcohol as a stimulant in sport activities is, therefore, contraindicated, on account of its weakening and other injurious effects. The feeling of increased warmth may also be regarded as a subjective deception. Large doses of alcohol cause a fall in the body temperature. The use of alcohol as a food is irrational, since the cost of a given caloric value is much higher in this form than from unextracted foodstuffs. According to the investigations of Professor von Gruber of Munich, a considerable waste of albumin occurs in the manufacture of beer. There is also considerable economic loss in the process of obtaining brandy from potatoes. The effect that abuse of alcohol exerts on disease and mortality is, in the opinion of Dresel (which accords with that of other investigators), difficult to estimate. So far, no specific injuries to the tissues or organs have been established with certainty as due to alcoholism, although it appears that many organic diseases occur more frequently in habitual drinkers than in persons who are temperate. The effects on animals that have suffered damages from experimental doses of alcohol cannot be applied without question to man. Even the frequent occurrence of cirrhosis of the liver does not prove an etiologic connection with alcoholism, for the bodies on which necropsies are performed do not furnish conclusive evidence as to the conditions that obtain in all dead bodies, much less as to conditions in the living.

One thing, however, appears certain, and that is that in habitual drinkers the small blood vessels undergo certain changes. Kräpelin, the psychiatrist, of Munich, found among his patients with arteriosclerotic brain symptoms 71.5 per cent. men, and of these, 47 per cent. were habitual drinkers. Many cases of mental disease have a history of immoderate indulgence in alcohol. During the war, delirium tremens disappeared almost entirely. The results of conception during alcoholic intoxication have not, as yet, been definitely established. It is probable, however, that in chronic alcoholics the spermatozoa are directly injured. But whether constitutional inferiority, which, it is asserted, occurs frequently in the offspring of habitual drinkers, is due to direct injury to the germ cells of the parents through alcohol, or whether it is only the result of the hereditary transmission of a psychopathic constitution, which is relatively frequent in habitual drinkers, has not been decided as yet.

The investigation of causes with respect to disease and death in the callings most closely associated with the manufacture and distribution of alcohol (saloon keepers, waiters and brewers) encounters the greatest difficulties, as the high morbidity and mortality in these classes may be explained on other grounds. It is exceedingly difficult to differentiate injuries due directly to alcohol from other injuries, and, in Dresel's opinion, it is, to a certain extent, an impracticable differentiation; for it must be remembered that alcoholism



seldom appears as an isolated evil, but is almost always associated from the start with some other social evil. Dresel regards this as the chief difficulty in combating injuries due to alcohol. He thinks that prohibition of alcohol will only partially solve the problem of relieving the public or the state from persons who are now alcoholics or have suffered injuries through alcohol; for it is certain that many of those who now apparently suffer shipwreck on account of alcohol would follow a downward course as the result of some other evil quite disconnected from alcohol. This applies also to the high criminality asserted to exist among habitual drinkers, as set forth by the Berlin investigator Baer. Dresel states that the question has now been raised why all heavy drinkers do not develop criminal tendencies. Dresel holds that alcoholism alone does not produce criminality, but that persons with psychopathic tendencies are inclined to combine alcoholism with criminality. The alcohol problem is so closely interwoven with the whole life of the people that researches on the existing social conditions among drinkers and in drinkers' families are more likely to shed light on the situation than studies on isolated biologic questions. The greatest damage to society is not caused by the degradation of the heavy drinkers themselves and by the disruption of their families (for their number is small compared with the total population), but lies rather in the spread of the habitual use of alcoholic beverages by the masses of the people.

#### Outbreak of Meat Poisoning

In the bath resort of Freienwalde, near Berlin, there occurred an outbreak of meat poisoning that affected several hundred persons. The symptoms had developed after eating horse meat, and several of the cases resulted fatally. It was ascertained that all the meat that had caused the poisoning had been purchased in the same shop. Necropsies on the victims revealed the presence of paratyphoid bacilli. It was discovered that the butcher had slaughtered and marketed six horses, three of which had harbored paratyphoid bacilli. Unfortunately, the official meat inspector had failed to discover the existence of the infection, and therefore suit has been brought against him for culpable negligence.

#### Personal

Professor Straub of Freiburg has been called to Munich to occupy the chair of pharmacology as successor to Professor von Tappeiner, who is to retire, April 1, on account of his advanced age.

### Marriages

WALLACE WILLIAM HOLLEY, Warren, Minn., to Miss Pearl Marguerite Palmer of Los Angeles, January 9.

FRANK DALLAM WORTHINGTON, Charlotte, N. C., to Miss Alice Hunt Owings of Baltimore, February 28.

WARREN T. MAYFIELD, JR., Norman, Okla., to Miss Dolores Burrell of Santa Ana, Calif., in January.

CHARLES F. DAVIDSON to Mrs. Barbara Frick Chamberlaine, both of Easton, Md., February 24.

AVONIA EADES KISER, Paris, Ky., to Miss Maude Ussery of Richmond, Ind., recently.

MORRIS C. MARCUS to Miss Evelyn Neuman, both of Chicago, February 25.

CARL COHEN, Atlanta, Ill., to Miss Della L. Sporn of Chicago, February 11.

RALPH J. LEVY, New York, to Miss Marion Saul of Brooklyn, February 21.

HENRY S. PALMER, Newark, N. J., to Miss Johnson of Orange, recently.

JOHN KERCHER to Mrs. Clara Renker, both of Chicago, March 17.

### Deaths

George Frank Lydston ☉ Chicago; Bellevue Hospital Medical College, New York, 1879; died in California of pneumonia, March 14. Dr. Lydston was born at Tulumne, Calif., in 1858. After his graduation he became intern at the Charity Hospital, New York, and later, resident surgeon of the New York State Immigrant Hospital. He was lecturer on genito-urinary diseases in 1882 and later professor of genito-urinary surgery and venereal diseases in the College of Physicians and Surgeons, Chicago. He was author of numerous books of both scientific and literary character, including a "Text-book on Genito-Urinary and Venereal Diseases," on the "Surgical Diseases of the Genito-Urinary Tract," and on "Impotence and Gland Transplantation." Most of his recent contributions to medical literature were devoted to the possibilities of securing rejuvenation by transplantation of glands. Among his contributions to general literature were a social text on diseases of society, a play "The Blood of the Fathers," and several novels, such as: "Over the Hookah," "Poker Jim," and "Trusty 515." Dr. Lydston was a man of aggressive personality and a writer of ability, with keen and satirical humor.

Asa Wilder Daniels, Pomona, Calif.; Medical College of Ohio, Cincinnati, 1867; founder of the Southern Minnesota Medical Society; Civil War veteran; member of the state board of health; for more than half a century a practitioner in Minnesota; served in the Indian outbreak of 1862; aged 94; died, February 27, of acute bronchitis.

Charles Columbus Simmons, Bunker, Mo.; Jefferson Medical College of Philadelphia, 1894; member of the Missouri State Medical Association; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 53; died, February 21, at St. Luke's Hospital, Kansas City, following a long illness.

Carroll Kendrick, Kendrick, Miss.; University of Louisville Medical Department, Louisville, Ky., 1873; member of the Kentucky State Medical Association; member and at one time president of the state board of health; for thirty years a member of the state legislature; aged 70; died, February 17, of heart disease.

William M. Leszynsky ☉ New York; Medical Department of the University of the City of New York, New York, 1878; member of the American Neurological Association and the New York Neurological Society; on the staffs of the Harlem, People's and Lebanon hospitals; aged 66; died, March 3, of pneumonia.

Charles Williamson Perkins, Chester, Pa.; Hahnemann Medical College of Philadelphia, 1870; practitioner in Chester for nearly half a century; former president of the city board of health; on the staff of the Crozer Hospital; aged 74; died, February 24, at Hot Springs, Ark., of diabetes mellitus.

Frederick Schauffler Osterheld, Ovid, Mich.; Detroit College of Medicine and Surgery, Detroit, 1919; member of the Michigan State Medical Society; served during the World War; aged 34; was killed, February 22, when the automobile in which he was riding was struck by a train.

William Franklin Faison ☉ Jersey City, N. J.; University of Virginia Department of Medicine, Charlottesville, 1888; on the staffs of Christ, Jersey City and St. Francis' hospitals; founder and president of the Fairmount Surgical Sanatorium; aged 57; died, February 24, of pneumonia.

George Washington Westermeier, Cherry, Ill.; Medical Department of Washington University, St. Louis, 1908; member of the Illinois State Medical Society; served in the M. C., U. S. Army, during the World War; aged 39; died, February 28, of pneumonia.

Charles H. Willson, Piketon, Ohio; Medical College of Ohio, Cincinnati, 1878; member of the Ohio State Medical Association; aged 70; was killed, February 25, when the automobile in which he was driving was struck by a train.

James A. Waterman ☉ Jefferson City, Mo.; Beaumont Hospital Medical College, St. Louis, 1887; physician to the Missouri State Penitentiary Hospital; aged 60; died, March 2, at St. Mary's Hospital, of abscess of the stomach.

Enos Canfield, Van Etten, N. Y.; Eclectic Medical College of the City of New York, New York, 1881; practitioner of Van Etten for more than half a century; aged 88; died, February 22, of heart disease.



James H. Fonger, Gary, S. D.; Minneapolis College of Physicians and Surgeons, Minneapolis, 1900; aged 48; died, January 28, at the John Swenson Memorial Hospital, Canby, Minn., of acute alcoholism.

Roy Granbery, New York; University of Louisville Medical Department, Louisville, Ky., 1901; passed assistant surgeon, U. S. Public Health Service; aged 42; died, February 27, of bronchopneumonia.

Wilson Charles Dingman ⊕ Poughkeepsie, N. Y.; Medico-Chirurgical College of Philadelphia, 1906; chief surgeon to the Mansion Square General Hospital; aged 50; died, February 27, of pneumonia.

Frank C. Simpson, Louisville, Ky.; University of Louisville Medical Department, Louisville, 1880; aged 65; died, February 25, at the Norton Memorial Infirmary, of pneumonia, following an operation.

Mary Agnes Dangel, San Francisco; University of Michigan Medical School, Ann Arbor, 1897; aged 56; died, February 25, at St. Luke's Hospital, of acute dilatation of the heart and myocarditis.

George W. Koeppe, Milwaukee; Milwaukee Medical College, 1901; formerly on the staffs of the Milwaukee County and Emergency hospitals; aged 44; died, February 18, of bronchopneumonia.

Howard Bell, Delhi, N. Y.; Medical Department of the University of the City of New York, New York, 1884; aged 68; died, February 17, from a bullet wound, presumably self-inflicted.

William D. Crocker, Warsaw, N. C.; Louisville Medical College, Louisville, Ky., 1887; member of the Medical Society of the State of North Carolina; aged 58; died, February 24, of influenza.

Enoch Knabb, Springfield, Mo.; Keokuk Medical College, Keokuk, Iowa, 1895; member of the Missouri State Medical Association; aged 55; died, February 19, of cerebral hemorrhage.

Arthur Windes Condict, Dover, N. J.; University of Michigan Medical School, Ann Arbor, 1882; member of the Medical Society of New Jersey; aged 63; died suddenly, February 16.

Charles Edward Dampier ⊕ Crookston, Minn.; University of Michigan Medical School, Ann Arbor, 1878; aged 68; died, February 20, at the Bethesda Hospital, of pneumonia.

Thirza La Vence Gregory, Englewood, N. J.; Woman's Medical College of the New York Infirmary for Women and Children, New York, 1892; aged 60; died, February 19.

James Edward Peltier, Newaygo, Mich.; Michigan College of Medicine and Surgery, Detroit, 1897; member of the Michigan State Medical Society; aged 59; died, January 8.

Joseph Daniel Daly, Brooklyn; Illinois Medical College, Chicago, 1899; on the staff of the Brooklyn Home for Consumptives; aged 46; died, February 26, of pneumonia.

Andrew Joseph McCusker, Glenwood City, Wis.; Detroit College of Medicine and Surgery, Detroit, 1918; aged 31; died, February 2, of pneumonia, following influenza.

Elmer Ellsworth Reed, Kansas City, Mo.; College of Homeopathic Medicine and Surgery of the Kansas City (Mo.) University, 1897; aged 56; died, February 17.

Walter de La Montanye Hill, Everett, Pa.; Jefferson Medical College of Philadelphia, 1900; died, February 9, at the Allegany Hospital, Cumberland, Md., of pneumonia.

Howard L. Garner, Rhinelander, Wis.; Milwaukee Medical College, 1901; served in the M. C., U. S. Army, during the World War; aged 44; died recently, of pneumonia.

J. Ambrose Armes, Leitchfield, Ky.; Louisville Medical College, Louisville, 1896; member of the Kentucky State Medical Association; aged 52; died recently, of carcinoma.

Charles Lamb Clark, St. Paul; Medical Department of Columbia College, New York, 1878; formerly deputy coroner; aged 66; died, February 16, of bronchopneumonia.

Elias V. B. Kendig, Hayesville, Ohio; Medical Department of the University of the City of New York, 1864; Civil War veteran; aged 84; died, February 21, of senility.

Emory W. Bruner, Jeffersonville, Ind.; Miami Medical College, Cincinnati, 1867; Civil War veteran; aged 81; died, February 27, of chronic nephritis and uremia.

Nelson Peck, Clarksburg, W. Va.; University of Maryland School of Medicine, Baltimore, 1886; aged 74; died, February 16.

## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

### WHAT TO DO FOR A HIGH TEMPERATURE

#### Helpful Suggestions Sent to the Malingering Maid of Michigan

Elsewhere in this issue appears a report of a case of malingering that has been given much publicity in the daily press for the past few weeks. A young woman of Escanaba, Mich., was reported as having a temperature that, from the newspaper reports, ranged all the way from 111 F. to the limit of a clinical thermometer. Investigation showed that the patient "faked" the temperature by the stealthy use of a small hot-water bottle.

During the time that this case was a nine days' wonder, the patient's family received many suggestions. Most of these came by letter, some by telegraph. The family very courteously turned over to THE JOURNAL'S representative some of the would-be-helpful messages that had been received. The following brief extracts from this mass of correspondence may prove of interest:

From Oakland, N. J., came the suggestion that the patient be given "as much ice cream (vanilla or other mild flavor) as she will swallow all day long and at night, too. It may help her a lot."

The Rose Salatorium Co., Rome City, Ind., urged the patient to take the "Vitamin Salt Food," "the salt that builds you up" (\$1.00 per pound) and to purchase (price \$1.50) the book "What to Eat and How to Prepare It." The latter, it seems, is invaluable; after getting it "you can live healthily ever after, for it tells you how."

#### CHIROPRACTORS—OF COURSE

An anonymous Milwaukee friend suggested that the patient have a chiropractor give "some spinal adjustments." The writer (evidently a woman) said they could take her word for it "as we always have chiropractors work on our babies when ill." And, as a parting shot: "Of course the medical men will be against this, but just try it just once."

A prepaid telegram:

"Miss X———, Noted Fever Case, Escanaba, Mich.

"You have tried the rest now try the best, *vis*, your local chiropractor. I am a chiropractor and I know what chiropractic can do. Stop flirting with death and call on a chiropractor immediately and wire or write me the outcome. I am paying for this message in hopes of saving your life. Yours for health.

E. D. HEMPHILL, D.C., Chiropractor, Saginaw, Michigan."

From Cleveland, Ohio, came an unsigned letter from a man who said that he had had a similar high temperature until "some one told me of a mechano-therapy doctor." One treatment cured him! As a sporting proposition, he added: "To show you how sure I am of him curing you I'll just bet my whole week's pay and more."

William E. Gates, Shirley, Ill., wrote: "Having read of your exceptional case in the News Papers and being an Astrologer I would like very much to have your birth date. If I find anything that will benefit you, I will send it." Mr. Gates even enclosed a stamped addressed envelop.

An anonymous letter from Toledo, Ohio, enclosed the card of "J. A. Aldridge, Divine Healer." The letter detailed some of Aldridge's marvels and expressed the wish that the patient might come to Toledo and see the "healer." It closed with the statement: "Do wish your doctor could be wright with him. They mite make good to Be together."

A Chicago woman insisted that "she never saw or heard of a fever but what I could heal in a few minutes when I had half a chance and even when I don't have even when they are supposed to be dying." The writer modestly mentioned that she had "healed seventeen cases of consumption and four



were dying and several cancers and tumors in a few minutes when dying, two in one visit."

One W. L. Brown of New York City sent a letter by special delivery. "I feel," wrote Brown, "that I can by an application that has been revealed to me for years and had been successfully applied in cases somewhat similar [sic!] to yours," bring the patient back to normal. "There isn't the least harm in it . . . my revelation is from the external side only." Mr. Brown explains that it is a "gift."

On the stationery of the National Home for Disabled Soldiers, Leavenworth County, Kansas, came a letter from one J. H. Woodruff, who seems to call himself "i John the Prophet." It read:

"My Dear Miss Lady you have one of the New Diseases that the other Prophets spoke a Bout that Would Baffle the Doctors. You Plase this Letter on your head and Put on Bonnet or hat and Were it ½ hour and your Fever Will go down if you have any Faith in god and i Will do the Balance."

A Bostonian, with nothing to sell, was quite sure that the patient's fever could be brought back to normal if she would "take wild cherry bark, steep it in hot water. Ad a little sugar and take a wine glass every two hours until you are normal."

"Dr. H. F. A. Meissel, Prof. of N. S. of L. E." Terre Haute, Ind., wrote, enclosing his business card and an advertising poster. Mr. Meissel's specialty is "Nature's Tissue Cell Food" which "cures any ailment of man or beast promptly from the slightest cold to the worst ailment ever named." Mr. Meissel recommended "Nature's Tissue Cell Food." No price mentioned.

A physician in a Wisconsin town wrote that "at the risk of being called an egotist" he was certain that he knew the cause of the patient's superheated condition. "It is a dis-functioning of your ductless glands that means the thyroid, the pituitrery and the supra adrenal glands." The doctor went on to state that these glands "secrete a serum" that "serves to maintain an equiliberium." [sic!] He stated that he had taken the liberty of writing to the editor of an Escanaba paper giving his views on the case and had sent the editor "a prescription composed of ductless gland secretions to be administered artificially to stimulate glands to a normal function." If the patient's physician would but give her this prescription, everything would be well.

## Correspondence

### "THE EARLIEST RECOGNITION OF APPENDICITIS—AGAIN"

To the Editor:—Dr. Leonard A. Mackall (THE JOURNAL, February 24, p. 572) says that the first case of appendicitis is that described by Heister in 1753, and that this fact was first pointed out by Dr. R. S. Rudolf of Toronto in the *Canadian Medical Association Journal*, May, 1913. In the third edition of Dr. Deaver's book on appendicitis, published in Philadelphia by Blakiston in 1905, I revised the chapter on the history of appendicitis, and there at page 16, Heister's case is noted and at page 11 a case of appendicitis described by Fernellius in 1567 is described. The original references to all these cases were consulted in the library of the College of Physicians of Philadelphia.

ASTLEY P. C. ASHHURST, M.D., Philadelphia.

### NOSTRUM GUZZLING A CENTURY AGO

To the Editor:—The following quotation may shed some light on the status of the "Propaganda for Reform" a century and more ago. It is from "A View of the Nervous Temperament," by Thomas Trotter, M.D., Late Physician to His Majesty's Fleet, etc., etc., first published in London in 1806:

All nervous persons are uncommonly fond of drugs; and they are the chief consumers of advertised remedies, which they conceal from their medical friends. Among some well-meaning people, this inordinate desire

for medicine has frequently become of itself a disease. With many of them, physic, to be useful, must be clothed in mystery; and the moment a discovery is made of the composition, the confidence is lost. Medical attendants have too often brought this punishment on themselves. Were they unanimous in combating the prejudices of mankind, by candour and openness of conduct, by a fair avowal of the imperfections of their art, and the honest confession that the articles of *Materia Medica* form but a small portion of its resources, they would not so frequently see their commands disregarded, or learn that their compounds have been thrown out of a window. This is the only way in which I can account for so many persons of good sense and discernment, consigning themselves and families into the hands of impudent and illiterate quacks.\*

The asterisk refers to this footnote:

The duty on quack medicines at this time is estimated at upwards of £300,000 annually. From this it may be supposed that ignorant pretenders to medicine take not less than *two millions* out of the pockets of the community!!

GEORGE BEVIER, M.D., Philadelphia.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### CATHARSIS OF NURSING MOTHERS

To the Editor:—1. Please mention a list of cathartics which, when ingested by the nursing mother, are known to appear in the milk. 2. Can you advise what measures may be taken to secure catharsis in a nursing mother suffering with chronic constipation? Kindly use my initials in publication.

H. J. O.

ANSWER.—1. It seems impossible to furnish a list of cathartics as requested by our correspondent. So far as is known, no chemical work has been done on this question. The fact, however, is abundantly substantiated that many cathartics taken by the nursing mother will affect the suckling infant. It would be much easier to mention those evacuant measures that will not affect the child when taken by its nursing mother, thus answering at the same time the second question.

2. A coarse diet, with fruit and vegetables predominating, and the ingestion of an abundance of water and of fat will tend to minimize the necessity for cathartics. Bran, though a dietetic measure, is frequently so active in favoring evacuation that it needs to be mentioned especially. One tablespoonful of it may be taken three times a day with meals. If the diet is insufficient, liquid petrolatum in tablespoonful doses morning and evening will probably soften the stool and favor its passage. Abdominal massage and gymnastics would be advised in case medicinal treatment failed. Should mechanotherapy not be available, or when the chief delay occurs in the last portion of the large bowel, then evacuant enemas of soapsuds or saline solution will be effective.

### INFLUENZA, GRIPPE AND "FLU."

To the Editor:—Please tell me what is the opinion of those best qualified to know concerning the relationship of the recent epidemic of illness in Chicago and the so-called Spanish influenza of 1918. I am far from clear about classifications, and assume that many coryzas rank as influenza in the newspaper statistics. What relation does our prewar la grippe bear? In England it has long been usual to call coryza flu. Are we not adopting that custom?

J. W. W.

ANSWER.—It seems that most physicians are inclined to regard the recent epidemic of respiratory infection in Chicago as one of influenza and as identical with the great epidemic of 1918. At present the main reason for this impression, no doubt, is the similarity of the two outbreaks in symptoms and complications. It is perhaps too early for reports of systematic bacteriologic and anatomic observations, and it is possible, of course, that such studies may reveal peculiarities in the present epidemic that will suggest a distinctive etiology; but as yet nothing of that sort has been intimated. Undoubtedly, various infections may cause coryza as well as other common symptoms and lesions, and in view of the tremendous significance to human welfare of the recent influenza pandemics, it is not strange that the newly coined "flu" should be crowding out older designations for what may be distinct diseases that are more or less similar in their manifestations. So long as the causative agents of influenza and similar diseases remain obscure, precise differentiation on the etiologic basis of outbreaks such as referred to in our correspondent's letter probably cannot be made.



## Medical Education, Registration and Hospital Service

### COMING EXAMINATIONS

IDAHO: Boise, April 4. Dir., Mr. Harry L. Fisher, Boise.  
MAINE: Portland, March 13-14. Act. Sec., Dr. Adam P. Leighton, 192 State St., Portland.  
MONTANA: Helena, April 3. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

### THE STATUS OF GRADUATE MEDICAL EDUCATION IN THE UNITED STATES IN 1922-1923

Report to the Council on Medical Education and Hospitals of the American Medical Association by a Special Committee on Graduate Medical Education\*

READ BY THE CHAIRMAN

LOUIS B. WILSON, M.D.

Director, Mayo Foundation of Medical Education and Research  
ROCHESTER, MINN.

Since October, 1922, the Special Committee has attempted a survey of the present status of graduate medical education in the United States. The chairman of the Special Committee and the secretary of the Council have personally visited most of the schools in the United States which announce opportunities for formal graduate medical study, and a number of universities which provide opportunities for formally registered graduate study in preclinical branches, and opportunities for informal graduate study through internships, residencies, and so forth. In addition, a few hospitals that provide special internships in ophthalmology, otolaryngology and rhinology and dermatology have been visited.

An attempt has been made to collect, in each instance, information concerning the corporate character of the institution and its relationships to other institutions, its financial resources and annual expenditures, its teaching resources in laboratories, hospitals, dispensaries, libraries and museums, the extent and general character of its teaching staff, its standards for admission of students, the name, home address, medical school and year of graduation of each student enrolled in the institution during 1922, the length and character of its courses of study in various fields, its methods of determining and recording the progress made by its students, and the character and form of certificates granted by the institution.

#### PROGRESS SINCE LAST SURVEY

In general, it may be said that there has been a very decided improvement in the general character of the graduate study of medicine in the United States since the committee's preliminary survey in December, 1919. However, there still remain institutions in which the conditions are almost inconceivably bad, though in others work on the highest plane of university graduate study is in progress. The Universities of Minnesota and Pennsylvania, the New York Post-Graduate School, and the Universities of Illinois, Harvard and Tulane have made the greatest advances in the organization of their facilities for graduate study in clinical branches. Chicago (Rush Medical College), California and Columbia universities have formulated plans for graduate study, and have already begun work in certain clinical fields, or expect to do so in the near future. Several other schools, as for example Johns Hopkins Medical School, and Bellevue Medical School, without general plans are giving opportunities for graduate work in a few clinical fields.

\* The committee consists of Drs. LOUIS B. WILSON, Chairman, Rochester, Minn.; JOHN M. DODSON, Chicago; ALFRED C. EYCLSHYMER, Chicago; VICTOR C. VAUGHAN, Chicago; J. M. T. FINNEY, Baltimore; EDWARD JACKSON, Denver; JAMES EWING, New York; WILLIAM PEPPER, Philadelphia, and, ex-officio, ARTHUR DEAN BEVAN, Chairman and N. P. COLWELL, Secretary of the Council on Medical Education and Hospitals.

### OPPORTUNITIES FOR ADVANCED STUDY IN PRECLINICAL FIELDS

In a number of the university medical schools, opportunities for graduate study in the preclinical branches have long existed. Usually these opportunities are a part of the graduate school of the university in which the students are registered. As far as the committee has been able to determine, there has been no material increase in the number of graduate students availing themselves of these opportunities, except at Johns Hopkins and the University of Minnesota.

The opportunities for graduate study in preclinical laboratories and in informal or short courses in clinical fields in the Universities of Colorado, Chicago, Northwestern, Indiana, Iowa, Maryland, Michigan, Washington, Nebraska, Pittsburgh, Western Reserve and Virginia have been surveyed only through correspondence or the school bulletins.

#### SCHOOLS OF PUBLIC HEALTH

The graduate work in the school of public health in the Universities of California, Pennsylvania, Harvard, Michigan, Yale, Johns Hopkins, Albany, Bellevue and Wisconsin have not been surveyed. This has not been because your committee was not interested but because it felt that this work was so well organized in the institutions named that for the time being a survey might be omitted.

#### ADVANCED STUDY IN CLINICAL FIELDS

Any discussion of the general character of graduate work provided by medical schools must take into consideration the demands from graduate students. Broadly speaking, these demands come from two groups of physicians: first, those desiring to fit themselves for practice of some special field of usually clinical medicine and, second, those desiring to improve themselves in general practice or in the practice of a specialty in which they are already engaged.

The first group consists largely of recent graduates who wish to fit themselves in a special field, either preclinical or clinical, and usually without engaging in general practice as a means of livelihood in the meantime; or of older graduates who have been in general practice for several years and who wish to fit themselves for, usually clinical, practice in some special field, using their experience in general medicine as a basis for their further study. The larger number of graduate students in both of these groups are still obtaining their preparation informally in advanced internships, residencies, assistantships, apprenticeships and various minor teaching positions in medical schools and the hospitals attached thereto. Their ability to practice in their chosen field is usually a matter of self-determination, occasionally aided by advice from their immediate superiors. At present, public recognition of special attainments in limited clinical fields are available to men so prepared only through membership in one or more of the various specialists' associations, as the American College of Surgeons and the American Ophthalmologists. A few universities, notably the Universities of Minnesota and Pennsylvania, now have their opportunities well organized for such preparation in clinical fields, including supplementary study in supporting preclinical fields, and recognize the graduates' attainment of proficiency by the granting of advanced degrees.

The committee recommends that graduate students of either of these two types, as well as medical schools contemplating the provision of opportunities for their preparation, should study carefully the recommendations of the various subcommittees in the special fields of medicine presented before this Council at its 1921 meeting.

While the granting of certificates or advanced degrees for work of the character described above must be left to the discretion of the institutions providing the opportunities, your committee believes that if any form of advanced degree or diploma-like certificate which may be used for wall display be granted, the principles enumerated later in this discussion should be followed.

The second group of physicians desiring to make further preparation either in general practice or in some special clinical field in which they are already engaged includes men and women of all degrees of preparation, from the most meager to the most advanced. They ask for opportunities for



study ranging from a casual visit to a clinic, a few days or a few weeks of intensive instruction, to a year of laboratory or clinical experience. As a result, the provision of opportunities which they may properly take advantage of without impossibly long interruptions of the practice presents the most complicated problem. At the outset your committee recognizes the very great need for continuation study, aside from that obtainable in daily practice and through personal reading, by the general practitioner and the specialist. New developments in diagnosis and treatment must be studied, and additional skill in diagnostic and operative procedures obtained. Unfortunately, the period which the practitioner can usually afford to take is too frequently so brief that his instructor who is responsible for the care of patients does not feel warranted in relinquishing any of that responsibility to him. The instruction, therefore, must usually be limited to lectures, demonstrations and laboratory work. Where periods of several months can be spent in one field, the instructor may sometimes place clinical material at the disposal of the practitioner-student. However, much good is being accomplished by lectures and laboratory courses and clinical demonstrations, however brief. Your committee would recommend for the consideration of prospective practitioner-students, and of other universities, the work in the short courses for practitioners under various names provided by the New York Post-Graduate School and the Universities of Pennsylvania, Tulane, Harvard, Johns Hopkins, Minnesota, Colorado, Illinois, Indiana, Iowa, Washington, Nebraska and Bellevue, and also the "extension courses" being carried on by the University of Pennsylvania.

#### ADMISSION REQUIREMENTS

At present it would seem that the least admission requirement should be graduation from an acceptable medical college, or, in the case of older reputable physicians, evidence of licensure before graduation was required. Many schools are not giving sufficient attention to entrance requirements, and serious abuses exist.

#### TEACHERS

In some institutions, the courses of instruction are given by men with inadequate experience not only in the subject matter of their fields but also in teaching. It is believed, for example, that the general practitioner who can spend only a short period in acquainting himself with the newer things in diagnosis and treatment should, if possible, receive his instruction from the very best man available. Certainly instruction should not be left to men who are recent graduates of inferior schools and who have not been able to obtain teaching recognition on the faculties of acceptable medical schools.

#### LABORATORY FACILITIES

It cannot be assumed that all graduate work necessarily requires the use of laboratories for instruction; but most of it does, and where courses obviously requiring such facilities are offered, adequate laboratories should be provided. In many institutions this is far from being true at present.

#### LIBRARY FACILITIES

Any graduate work in medicine demands intensive reading in the field studied. Library facilities in many institutions surveyed are either totally lacking or woefully inadequate. In some cities, however, this lack is provided for by good medical libraries attached to other nearby institutions.

#### HOSPITALS AND DISPENSARIES

Graduate courses in clinical subjects can rarely and with difficulty be profitably presented in lectures only. Your committee recognizes the difficulties in bringing short term graduate medical students in responsible contact with patients, but some institutions are solving this problem in a creditable manner, apparently without harm to the patients. Certainly clinical material must be available for demonstrations to, if not for personal use by, the graduate student.

#### CERTIFICATES

A few of the previously named institutions and a number of others not named are granting diploma-like certificates of attendance to practitioner-students for relatively short periods

of study. One institution, not named, grants such a certificate after one week of study. After careful consideration, your committee believes that the granting of diploma-like certificates which may be used for wall display, to any except those whom the institution knows to be proficient in a particular field, is fundamentally wrong. It is usually urged that these certificates are certificates of attendance only. Though this may be true, since the name of the student and the name of the specialty are usually stated in such a manner as quickly to catch the eye of the observer, it is believed that the public in most instances does not readily distinguish between such a certificate of attendance and a certificate of proficiency in the specialty named. Hence they assume that the physician who displays such a certificate on his wall is truly qualified to practice the specialty named. This often false impression is all the more harmful if the certificate bears the name of some well known university, or if there is included in the name of the institution the name of some special field of medicine, as surgery or ophthalmology, or if it bears the legible signatures of men widely known as specialists in any field of medicine or surgery. Your committee believes that such certificates may readily be, and frequently are, used by unqualified physicians to mislead the public as to their qualifications in the fields named on the certificates.

If a graduate school determines that one of its students is thoroughly competent to practice in any special field of medicine or surgery, your committee sees no reason why it should not give him a certificate to that effect, or confer on him an advanced degree if it so desires. If, however, it does not know that one of its graduate students possesses such competence, under no circumstances should it grant him any sort of certificate which can be readily displayed on the wall of his office to mislead his patients. Your committee further believes that no certificate of proficiency or which may be construed by the public as indicating proficiency should be granted by any graduate institution to any one who the institution does not know is proficient in that field, nor to any one who has not completed one academic year in full time study of a single special subject in the institution granting the certificate. For lesser degrees of proficiency and shorter periods of study the most that should be granted in the way of a certificate should be a statement in letter form or on a card which does not contain all the essential data on one side. Neither should it resemble a diploma, be suitable for wall display, nor contain any portion easily read at a distance of more than three feet.

Your committee further believes that these principles should apply also to certificates from hospitals for internships in special fields in which the special field is named. They should not necessarily apply to certificates from hospitals for general internships or resident service in which no special field is named, since the responsibility for license to practice general medicine rests with state medical examining boards.

It is only to protect the public against inadequately prepared specialists that the foregoing provisions are suggested. It is, however, believed that the work of schools offering opportunities for graduate study for student-practitioners would be greatly simplified by thus restricting the issuance of diploma-like display certificates, and your committee hopes that when the attention of schools is called to the reasons for such restriction, they will adopt regulations in conformity with the foregoing recommendations.

Your committee recommends as a basis for approval by the Council the following:

#### PRINCIPLES REGARDING GRADUATE OR POSTGRADUATE MEDICAL SCHOOLS, SCHOOLS OF LABORATORY TECHNIC, AND OTHER INSTITUTIONS PROFESSING TO FURNISH COURSES OF INSTRUCTION FOR GRADUATES IN MEDICINE

1. *Admission.*—Opportunities for graduate study should be open only to those who have received the degree of Bachelor or Doctor of Medicine from medical colleges considered acceptable by this Council, or to reputable physicians who were licensed in certain states before graduation was required.



2. *Records*.—Records should be kept by each institution showing (a) the preliminary and professional entrance qualifications of every student, which should be verified by documentary evidence; (b) the subjects for which he is enrolled; (c) evidence of his faithful attendance at his work; (d) whether or not an advanced degree or diploma-like certificate was granted, and (e) especially evidence of the student's proficiency as demonstrated by his routine or research work, examinations or otherwise.

3. *Teachers*.—The school should be supplied with a corps of skilled teachers responsible for the work in all subjects in which opportunities for study are announced. This should include teachers for essential review or advanced work in the preclinical sciences, as well as those who have in charge work in clinical subjects. The teaching staff should be made up of graduates of or teachers in Class A medical colleges, or of high grade educational institutions. The faculty should be organized under the various teaching departments in which work is offered with a competent professor at the head of each department.

4. *Laboratories*.—The school should have ample laboratories to provide proper review or advanced work in the preclinical sciences essential for the specialty or specialties in which opportunities are offered.

5. *Clinical Material*.—The school should have either a large outpatient clinic with 100 or more patients each day, or a teaching hospital with a daily average of 200 or more patients; or, if teaching is limited to a single specialty, a hospital of not less than twenty-five patients daily, or both such dispensary and hospital. In brief, it should have sufficient clinical material to enable it to provide satisfactory clinical study in the specialty or specialties for which opportunities are offered.

6. *Library and Museum and Special Apparatus*.—Unless the graduate school otherwise has the convenient use of a good medical library, it should have a medical library of its own. This should include an ample supply of modern text and reference books, files of bound medical periodicals, and the essential indexes. It should also receive regularly thirty or more standard medical periodicals, the latest numbers of which should be on tables or in racks where they may be easily accessible to the graduate students.

The school should be supplied with adequate museum facilities, including anatomic and pathologic specimens, such as can be used for study by graduate medical students. It should also be supplied with adequate special apparatus, such as stereopticons, balopticons, photomicrographic outfits and roentgen-ray equipment.

7. *Annual Announcements*.—The graduate school should publish annually announcements, bulletins or catalogues, giving detailed information in regard to its teachers, laboratories, dispensaries and hospitals, and outlines of the various opportunities for study offered, as well as a complete list of the students enrolled during the last preceding year, showing their medical schools and years of graduation, the subjects for which they were registered, and to whom advanced degrees or diploma-like certificates were granted.

8. *Type of Institutions Not Acceptable*.—Work in schools owned or controlled by individuals or by corporations conducted for profit, or work given in hospitals owned or controlled by individuals, is not eligible for the approval of the Council on Medical Education and Hospitals.

No institution the name of which indicates a specialty or group of specialists will be considered as acceptable unless it has an adequate number of skilled teachers and ample laboratory or clinical facilities, and offers opportunities for study sufficiently well organized and thorough to permit the students to acquire a reasonably complete knowledge and skill in that specialty.

9. *Advanced Degrees, Diplomas, Certificates*.—No advanced degree, diploma or diploma-like certificate should be granted for a period of study extending over less than one college year of at least thirty-two weeks in length, and which includes at least six hours of actual study each day, and unless scholarship records of the students granted such certificates

show that they have, throughout the period, faithfully attended to their studies, and unless reasonable tests show that they have faithfully and satisfactorily completed the work for which they were registered.

#### CLASSIFICATION OF GRADUATE MEDICAL SCHOOLS

The classification of schools according to these principles and according to their present status is a complicated problem, largely because of the great variation in the purposes and length of the courses offered. Indeed, for the present it seems necessary to ignore both these factors and to consider only the observation of entrance requirements, the provision of adequate material, personnel and organization to accomplish properly the work advertised, a proper guaranty of stability and responsibility in the institution, and the protection of the public from unwarranted certification of specialists.

In accordance with the foregoing principles, your committee recommends the following classification on the present status of the graduate schools inspected:

A-1. Those which have adequate equipment, which are furnishing acceptable graduate courses of instruction in all the various specialties, and which grant advanced degree diploma-like certificates only to students who are qualified to receive them.

A-2. Those which have adequate equipment, which give acceptable course in one or two specialties, and which grant advanced degrees or diploma-like certificates only to students qualified to receive them.

B-1. These which have limited equipment but which grant no advanced degrees or diploma-like certificates, or if so, only to students qualified to receive them.

B-2. Those which have reasonably good equipment but which are overgenerous in granting advanced degrees or diploma-like certificates to students who have not secured adequate qualifications.

C-1. Those which are (a) inadequately equipped; or (b) are not properly organized; or (c) are not conducted in a satisfactory manner; or (d) grant advanced degrees or diploma-like certificates on courses which are inadequate to warrant such certification.

C-2. Those which offer courses in any specialty which are too short to insure any reasonable degree of efficiency in any specialty, or which give advanced degrees or diploma-like certificates for such unduly brief courses.

#### Ohio December Examination

Dr. H. M. Platter, secretary, Ohio State Medical Board, reports the oral, written and practical examination held at Columbus, Dec. 6-8, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 25 candidates examined, 23 passed and 2 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Yale University .....	(1922)		89.9
Howard University .....	(1921)		80.5
Chicago College of Medicine and Surgery.....	(1916)		81.7
Hahnemann Medical College and Hospital, Chicago.....	(1922)		83.6
Loyola University .....	(1918)		75*
Northwestern University.....	(1922)†	81.5, 90.2, (1922)	88.5
University of Louisville.....	(1916)		83.7
Harvard University .....	(1922)	86.4, 87,	90.7
Eclectic Medical College.....	(1905)		76.9
Jefferson Medical College.....	(1921)	82.7, (1922)	85.1
Temple University.....	(1919)	91.1, (1921)	77.1
University of Pittsburgh.....	(1922)		90.1
Meharry Medical College.....	(1908)		75‡
University of Vienna, Austria.....	(1915)§		82.5
University of Szeged, Hungary.....	(1912)§		82.8
University of Naples, Italy.....	(1919)§		77.1

#### FAILED

University of Naples, Italy.....(1914)§ 52, (1921)§ 41.3

\* This candidate was given 1.9 per cent. credit for years of practice.

† These candidates have finished the medical course, and will obtain the M.D. degree after they have completed a year's internship in a hospital.

‡ This candidate was given 2.4 per cent. credit for years of practice.

§ Graduation not verified.



## Book Notices

**PERSONAL HYGIENE APPLIED.** By Jesse Feiring Williams, A.B., M.D., Associate Professor of Physical Education, Teachers College, Columbia University. Cloth. Price, \$2.50 net. Pp. 412, with illustrations. Philadelphia: W. B. Saunders Company, 1922.

This book is a serious attempt to present to the intelligent public, and particularly to the college student, a comprehensive survey of health in education and education in health. It is the author's belief that the important factor of health in life involves not only the presentation of rules of health, but also bringing into contact with such rules the deep and overflowing source of human action where ideals, ambitions, prejudices and hopes are born. In the first five chapters, therefore, the author considers the meaning of health, the health problem, intelligence and ideals, the approach for knowledge of health, and science and attitudes. In these chapters he places clearly before the reader the importance of rationality in health as well as in any other factor in human life. His definition of health is "the quality of life that renders the individual fit to live most and to serve best." In other words, health for health's sake is not a satisfactory definition. In his chapter on science and attitudes he discusses the various cults and sects which are making inroads into the health field. Here again his statements are well founded on statistics. His judgments are sincere and careful, and his illustrations are attractive and convincing. In the remainder of the book, various chapters are devoted to special hygiene of the various parts of the body, divided by systems. These chapters are wholly practical, and they are full of excellent devices for the individual who is seeking didactic and reliable information. The book is one which the physician may safely recommend to his patient.

**MEDICAL AXIOMS, APHORISMS AND CLINICAL MEMORANDA.** By James Alexander Lindsay, M.A., M.D., F.R.C.P., Professor of Medicine in the Queen's University of Belfast. Cloth. Price, 6 shillings net. Pp. 192. London: H. K. Lewis & Co., Ltd., 1923.

The author has here collected axioms and brief statements concerning the diagnosis and treatment of various conditions. The statements are taken from his own experience and also from the experience of several hundred ancient and modern authors. The axioms are thought-provoking and instructive. Any one of them is the text for a complete paper, and probably says in a few words what most authors would require a paper to bring out. A few specimens are quoted:

Never believe what a patient tells you his doctor has said.—*William Jenner.*

The first qualification for a physician is hopefulness.—*James Little.*  
Give your prognosis in heart disease on the best supposition, treating your patient on the worse.—*Clifford Allbutt.*

Chorea is commoner in the more emotional sex and at the more emotional age.—*Hughlings Jackson.*

I am of the opinion that our first duty is to inquire whether a thing be or be not before asking wherefore it is.—*William Harvey.*

**ALGUNOS ASPECTOS DE LA PSICOLOGIA DEL NIÑO.** Por el Doctor Honorio F. Delgado, Fundador del Seminario Psico-Pedagógico. Con Prologo del Doctor William A. White, Superintendent of the St. Elizabeth's Hospital (Washington, D. C.). Paper. Pp. 84. Lima, Peru: Imprenta la Opinion Nacional, 1922.

Not only have the psychoanalytic waves washed the shores of every civilized country, as stated by Dr. White in his preface, but they have splashed everything on land. This event, however, holds no terrors for at least one of the leading South American psychiatrists, the author of this ambitious essay on "Some Aspects of Child Psychology." He even desires to widen the scope of Freud and Jung's pet conception. After reviewing the nature, mental development, personality and tendencies of the child, Dr. Delgado sees a chance to supply the deficiencies of education through the introduction of psychoanalysis in the schools, and the teaching of what he calls philosophy of life. All may agree with the Peruvian professor as to education being sorely in need of reform. Few will endorse his medicine for the ailing patient. Most psychiatrists will remain skeptical as to the far-reaching good to be derived from a school psychoanalysis service. Nor can one share the author's optimism as to the

reinterpreted message of "Christ, Lao-Tse, Heraclitus, Euripides, Plato, Horace, Seneca, Plutarch, Sankara, Montaigne, Shakespeare, Goethe, Nietzsche and two dozen others" creating a race of supermen. It would take indeed a superman—or a psychoanalyst—to interpret the message, even without trying to harmonize the doctrines, of, say, Horace the Epicurean poet, and Seneca the stoic philosopher, or Euripides the cynical dramatist, and Plato the idealist sage, or Lao-Tse and Nietzsche. The hopelessness of his plan is shown by the assertion that Germany became first among nations through her putting into practice the axiom of *Durch Kennen zum Koennen*.

**OTO-RHINO-LARYNGOLOGY FOR THE STUDENT AND PRACTITIONER.** By Dr. Georges Laurens. Authorized translation by H. Clayton Fox, F.R.C.S. With a foreword by Sir J. Dundas-Grant, M.A., M.D., F.R.C.S. Second edition. Cloth. Price, \$4.50 net. Pp. 350, with 584 illustrations. New York: William Wood & Co., 1922.

The first edition of this work was spoken of in these columns as the ideal textbook for practitioners and students, because of its essentially practical character. In the present volume none of this value is lost, and numerous additions have been made. The author's minuteness of detail, his brief, sensible descriptions, the clever arrangement of his text, and, above all, his sane instructions under the headings *What to do* and *What to avoid* give to the student a broad view of this field, and to the practitioner a safe working basis in the absence of the specialist.

**PROBLEMAS ACTUALES DE LA DOCTRINA DE LAS SECRECIONES INTERNAS.** Por el Dr. G. Marañón. Paper. Price, 18 pesetas. Pp. 265, with 40 illustrations. Madrid: Ruiz Hermanos, 1922.

Previous publications of this facile Spanish author have dealt largely with the clinical aspects of the ductless glands. The larger part (170 pages) of the present volume is denoted to a review of the physiology of the endocrines. Two chapters are given to the glandular pathology, and one chapter to organotherapy. Those who can read Spanish will find this book on the ductless glands well worth attention, as in the presentation and critical analysis of facts and theories in this field Dr. Marañón shows himself the equal of the best authors in English, German and French.

**DOSIERUNGSTABELLE FÜR DIE RÖNTGEN-THERAPIE.** Allgemein gefasste, und nach den Spezialfächern geordnete Bestrahlungs-Rezepte für die zugänglichen Krankheiten mit Berücksichtigung der neueren Forschungen den Bedürfnissen der Praxis entsprechend gestaltet und mit Erläuterungen versehen. Von Dr. G. Holzkecht, Professor für Medizinische Radiologie an der Universität. Paper. Price, 3 marks. Pp. 33. Leipzig: Franz Deuticke, 1922.

The author, one of the pioneers in roentgenology, issued this little book as a guide to enable the beginner to determine the roentgen-ray dosage suited to the treatment of a given case. The basis for a scientific and exact selection of the dose is furnished by the recognition of the paramount importance of the dispersion rays and by the introduction into the roentgenologic practice of the measuring of the wave length. In order to simplify the choice of the dose, the author classifies all conditions to be treated in four groups: The first, requiring extreme doses, is represented by carcinoma; the second is the group that needs strong, but not extreme, irradiation; the third group requires only a medium strong dose, and the fourth group requires only weak irradiation. The necessary measuring for the construction of the various intensities was performed with the help of the intensimeter, the radiometer and the spectrograph. All the diseases are catalogued according to the medical speciality in which preferably they are to be treated.

**SEMIOLOGIA DOS SOPROS DIASTOLICOS DA BASE.** Especial Estudo da Insuficiencia Aortica Myocardica. Por el Dr. Jose Barboza, Assistente de Clinica Medica da Faculdade de Medicina do Rio de Janeiro. Paper. Pp. 97, with 3 illustrations. Rio de Janeiro: Typ. da Revista dos Tribunaes, 1921.

This study of myocardiac aortic regurgitation was granted the Francisco de Castro prize by the Rio de Janeiro Academy of Medicine. While, as pointed out by Austregesilo in the preface, exceptions may be taken to some of the author's sweeping statements, no one can doubt his sincerity or complain of obscurity in his statements. As to classification of



cardiac murmurs, Dr. Barboza considers Gallavardin's the least incomplete, although differing with him in the definition of functional murmurs. A remarkable tribute is paid to MacCallum of Johns Hopkins, as deserving credit for "the best studies on the muscular architecture of the heart." There is little original work in the study, but the author has read critically previous contributions and interpreted them according to his own views.

**NURSING IN DISEASES OF THE EYE, EAR, NOSE AND THROAT.** By Harmon Smith, M.D., Surgeon in Throat Department of the Manhattan Eye, Ear and Throat Hospital, (Editor), John R. Shannon, M.D., Wendell Phillips, M.D., John E. Mackenty, M.D. Assisted by David H. Webster, M.D., John R. Page, M.D., and Francis W. White, M.D. With Chapters by Herbert B. Wilcox, M.D., and Helena M. Toothaker, R.N. Third edition. Cloth. Price, \$2.25 net. Pp. 333, with 73 illustrations. Philadelphia: W. B. Saunders Company, 1922.

This compact little book contains a wealth of information, not only along the lines of nursing but also along those of the operative and nonoperative treatment of diseases of the eye, ear, nose and throat. The first section deals with the germ theory of diseases, antiseptics, disinfection of rooms and clothing, preparation of surgical dressings, and operating room technic. The nurse's duties in operations and emergencies, as well as the feeding and care of infants, are well covered. The second section is devoted to the eye. The anatomy, the physiology and the common remedies used in ocular conditions are considered quite completely. Then follows a discussion of contagious eye diseases as well as some of the operative procedures. In the third section, covering the ear, we have at first an outline of the physiology, together with the examination of the ears. Functional tests for hearing and the testing of the static labyrinth are given, especially the former. The ordinary tuning fork tests are well described. Then follow diseases of the external, middle and internal ear. In the fourth section, the anatomy of the nose is considered. The fifth and last section covers the pharynx and larynx, their anatomy, and the diseases peculiar to these structures, particularly with reference to the larynx. Many details are given, including examination, edema of the larynx, benign and malignant tumors, tuberculosis, syphilis, foreign bodies, tracheotomy, laryngectomy and thyroidectomy. Not only does this volume give innumerable points of information for nurses, but it would be a valuable book for the general practitioner; he would be spared the necessity of consulting large works by the information here given on many points of general interest to guide him in his treatment of the ordinary affections of the eye, ear, nose and throat with which he often comes in contact.

**LICÇÕES DE CLÍNICA MÉDICA.** Pelo Dr. H. Annes Dias, Prof. da Faculdade de Medicina de Porto Alegre. Paper. Pp. 418, with illustrations. Porto Alegre, Brazil: Livraria do Globo, 1922.

At the request of his pupils, the author, a professor in the Porto Alegre, Brazil, Medical School, has compiled some of the lectures on clinical medicine given by him during the last two years. Dr. Annes Dias follows the accepted methods in the analysis of cases. A number of illustrations are attached, but they add little to the value of the book, as most of them are not original, and the reproduction is poor. The appended index deserves commendation as setting a good example which other Latin authors and publishing houses might well follow.

**THE TOPOGRAPHICAL ANATOMY OF THE THORAX AND ABDOMEN OF THE HORSE.** By O. Charnock Bradley, M.D., D.Sc., M.R.C.V.S., Lecturer on Comparative Anatomy, University of Edinburgh. Cloth. Price, \$5 net. Pp. 204, with 85 illustrations. New York: William Wood & Co., 1922.

This book is a successor of "The Topographical Anatomy of the Limbs of the Horse," by the same author. It is at once a regional, descriptive textbook, and a laboratory manual for use in dissection. It is excellently planned, and gives a clear and instructive account of each of the structures in each region. It is illustrated by reproductions of comprehensive drawings by Mr. James T. Murray, which constitute a valuable part of the work. Dr. Bradley has appreciated the fact that the B. N. A. terminology is better than any other for use, even in a book on the anatomy of a quadruped, and he

has therefore adopted it, adding in footnotes an explanation of etymologies—a feature always appreciated greatly by students. In a few instances, B. N. A. terms are modified slightly to adapt them to the anatomy of the horse. For example, "cranial" and "caudal" are substituted for "superior" and "inferior," and "internal thoracic" for "internal mammary." In cases in which the structure of the horse differs materially from that of other mammals, there is a consideration of the primitive mammalian structure, and of the significance of the specialization as illustrated in this animal. To supply a systematic survey of the great functional systems, the need of which is always felt by students, tabulations are introduced in the back as appendixes, covering the arterial and lymphatic systems. The addition of similar tabulations covering the bony, muscular, venous, nervous and other systems would add greatly to the value of the book to the student. The work of the publisher has been admirably done. The illustrations are clear, and the book is convenient, durable and attractive.

**DISEASES OF THE THYROID GLAND.** By Arthur E. Hertzler, M.D., F.A.C.S., Professor of Surgery in the University of Kansas School of Medicine. With a chapter on Hospital Management of Goiter Patients by Victor E. Chesky, A.B., M.D., Associate Surgeon to Halstead Hospital. Cloth. Price, \$5. Pp. 245, with 106 illustrations. St. Louis: C. V. Mosby Company, 1922.

This monograph in a brief way considers the entire subject of diseases of the thyroid from etiology to treatment. The first chapter, on etiology and pathogenesis, while brief from the standpoint of the mass of literature on the subject, is nevertheless an intelligent summary. In the chapter on pathology there is a goodly collection of photographs of gross specimens and of photomicrographs. The histopathology is adequately presented; the surgical pathology is not. This is particularly true of the data on exophthalmic goiter. Associated parenchymatous changes, and such subjects as the thymus and the suprarenals are too briefly considered. There is an excellent chapter on aberrant and intrathoracic goiter. There is an excellent series of drawings illustrating anatomy and surgical technic. The book is essentially a personal work, and is interesting reading.

**PROPÉDEUTIQUE ET TECHNIQUE UROLOGIQUES.** Par G. Wiener, Ancien urologue adjoint à l'Hôpital Saint-Pierre de Bruxelles. Paper. Price 40 francs. Pp. 483, with 153 illustrations. Paris: Masson et Cie, 1922.

There is little in this publication that does not appear in any of the current textbooks, while many important facts are missing. The author tries to show the difference in the quality of the urine, studied by the three glass test, in uncolored pictures. In describing the abdominal puncture of an overdistended bladder, he neglects to mention the dangers of this procedure and how to evade them, especially the possibility of injuring intestinal loops. The recommendation, in urologic operation, of the use of chloroform in preference to ether will not be popular with American surgeons. While much space is devoted to the Ambard constant, discarded as valueless by many clinicians, the modern physiologic renal tests are hardly mentioned.

**EXPERIMENTAL PHYSIOLOGY.** By Sir Edward Sharpey-Schafer, F.R.S., Professor of Physiology in Edinburgh. Third edition. Cloth. Price, \$2 net. Pp. 131, with 90 illustrations. New York: Longmans, Green & Co., 1921.

This book contains directions for performing some of the fundamental experiments in physiology, especially experiments on muscle and nerve, and the heart (frog). The experiments outlined on mammals are fewer than are usually given in the physiology courses in the better medical schools in this country, but the book should prove interesting and helpful to instructors in physiology everywhere.

**BODY MECHANICS AND HEALTH.** By Leah C. Thomas and Joel E. Goldthwait, M.D. Cloth. Price, \$1.50. Pp. 112, with 31 illustrations. Boston: Houghton Mifflin Company, 1922.

The authors consider briefly the problems of securing and maintaining correct posture while standing, sitting and walking. The book contains numerous illustrations and tables of progressive exercises for use in achieving the objects sought.



## Medicolegal

### Determination of Necessity for Operation by Results

(*Union Iron Works et al. v. Industrial Accident Commission et al.*  
(Calif.), 210 Pac. R. 410)

The Supreme Court of California says that in 1916 an employee fell from a ladder, breaking both legs and an arm. The corporations that may be called his employers placed him under the care of two physicians, but later removed him to their own private hospital, where he was treated by their own physicians. For four years after the injury, there was a continuous discharge of pus from one leg, due to necrosis of the bone and unhealed wounds. In February, 1920, he consulted one of the physicians who first treated him, who advised an immediate operation to remove the diseased bone. This advice was reported to his employers' physicians, but it was their opinion that such an operation would not be opportune until the clearing up of a discharging sinus in the left leg, and in this conclusion they were confirmed by an opinion to the same effect of another physician and that of the medical director of the industrial accident commission. The employers, therefore, refused to permit operation. After waiting nine months for their physicians to relieve his condition, the employee, in November, 1920, abandoning their treatment, placed himself under the care of the physician whom he had previously consulted. That physician performed two operations, which were a complete success, the flow of pus being stopped, the broken bones united and the wounds healed. Thereafter, the employee applied to the industrial accident commission for an award of \$1,446.90, for the payment of expenses incurred by him in having these operations performed and for hospital fees and treatment attendant on the operations, which was granted; and is affirmed by the court.

It may be conceded that had this been an action for malpractice, or one founded on the old common-law liability of the employer, the time to determine whether a surgical operation was reasonably required would have been before the operation, and that if at that time there was a difference of opinion among competent physicians as to the necessity of an operation, no liability could be predicated on a failure to operate. The proceeding before the commission, however, was not an action for damages, nor was it based on the idea of fault on the part of the employer. It was founded on the provisions of the workmen's compensation act, which contemplates and calls for such medical and surgical services as will tend to secure the return of the workman to productive employment. Manifestly, if the treatment practiced and persisted in by physicians furnished by the employer, even though they are conceded to be skilled and competent in their profession, does not within a reasonable time effect a cure, and thereafter a course of treatment prescribed by other physicians procured by the injured employee does in fact seasonably effect a cure, then it cannot be said that the employer has furnished such medical and surgical treatment as was reasonably and seasonably required. The successful result of the operations in the instant case demonstrated that such was the treatment reasonably required to cure and relieve the injured employee from the effects of his injury. This being so, the refusal, after more than three years of unsuccessful treatment, of the employers' physicians to operate, despite repeated requests to do so, this refusal extending over a period of nine months, during which time the injured employee continued to suffer, and his condition apparently grew worse, was tantamount to a refusal to furnish the treatment seasonably required by the statute.

But before the injured employee will be entitled to compensation in such a case for expenses incurred in the treatment of him by a physician of his own selection, it will have to be shown that the treatment not only was a success, but that it was reasonably and seasonably necessary to cure and relieve him. Moreover, all the circumstances attending the treatment by the employers' physicians will have to be weighed by the commission in order to determine whether or

not the treatment prescribed by the employers' physicians would, if it had been persisted in, have produced as speedy and as satisfactory a cure as did the treatment of the physician resorted to by the injured employee. In coming to a conclusion, the commission would necessarily take into consideration the period of time covered by the treatment of the employers' physicians and the results obtained during that time. In other words, the injured employee will be permitted, at the peril of having himself to pay the expenses of medical treatment, to secure the services of physicians other than those provided by his employer, this peril attaching unless it can be shown that the procurement of such services was warranted.

### Malicious Prosecution of Insanity Proceeding

(*Pickles v. Anton* (N. D.), 189, N. W. R. 684)

The Supreme Court of North Dakota, in affirming a judgment for \$6,000 damages in favor of the plaintiff, and in thereafter denying a petition for a rehearing filed by the defendant, says that it is entirely satisfied that an action will lie for the malicious prosecution, without probable cause, of a proceeding the object of which is to have a person adjudged insane. It has been held that the prosecution of such a proceeding without probable cause constitutes cruel and inhuman treatment within the contemplation of the laws relating to divorce, so as to afford a ground for a divorce. It would seem that if the baseless prosecution of an insanity proceeding is a wrong of sufficient magnitude to justify the severing of the marriage ties, it ought to furnish a ground for the award of damages; and in this court's opinion it constitutes a legal wrong for which the party injured is entitled to be compensated. As the name implies, malice is an essential ingredient of an action for malicious prosecution, but it must also be shown that the action or proceeding complained of was instituted without probable cause. The plaintiff may introduce evidence tending to show that the defendant, by the institution of the action or proceeding complained of, sought to accomplish some personal or private end. Malice need not be shown by direct and positive testimony. It may be inferred from circumstances. Reasonable or probable cause depends on the honest and reasonable belief of the party commencing the prosecution that the charge made is true. The fact that the plaintiff may have committed certain unlawful acts would not justify the defendant in charging that she was insane and in attempting to have her incarcerated in an asylum for the insane. In other words, it would not furnish probable cause for the inquisition for lunacy.

### Liability for Injury Extended to Death from Second Operation

(*Blackwell v. American Film Co., Inc., et al.* (Calif.), 209 Pac. R. 999)

The Supreme Court of California says that, owing to the alleged negligence of the defendants, the plaintiff's husband suffered a fracture of one of his legs above the knee, and no union of the bone could be effected. A little more than six months after the accident, an operation was performed, which was unsuccessful. Mr. Blackwell sued the defendants for damages, and recovered a judgment for \$13,762. About seven months after the first operation, a second operation was performed to effect a bone transplantation, and a short time after the operation the patient died. The judgment was paid to Mrs. Blackwell, as administratrix of her husband's estate. Thereafter, she, as administratrix, brought this action to recover damages for the death of her husband, and recovered a judgment against the film company for \$10,000, which is affirmed.

The fact that the decedent recovered damages for his injuries would not, in itself, prevent a recovery in this case. The only question presented in this connection was whether it could be said that there was no evidence from which the jury might conclude that the accident was the proximate cause of Mr. Blackwell's death. According to the evidence, he was under the care of physicians and was receiving medical attention from the time of the accident until his death. The evidence also indicated that the second operation was a



step in the continuous treatment administered in an endeavor to cure him of the effect of his injuries. The jury might have found from the evidence that the operation was a proper one under the circumstances; in fact, there were no indications to the contrary. In such a case, the treatment by a physician cannot be held to be a new or intervening cause which would relieve the defendant from liability for the original injury.

The defendant film company emphasized the fact that the decedent in this action alleged that his injuries were permanent, and recovered damages on that basis. Such an allegation was immaterial in the case at bar. The measure of damages in the suit brought by him was based on his duty to use reasonable efforts to restore his health and earning capacity. The question in this case was what pecuniary loss was suffered by the plaintiff and her children by reason of the loss of the decedent in his crippled condition. This defendant also specified as error the overruling of its objection interposed to testimony by Mrs. Blackwell that the physician told her husband to go to the hospital to have the second operation. This ruling was correct. Mr. Blackwell had placed himself under the care of a physician, and it was proper to show that, in receiving treatment, he was following instructions given by the physician. In proving this fact, it was competent to admit testimony that certain orders were given. The testimony was not admitted to prove the existence of any fact related by the physician, but to prove that he made the statement in question. The admission of the testimony under such circumstances was not obnoxious to the hearsay rule.

It was insisted further that an instruction given the jury to the effect that, if the decedent used ordinary care in the selection of a physician, and submitted to the treatment prescribed by him, it would be no defense to show that the physician failed to give him the best or proper treatment conflicted with one to the effect that an error of treatment would not relieve the defendant, but, if the physician made use of the opportunity to perform an unnecessary and dangerous experiment on the decedent, and the experiment alone resulted fatally to the decedent, the defendant would not be liable. But these instructions were not in conflict. The former properly told the jury that mere concurring negligence on the part of the physician would not be a bar to a recovery by the plaintiff in this case. The latter told the jury that, if the physician stepped out of the proper field of treatment to perform an unnecessary and dangerous operation, as an experiment for his own benefit, it would constitute an independent, intervening act of the physician, for which the defendant would not be liable.

#### Physician's Report for Accident Industrial Board

(*Emma's Case (Mass.)*, 136 N. E. R. 125)

The Supreme Judicial Court of Massachusetts says that an employee having suffered an injury to his left eye and certain compensation having been awarded therefor, the insurer sought a review and requested permission to introduce further evidence, which consisted of a supplemental report made on a reexamination by a duly qualified impartial physician appointed by the industrial accident board. By Section 9 of the workmen's compensation act, the report of such a physician shall be admissible as evidence in any proceeding, provided the employee and the insurer have been furnished with copies in good season. It is not conclusive. But by the statute, the report is put on the footing of evidence, if copies have been given to the parties in good season. It is not to be assumed that the legislature intended that the board or a single member should give any probative weight whatever to such a report unless it is used as evidence. It was discretionary with the board whether a report should be requested. But having been asked for and furnished and copies duly transmitted, the admissibility of the report did not depend on formal offer of proof. It was before the board for consideration in connection with all the evidence, and the provision of Section 10, that the admission of further evidence was discretionary, had no application. It was competent for either party to offer evidence to rebut or control the clinical statements and conclusions of the report, or to impeach the credibility, impartiality and qualifications of the

certifying physician. But a failure to exercise such rights, or the enforcement of them could not affect the duty of the board to consider the report as evidence for whatever in their judgment it might be worth. Here the board denied the insurer's motion for permission to introduce the further evidence stated, and it is held that, as it was plain that the award was made on a part only of the material and competent evidence, the case must be remanded for further proceedings not inconsistent with this opinion.

#### Death of Child Falling from Bed in Hospital After an Operation

(*Maxie et al. v. Laurel General Hospital (Miss.)*, 93 So. R. 817)

The Supreme Court of Mississippi, Division A, says that this action was brought to recover damages for the death of a child, 8 years of age, who had an attack of appendicitis, and was taken to the defendant hospital for care and an operation, was operated on, and shortly thereafter, when there was no attendant in the ward in which she was placed, fell off the bed and soon afterward died. At the conclusion of the evidence, the trial court, on motion of the defendant, directed the jury to return a verdict in favor of the latter, which was done; but the judgment entered accordingly is reversed on the ground that the liability of the defendant was a question for the jury. The supreme court holds that the business of a hospital for the sick and afflicted, conducted for private gain, carries with it an implied obligation to give the patients therein reasonable care and attention; and such a hospital, so conducted, is liable for an injury received by a patient therein resulting from the negligence of its employees. When a child, 8 years of age, in such a hospital, shortly after being operated on for appendicitis, was left by the employees of the hospital in a ward without an attendant or any means of calling assistance and while so situated for some reason fell from its bed, and its temperature soon thereafter rose rapidly, and in a few hours it died, the question of liability for such injury and death was one for the jury and not the court. Therefore, the court erred in directing a verdict for the hospital.

## Society Proceedings

### COMING MEETINGS

- Alabama, Medical Association of the State of, Mobile, April 17-20. Dr. H. G. Perry, State Board of Health, Montgomery, Secretary.
- American Association of Anatomists, Chicago, March 28-30. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.
- American Association of Pathologists and Bacteriologists, Boston, March 29-30. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.
- American Association of Physicians, Atlantic City, May 1-3. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.
- American Laryngological, Rhinological and Otological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.
- American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.
- Georgia, Medical Association of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.
- Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.
- Kansas Medical Society, Kansas City, May 2-4. Dr. J. F. Hassig, 800 Minnesota Avenue, Kansas City, Secretary.
- Louisiana State Medical Society, New Orleans, April 10-12. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.
- Maryland, Medical and Chirurgical Faculty of, Baltimore, April 24-26. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore.
- Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dye, Clarksdale, Secretary.
- Missouri State Medical Association, Joplin, May 9-11. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
- North Carolina, Medical Society of the State of, Asheville, April 17-19. Dr. L. B. McBrayer, Sanatorium, Secretary.
- Ohio State Medical Association, Dayton, May 1-3. Mr. D. K. Martin, 131 East State Street, Columbus, Secretary.
- South Carolina Medical Association, Charleston, April 17-19. Dr. Edgar A. Hines, Seneca, Secretary.
- Tennessee State Medical Association, Nashville, April 10-12. Dr. Larkin Smith, 154 Eighth Avenue, N., Nashville.
- Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.
- Western Electro-Therapeutic Association, Kansas City, Mo., April 19-20. Dr. Charles Wood Fassett, 115 E. 31st Street, Kansas City, Secretary.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Diseases of Children, Chicago

February, 1923, 25, No. 2

- \*Influence of Growth on Basal Metabolism of Children. G. B. Fleming, Glasgow, Scotland.—p. 85.
- \*Neuropsychiatric Sequelae of Acute Epidemic Encephalitis in Children. F. G. Ebaugh, Philadelphia.—p. 89.
- \*Acute Hemorrhagic Encephalitis: Report of Case Following Scarlet Fever. J. A. Toomey, L. H. Dembo, and G. McConnell, Cleveland.—p. 98.
- \*Intraperitoneal Transfusion with Citrated Blood. D. M. Siperstein, Minneapolis and J. M. Sansby, St. Paul.—p. 107.
- \*Congenital Malaria: Report of Case in Colorado. R. P. Forbes, Denver.—p. 130.
- \*Excretion of Foreign Protein in Human Milk. H. C. Stuart, Boston.—p. 135.
- \*Oxygen Therapy in Premature Babies with Anoxemia. H. Bakwin, New York.—p. 157.
- \*Toxemia of Severe Superficial Burns in Children. B. Robertson, G. Boyd, Toronto, Canada.—p. 163.
- Review of Literature on Blood and Blood Diseases of Infants and Children for Last Four Years (1918-1921). L. W. Hill, Boston.—p. 168.

**Influence of Growth on Basal Metabolism of Children.**—Evidence is presented by Fleming in favor of the suggestion that the high basal metabolism of the growing child may to some extent be accounted for by the amount of energy expended in the manufacture of new tissue.

**Neuropsychiatric Sequelae of Acute Epidemic Encephalitis in Children.**—In seventeen cases of postencephalitis disturbances of a neuropsychiatric type, analyzed by Ebaugh, the psychiatric sequelae consisted of: (1) total change in character and disposition with characteristic hyperkinetic states, leading to behavior oddities consisting of emotional lability, sexual precocity, general incorrigibility, etc.; (2) insomnia with nocturnal agitation; (3) affective disorder of a depressive type; (4) hysterical reactions; (5) tics, fears, and (6) mental deficiency. Neurologic sequelae consisted of headaches, dizziness, diplopia, drowsiness, asthenia and oversalivation. Disturbances in motility, especially choreiform movements, were present. These disturbances appear to be related to the mental state. Visual disturbance and facial weakness also occurred as residuals. Evidence of endocrine change was noted in one case. Ebaugh suggests that the prognosis should be guarded; but pessimism should be avoided. Fifty per cent. of these patients are well or improving. There is no specific treatment for these conditions. Children should be sent to psychopathic wards for observation. Spinal drainage was effectual in several cases. These children do not react to discipline.

**Acute Hemorrhagic Encephalitis Following Scarlet Fever.**—The hemorrhages found in the brain, and the character of the onset and symptoms of the case reported by Toomey et al. conform to the description of the Strümpell-Leichtenstern type. The brain symptoms appeared just three weeks after the onset of the scarlet fever.

**Intraperitoneal Transfusion with Citrated Blood.**—The intraperitoneal route for blood transfusions is proposed by Siperstein and Sansby as a therapeutic method of merit, one which will overcome many of the objections to other routes of conveying blood to a child. The intraperitoneal transfusion of freshly citrated blood acts as a true transfusion and not as the absorption of a nutrient material. The work on which the method is based was done on rabbits.

**Case of Congenital Malaria.**—The case reported by Forbes owes its chief interest to the fact that the anopheles mosquito can be excluded as the source of infection, and that intra-uterine infection, therefore, does occur. The child was 7 weeks old when the first attack occurred. The patient had six febrile attacks at seventy-two hour intervals, before the periodicity was fully appreciated. The mother gave a history of an unusually severe quartan infection in Greece, seven years before, but asserted that she became free from all symptoms three months after coming to the United States

in 1916. Quinin hydrochlorid, 2 grains every four hours, was begun and continued for four days; then it was given three times daily for four days, then three times on each of two days of each week for two months. Twenty days after quinin therapy was begun, the spleen could not be palpated. The baby had gained 26 ounces in fourteen days. At 6 months, the baby weighed 16 pounds, and had been free from any symptoms of malaria since treatment was begun.

**Excretion of Foreign Protein in Human Milk.**—Stuart cites experiments which he believes warrant the conclusion that egg-white protein is not demonstrable in the breast milk of mothers by any of the methods at present at our command. He does not suggest that such protein may not be present in infinitely small amounts, but knowing what small traces of egg-white will sensitize guinea-pigs, he feels that the conclusion is warranted that infants must be extremely sensitive to be affected by the amounts which they receive from this source. The explanation, therefore, of the frequent finding of these positive reactions in exclusively breast fed infants has not as yet been given, and the problem calls for further investigation. Stuart's results, however, fail to suggest that breast milk is a medium for the transmission of antigen.

**Oxygen Therapy in Premature Babies with Anoxemia.**—Two prematurely born babies with marked anoxemia, as indicated by the cyanosis and the increase in the oxygen unsaturation of the venous blood, were treated with oxygen inhalations. In both instances the cyanosis disappeared and the saturation of the venous blood rose to normal. The oxygen was given through a rubber tube inserted into the mouth.

**Treatment of Toxemia of Burns in Children by Exsanguination-Transfusion.**—In casting about for some means of relieving the toxemia incident to burns, the operation of "exsanguination-transfusion" was devised by Robertson and Boyd. The operation consists in the initial withdrawal of blood from the patient's longitudinal sinus or femoral vein until the limit of safety is reached. The transfusion is then commenced in an elbow vein. Withdrawal of the patient's blood and injection of fresh blood are then carried on simultaneously until the amount withdrawn is slightly less than the amount available for transfusion. The withdrawal is then discontinued and the remainder of available blood injected. The amount of blood withdrawn has ranged from 200 c.c. in an infant, up to 500 c.c. in a child 3 years of age. The results have been very encouraging. In ten cases of burns of the type described (i. e., with convulsions), two children received blood transfusion and eight were subjected to exsanguination-transfusion. Three of the latter died from burn toxemia. In the other seven cases, the burn toxemia was relieved.

#### American Journal of Hygiene, Baltimore

January Supplement, 1923, 3

- Analysis of Malaria Epidemiology. A. J. Lotka, Baltimore.
- I. General Part.—pp. 1 and 38.
- III. Numerical Part.—p. 55.
- IV. Incubation Lag. F. R. Sharpe and A. J. Lotka, Baltimore.—p. 96.
- V. Summary. A. J. Lotka, Baltimore.—p. 113.

#### American Journal of Medical Sciences, Philadelphia

January, 1923, 165, No. 1

- \*Effects of Acute and Chronic Pneumothorax. J. L. Yates, Milwaukee.—p. 1.
- \*Aneurysm of Hepatic Artery. J. Friedenwald, Baltimore, and K. H. Tannenbaum, Chicago.—p. 11.
- \*Fibrillation of Auricle Returned to Normal Rhythm. L. F. Bishop, New York.—p. 29.
- \*Case of Heart Block and Auricular Fibrillation with Postmortem Specimen; Etiology of Fibrillation. S. Neuhof, New York.—p. 34.
- \*Arsenical Treatment of Chronic Infectious Endocarditis. J. A. Capps, Chicago.—p. 40.
- \*Fate of Arsenic After Intravenous or Intrathecal Injection. R. D. Rudolf and F. M. R. Bulmer, Toronto.—p. 47.
- Pneumothorax in Tuberculosis. J. J. Singer, St. Louis.—p. 54.
- Surgical Neuroses of Thyroid. J. Rogers, New York.—p. 66.
- \*Influence of Oliguria on Nitrogen Retention in Blood. O. H. P. Pepper, Philadelphia.—p. 81.
- \*Persistent Leukocytosis in Early Stages of Thrombo-Angiitis Obliterans. H. M. Thomas, Jr., Baltimore.—p. 86.



\*Injury of Spinal Cord in Breech Extraction as Important Cause of Fetal Death and Paraplegia in Childhood. B. Crothers, Boston.—p. 94.

Visceral Adhesions and Bands: Normal Incidence (Second Paper). J. Bryant, Boston.—p. 111.

\*Is Stomach Focus of Infection? N. Kopeloff, New York.—p. 120.

**Effects of Acute and Chronic Pneumothorax.**—On the basis of personal clinical experience, Yates regards an acute pneumothorax as being dangerous in so far as it interferes with the pulmonary circulation. The extent of the danger is determined by the integrity of the circulation, chiefly by the latent energy of the myocardium. Since reserve myocardial energy cannot be estimated accurately and is quite essential to life during a period of stress, open thoracotomy should be performed with some form of differential pressure. Thus alone may the degree of pulmonary deflation required for the intrathoracic operation be permitted to develop gradually, be controlled so as not to become excessive and allowed to be as transient as possible. The operation is incomplete until full pulmonary inflation is both obtained and maintained. The latter is possible only when suitable one way primary drainage is used. Gas-oxygen positive pressure analgesia as developed by Gwathmey is simple, safe and satisfactory, and, in the absence of a negative pressure cabinet is the best method now available. Chronic pneumothorax, as well as chronic pulmonary compression by the pleuritic effusions inevitable after thoracotomy, must be avoided if surgeons would assure to patients the best chances for rapid, comfortable and complete recovery. Experiment data are given.

**Aneurysm of Hepatic Artery.**—Friedenwald and Tannenbaum add one case to the sixty-five recorded in the literature. On account of the age of the patient, his loss of flesh, absence of pain, jaundice, blood in the stools, diminution in pancreatic ferments, and the roentgen-ray findings, the diagnosis was made of carcinoma of the pancreas, though the possibility of a stone lodged in the ampulla could not be ruled out entirely. While on the commode, but before his bowels had moved, the patient had a sudden fainting attack. He lost consciousness and his pulse became imperceptible. This was associated with a very severe pain in the right hypochondrium just to the right of the epigastrium. Half an hour after the collapse the patient had a profuse bowel movement, but there were no evidence of blood clots or hemorrhage. Following this there was a second partial collapse, which was again relieved by the administration of camphorated oil. The attacks remained unexplained, except the possibility of an internal hemorrhage. Two days later he suddenly uttered a cry, became pulseless and died. The diagnosis of hemorrhage was made, the cause of which was not ascertained until the necropsy disclosed an aneurysm of the hepatic artery which had perforated. The symptoms most frequently observed in aneurysm of the hepatic artery are pain, hemorrhage, icterus, enlargement of the liver, fever, fluctuating tumor in the region of the gallbladder, marked anemia, emaciation, together with attacks of syncope, dizziness, headaches, weakness and indigestion. All of these symptoms are rarely present in any individual case and ordinarily there are but few symptoms. In many instances the patient dies after a single attack of pain followed by hemorrhage without having had any previous symptoms whatever. Ligation of the hepatic artery is the only rational methods of treatment.

**Fibrillation of Auricle Returned to Normal Rhythm.**—Four cases are cited by Bishop which illustrate the return to normal rhythm in hearts which have been the seat of fibrillation of the auricle but were later normal in their auricular function. One example is that of a man with extremely advanced circulatory disease, which is shown by an enormous enlargement of the heart, the maintenance of a terrific blood pressure, the recurrence at various times of all the cardiac symptoms of heart failure, namely, dyspnea, edema, congestion of the lungs, liver and kidneys, and occasionally fibrillation of the auricle. This man, nevertheless, now presents a fair appearance of health and a regular heart as the result of being put on a strict regimen. The only specific treatment he has been given for his fibrillation is digitalis. His normal rhythm is, therefore, a part of the natural history of the ups and downs of the auricle. Another illustration of auricular fibrillation of an entirely different character is that of a man

who developed cardiac disease as a result of long standing, continued nervous strain and overwork. He had symptoms of angina pectoris. At the time of his examination he had auricular fibrillation. His heart is now regular as a result of a strict regimen.

**Heart Block and Auricular Fibrillation.**—The chief pathologic changes found in the heart in this case, which Neuhoef believes were undoubtedly the final cause of the cardiac disturbance, were found in the coronaries, in the artery of the auriculoventricular node (the node of Tawara) and in the musculature surrounding the node. The coronary artery was thickened and sclerosed, although still patulous. The artery supplying the auriculoventricular node (the beginning of the auriculoventricular conduction system, the normal conveyor of impulses from auricle to ventricle) was completely calcified. Surrounding the artery (and probably as the result of its calcification) was a distinct zone of degenerated musculature, which undoubtedly included the node, either in whole or in part. Neuhoef is convinced that the calcifying process in the coronary artery, and particularly in the artery of the node, had been going on for many years, yet the patient at the time of death was 80 years old and had lived in cardiac comfort until sudden heart failure supervened; in all probability this resulted from final complete closure of the calcified artery supplying that node. This case is another illustration of the fact that the slow process of intracardiac arterial disease may never at any time sharply interfere with the factor of safety of the heart, and that ample time had probably been given for the establishment of coronary anastomosis; for, contrary to older teachings, it is now known that the coronaries are not end arteries and that many deeply situated anastomoses exist.

**Arsenical Treatment of Chronic Infectious Endocarditis.**—During the past twelve years Capps has treated all of his cases of chronic infectious endocarditis with daily injections of sodium cacodylate (usually intravenously), continued over a period varying from seven weeks to four months. In many of these patients he failed to find bacteria in blood cultures, although the other clinical findings were sufficiently characteristic for making the diagnosis. Eight cases were proved by blood cultures. Two of these patients died, and six survive. The duration of the disease in the fatal cases was six and thirteen months, respectively. The observation of the six surviving cases extends over periods of from eleven years and six months, to three months. Four patients have remained in good health for two years and more may be reasonably classified as recoveries. The only specific therapy attempted was the prolonged use of sodium cacodylate in daily doses of from 1 to 4 grains. The drug was pushed until a strong garlic odor was expelled with the breath. Capps feels that the preparations sold on the market in ampoule form are not very dependable, so that it is advisable to make a fresh preparation every few days of a reliable drug. No untoward effects were observed in any case. If the bowels became loose the dose was decreased for two or three days. Rest in bed was insisted on during the period of treatment. The results of blood cultures were of especial interest. *Streptococcus viridans* was the organism found in all cases. All the healed cases showed disappearance of bacteria from the blood during recovery.

**Fate of Arsenic After Intrathecal and Intravenous Injection.**—Rudolf and Bulmer assert that when arsenic is injected intravenously little, if any, of it reaches the central nerve tissues. When it is given in therapeutic doses intrathecally none of it can be detected in the spinal cord.

**Influence of Oliguria on Nitrogen Retention in Blood.**—The influence which marked reduction in the quantity of urine may have on the excretion of nitrogen, and so indirectly on the level of nitrogen in the blood, does not, in Pepper's opinion, seem to receive adequate recognition. The principle is well known, but it has not been sufficiently applied, and certain points which it seems to make clear have, therefore, been left in confusion and uncertainty. In nephritis, for example, there is often a decrease in urinary output, a failure to excrete sodium chlorid and a moderate rise in the level of the various fractions of the noncoagulable protein of the blood. In such cases it is frequently assumed that there is



impairment of the urea-excreting function of the kidney, as well as interference with the elimination of water and salt. Some even dignify these cases with the name "mixed nephritis." When the evidence is examined, however, one cannot help being impressed by the fact that the nitrogen retention may in some instances be the result solely, or in large part, of interference with water elimination; and that the urea excreting function of the kidney may be entirely unimpaired. If this view is accepted, a number of apparently contradictory observations become harmonized. In the treatment of nephritis an appreciation of these principles is important, for they supply a basis for understanding what can be expected of the kidneys in a given condition. They emphasize the importance of maintaining polyuria when the concentration ability is diminished and of decreasing, if possible, the urea production to an amount which the concentration maximum and the amount of urine, indicate that the patient can dispose of. Little or nothing can be done therapeutically toward raising the concentration ability of the kidneys but, by avoiding passive congestion and body dehydration, it is possible to make sure that the kidneys shall have every opportunity to excrete water; and by reducing the protein of the diet and by avoiding tissue destruction as far as possible, the demands placed on the nitrogen-excreting function of the kidney can be lowered and so one factor is avoided which undoubtedly favors nitrogen retention in the body.

#### **Persistent Leukocytosis in Thrombo-Angiitis Obliterans.**

The case described by Thomas is believed to be one of thrombo-angiitis of the arteries and veins supplying both lower extremities. The patient is a full blooded Jew, born in the United States; his parents were citizens of Austria-Hungary. He has smoked cigarets to excess for many years. After a sudden attack, in 1918, of auricular fibrillation (which subsided) he was well until April, 1921, when he first became troubled with severe pains in the lower extremities on walking. It was then found that he had a white blood count of 22,000. The pain in the legs and numbness of the left foot increased during the next seven months and the leukocytosis persisted. The rather widespread distribution of the vascular disorder with a comparatively low grade of cyanosis without rapid blanching on change of position of the leg clouded the exact diagnosis. There was evident obstruction to the arterial flow in the vessels of both lower extremities. Whether this is or is not due to true thrombo-angiitis obliterans, the subsequent course of the disease alone can decide. The existence of a well marked and persistent leukocytosis is emphasized. It would seem probable that a leukocytosis may be found to occur frequently in the early stages of thrombo-angiitis obliterans; if this is verified the fact would lend weight to Buerger's contention that the process is infectious in nature.

**Injury of Spinal Cord Cause of Fetal Death.**—Five cases are reported in which crippling depended on injuries to the spinal cord apparently caused by breech extraction. In making the diagnosis, pathologic, clinical and physiologic facts are considered. Four of these cases showed conclusive evidence of practically complete transection. One child showed evidence of an incomplete lesion.

**Is the Stomach a Focus of Infection?**—The study made by Kopeloff showed that the bacterial content of the stomach is influenced by the saliva; hence it may be inferred that the stomach is not acting as a focus of infection but merely as a receptacle for the bacteria poured into it. This is in agreement with the bacteriologic investigations of others to the effect that gastric acidity is sufficient to prevent bacterial development.

#### **American Journal of Obstetrics and Gynecology, St. Louis**

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\*Microscopic as Compared with Clinical Diagnosis of Malignant Uterine Neoplasm. C. C. Norris, Philadelphia.—p. 1.

\*Treatment of Cystocele, Rectocele and Uterine Prolapse. R. T. Frank, Denver.—p. 8.

\*Blood Sugar During Pregnancy and Puerperium. W. N. Rowley, Rochester, Minn.—p. 23.

\*Sugar Test in Pregnancy. W. F. Welz and A. E. Van Nest, Detroit.—p. 53

Pathology of Uterine Bleeding in 100 Analyzed Cases. H. Grad, New York.—p. 37.

Hemorrhagic Lesions of Placenta and Their Relation to White Infarct Formation. F. P. McNalley and W. J. Dieckmann, St. Louis.—p. 55.

\*Blood in Normal Pregnancy. O. S. Krebs and A. P. Briggs, St. Louis.—p. 67.

Renal Colic Associated with Urethral Conditions in Women. E. MacD. Stanton, Schenectady, N. Y.—p. 72.

\*Bacteriology of Fatal Systemic Infections Following Miscarriage or Abortion. W. B. Moody, Chicago.—p. 78.

\*Repeated Dystocia from Fetal Anomaly in Successive Pregnancies. A. L. McDonald, Duluth, Minn.—p. 82.

"Once a Cesarean Section, Always A Cesarean Section," An Untruth. J. P. Greenhill, Chicago.—p. 86.

**Diagnosis of Malignant Uterine Neoplasm.**—In Norris' series of 391 cases of malignant tumors of the uterus, the clinical diagnosis was positive and correct in 272 cases (69.3 per cent.); the true condition was suspected in an additional fifty-nine cases (15 per cent.); in fifteen cases (3.8 per cent.) the clinical diagnosis was malignant tumor, but the type of neoplasm was not recognized, and in forty-five cases (11.5 per cent.) the condition was clinically regarded as benign and its true character determined only on histologic examination.

#### **Treatment of Cystocele, Rectocele and Uterine Prolapse.**

In the repair of a cystocele, the principle involved in the operation done by Frank is based on separation of the descended bladder from the uterine cervix, repair of the pubocervical fascia in the median line, and suture of this structure high up to the cervico-uterine junction so as to reestablish a tense continuous bladder shelf. For repair of a high rectocele, the operation consists in exposure of the anterior rectal wall, high up, opening of Douglas' cul de sac, obliteration of this pouch by circular suture and repair of the torn rectal fascia. This repair is usually combined with repair of low rectocele and torn perineal body. To repair a low rectocele and lacerated perineum, Frank makes an exposure of the anterior rectal wall, separates the rectum laterally from adjacent structures, and approximates the levator edges and triangular ligament en masse.

**Blood Sugar During Pregnancy.**—The average range for blood sugar concentration in normal pregnant women is stated by Rowley to be from 0.09 to 0.11 per cent., the same as that found in nonpregnant women. The average value found by him in fifty-three observations of the blood sugar concentration during pregnancy was 0.11 per cent. The average value in thirty-two observations of the sugar concentration of fetal blood taken from the umbilical cord immediately after delivery was 0.09 per cent. The average value for twenty-two observations of the blood sugar concentration on the second day postpartum was 0.14 per cent. Placental interchange of glucose, in Rowley's opinion, is undoubtedly dependent on the higher concentration of blood sugar in the mother. The influence of muscular exertion during labor is not a factor in postpartum hyperglycemia. Anesthesia with ether is a contributing but not a determining factor in producing a rise in the sugar concentration of the cord blood. Asphyxia produces a more marked rise than anesthesia with ether. Involution of the uterus cannot be shown to be the primary factor in producing postpartum hyperglycemia. The general physiologic change associated with involution may be a factor in producing postpartum hyperglycemia. In certain types of toxemia there is an increase in the blood sugar concentration.

**Sugar Test in Pregnancy.**—With pregnant women an alimentary administration of even 100 gm. of grape sugar leads to glycosuria with blood sugar under 0.19 per cent. which means that the spontaneous and artificial glycosuria of pregnancy occurs without an important increase of blood sugar content. Hence, this renal glycosuria of early pregnancy may be used to diagnose pregnancy during the first trimester. This artificial renal glycosuria is present constantly in pregnancy only during the first three months, when other signs of pregnancy are inconclusive. After the twelfth week of pregnancy, it rapidly disappears, and can be evoked in the later months only in a definite percentage of cases (about 30 per cent.). Welz and Van Nest have used this method of diagnosis of early pregnancy in seventy-one cases. In the first twenty-seven cases 100 gm. of glucose were used. As this was not entirely satisfactory, a change to 150 gm was



made. In the first series of twenty-seven tests using 100 gm. glucose, seven women were at periods ranging from fourteen to twenty-four weeks pregnant. As these were all advanced too far in pregnancy to diagnose by the sugar test, they may be ruled out entirely. Only one of these seven women gave a positive result, at fourteen weeks; two had excessive hyperglycemia, from 307 to 410 mg. per hundred cubic centimeters of blood which was not considered as diagnostic of pregnancy. Of the other eighteen, which were under the twelve weeks' period, fifteen agreed with the final diagnosis and three disagreed. In this series the urine was examined only at forty-five minutes and one hour. In the second series of forty-four cases in which 150 gm. of glucose was used, only two cases of those within the twelve weeks of pregnancy disagreed. These failed to give a positive sugar test, though they later proved to be pregnant. In no case was there a positive glycosuria, where there was no pregnancy, though blood sugar estimations were as high as 216.2 mg. per hundred cubic centimeters of blood.

**Blood in Normal Pregnancy.**—The results of the study of blood made by Krebs and Briggs with special reference to the inorganic constituents shows a great constancy of all the elements in normal pregnancy, regardless of the period of gestation, with one exception, namely, that in the last weeks of pregnancy the calcium content was lowered slightly.

**Bacteriology of Fatal Systemic Infections Following Abortion.**—From a study made by Moody of the bacteria found in women dying from sepsis following abortion, it appears that the hemolytic streptococcus is more often found than other organisms, but that such bacteria as *Bacillus coli* and staphylococci are not infrequently present. The possibility is suggested that the hemolytic streptococci are present in the lochia but that some outside influence, such as trauma from instrumentation, douches, and the like, is necessary to bring about generalized infection.

**Repeated Dystocia from Fetal Anomaly.**—The two cases reported by McDonald concerned the same mother in two pregnancies. They present four types of anomaly: (1) polydactylism and syndactylism; (2) situs transversus; (3) some anomaly of the urinary tract with hypertrophy of the bladder wall and patent urachus; (4) ascites.

### American Journal of Tropical Medicine, Baltimore

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- Prevalence of Yellow Fever Mosquito, *Aedes Calopus*, in Southern Part of Peru. L. H. Dunn, Ovid, New York.—p. 1.  
Stegomyia Indices and Their Value in Yellow Fever Control. M. E. Connor and W. M. Monroe, New York.—p. 9.  
Limit of Usefulness of Fish in Larvae (*Aedes Calopus*) Control. W. M. Monroe, New York.—p. 21.  
\*Hepatic Lesions of Experimental Yellow Fever. T. G. Perrin, Mexico.—p. 27.  
\*Transmission of Rocky Mountain Spotted Fever by Rabbit Tick *Haemaphysalis Leporispalustris* Packard. R. R. Parker, Hamilton, Montana.—p. 39.  
Biology of *Leishmania Tropica*. A. M. Pedrosa, Sao Paulo, Brazil.—p. 47.  
\*Presence of Yeast-Like Bodies in Blood of Human Beings. M. S. Fleisher and M. Wachowiak, St. Louis.—p. 59.

**Hepatic Lesions of Experimental Yellow Fever.**—In the livers of guinea-pigs which died after injection of virulent cultures of *Leptospira icteroides* Perrin found (apart from intense congestive and hemorrhagic phenomena, fibrous reactions of the stroma and vascular walls, etc.) two principal types of lesions: fatty degeneration or dystrophic steatosis, acute and profuse; and insular necrosis, analogous to that found in human livers from fatal cases of yellow fever. The insular necrosis presents characteristics analogous to those observed in experimental infectious jaundice in the guinea-pig.

**Rocky Mountain Spotted Fever Transmitted by Rabbit Tick.**—The data involving the rabbit tick, which Parker presents, indicate that in seeking for the factors responsible for the maintenance of Rocky Mountain spotted fever in nature, rabbits must be reckoned as one of the possibilities. It seems probable that Rocky Mountain spotted fever can be maintained among wild rabbits by means of the rabbit tick without the presence of the wood-tick, *Dermacentor venustus* Banks. It is furthermore probable that this fever may exist in the rabbit population in localities in which human cases

have not been known and also that it may be far more generally distributed among the rodents in the northwestern states, especially in rabbits, than the known distribution of human cases would indicate.

**Yeastlike Bodies in Blood of Human Beings.**—Yeastlike organisms were found by Fleisher and Wachowiak in the blood of three persons suffering with chronic diarrhea. These organisms fed to animals produced diarrhea and death, and they could usually be recovered from both the intestinal mucosa and the heart's blood at necropsy, thus confirming their etiologic relationship to the disease in human beings. The finding of a yeastlike organism in one case of sprue suggests to the authors that further studies must be made in this disease.

### Archives of Ophthalmology, New Rochelle, N. Y.

January, 1923, 52, No. 1

- Should We Still Consider Ocular Tension as Being Due to Aqueous Humor? Ocular Tension After Puncture of Anterior Chamber or Pressure on Eyeball. A. P. Magitot, Paris.—p. 1.  
Isolated Paralysis of Inferior Oblique. S. B. Marlow, Syracuse, N. Y.—p. 12.  
Factors Influencing Choice of Method for Cataract Extraction. D. Smith, Bridgeport, Conn.—p. 25.  
Paralysis of Divergence; Report of Three Cases Due to Epidemic Encephalitis. J. H. Dunnington, New York.—p. 39.  
Bitemporal Contraction of Visual Fields in Pregnancy. C. E. Finlay, Havana, Cuba.—p. 50.  
Abiotrophy: Ophthalmoplegia Externa. A. W. Stirling, Atlanta, Ga.—p. 56.  
Law of Rotation of Astigmatic Axis. A. W. Stirling, Atlanta, Ga.—p. 62.  
Metastatic Thyroid Tumor in Orbit. A. Knapp, New York.—p. 68.  
Basal Cell Carcinoma of Orbit and Ethmoid: Operation; Radium Application. J. Green, Jr., St. Louis.—p. 75.  
Case of Epibulbar Melanotic Sarcoma, Occurring Sixteen Years After an Injury. J. M. Ball and H. D. Lamb, St. Louis.—p. 80.

### Boston Medical and Surgical Journal

Feb. 8, 1923, 188, No. 6

- Medical Supervision at Antioch College. G. H. Bigelow, New York.—p. 157.  
Young "Cardiac Cripple," with Especial Reference to ex-Soldiers. F. H. McCrudden, Boston.—p. 164.  
\*Plea for Testing Selected Single Specimens of Urine, with Special Regard to Diabetes. H. Gray, Boston.—p. 168.

**Testing Single Specimens of Urine.**—Albumin, casts and sugar, Gray says, are overlooked frequently when the physician examines a random sample of urine and, furthermore, even in the twenty-four hour amount. Hence, the best method alike for early diagnosis, for treatment, and for the doctor's periodic study, is to test every single specimen throughout twenty-four hours. Intermittent glycosuria often occurs at unexpected hours. Casts also are far more constantly found in fresh single specimens than in twenty-four hours specimens, particularly in diabetic urines. When it is impracticable for the physician to study every sample, it is desirable to investigate a specimen one hour after a hearty meal.

### California State Journal of Medicine, San Francisco

January, 1923, 21, No. 1

- \*Resection of Distal End of Ulna for Shortening Radius Following Fracture. C. Hoag, San Francisco.—p. 1.  
\*Syphilitic Headache. I. C. Sutton, Anaheim.—p. 3.  
Uterine Myomas and Their Treatment. W. H. Gilbert, Los Angeles.—p. 5.  
Posterior Vaginal Drainage with Description of New Instrument Used as Vaginal Pelvic Guide. F. R. Girard, San Francisco.—p. 9.  
Pirquet System and American Requirements. W. E. Carter, Los Angeles.—p. 12.  
Use of Pupilloscope in Neurology. H. G. Mehrtens, and O. Barkan, San Francisco.—p. 13.  
\*Tumors of Breast Arising During Pregnancy and Lactation. A. R. Kilgore, San Francisco.—p. 14.  
Adenoma of Thyroid. J. H. Shephard, San Jose, Calif.—p. 16.  
Posttonsillectomy Pulmonary Abscess. M. E. Botsford, San Francisco.—p. 19.  
\*Treatment of Constipation. R. M. Clarke, Santa Barbara.—p. 22.  
Educational Standards in Physiotherapy. R. L. Wilbur, Yosemite Valley.—p. 24.  
Constitutional Psychopathic Inferiority. W. House, Portland, Ore.—p. 26.  
Brisement Forcé, and the For and After Treatment. A. Gottlieb, Los Angeles.—p. 29.  
Treatment of Painful Affections Involving Cervical Vertebrae. H. L. Langnecker, San Francisco.—p. 31.

**Resection of Distal End of Ulna for Shortening Radius Following Fracture.**—In cases of fracture of the radius in



which either the shaft of the radius had been shortened by loss of bone or an overlapping of the fragments, or those cases in which the epiphysis had been impacted or comminuted, causing a definite protrusion of the ulna into the wrist joint sufficient to limit ulnar flexion of the hand with or without subluxation of the ulnar head, Hoag has resected the distal end of the ulna. Whether a subperiosteal resection is done or the periosteum is also excised seems immaterial, except from the standpoint of preserving the radio-ulnar ligaments and avoiding the formation of callus. Reformation of bone which limits motion seldom occurs, providing a full range of motion is maintained from the start to mold the callus. A satisfactory result depends on the observance of this point. Usually no splint or cast is necessary. The use of a sharp chisel, instead of a Gigli saw, is urged as being less damaging to the radio-ulnar attachments. The operative technic is simple; it does away with the need for immobilization; there is no possibility of nonunion and less opportunity for infection. Rotation of the forearm and lateral motion of the wrist are more completely restored. The restoration of strength and the cosmic results are generally better. Four cases are cited.

**Syphilitic Headache.**—Out of 200 consecutive cases of syphilis with early cutaneous lesions seen by Sutton, headache was the symptom most complained of in eight instances and was present in varying degree in forty-two cases. The pain may vary from a dull throbbing ache in mild cases to severe flashes, accompanied with fever, giddiness, a slowing of the pulse rate, and even convulsions. Syphilitic cephalalgia is consistently worse at night. As a rule, the pains start in the occipital region and spread up over the vertex in lightning-like flashes, but do not follow the course of any certain nerve. Often of vesperal onset, they may even waken the unfortunate patient from deep sleep, with the whole body aching "in concert." While occasionally a superficial tenderness over the skull may suggest a periostitis, or a dull ache may resemble that of any acute infection, all the headaches of early syphilis, Sutton says, should be regarded as being due to an early meningeal irritation, unless definitely proved otherwise. Head pain due to syphilis of the cranial and peripheral nerves was present only twice in Sutton's series of cases. He emphasizes that syphilis should be suspected in all instances in which head pain is a prominent and chronic symptom.

**Tumors of Breast Arising During Pregnancy and Lactation.**—This paper is a report of an interesting study made by Kilgore of the tumors of the breast arising in connection with functional activity of the organ. Of a total of 1,099 cancers, forty-nine, or 4.45 per cent., arose during breast activity. In lactation and pregnancy, cancer, galactocoele, tuberculosis and adenoma comprise more than 90 per cent. of the tumors, in the order of frequency named. Ninety-three per cent. of the cancers arose after 30, while 68 per cent. of the benign tumors arose under this age. Twenty per cent. of all pregnancy and lactation cancers were first noted during the beginning four months of lactation. The number of cases of cancer per hundred thousand pregnant or lactating women increases markedly after the age group 35 to 39 over the number of cases of cancer per hundred thousand women not pregnant or lactating. Forty-five of the forty-nine patients with breast cancer were traced five years or more after operation, and of this number six were well when last heard from, i. e., 13 per cent. (unselected) proved to be five-year cures—not as high as the percentage of cures in unselected cases of breast cancer generally, but indicating, as cancer statistics go, a far from hopeless prognosis for malignant disease arising in connection with breast activity.

**Treatment of Constipation.**—Constipation is either spastic or atonic. Both conditions are the results of long continued irritations and inflammations; therefore, curing the irritation or inflammation will also cure the constipation, be it either spastic or atonic. As a producer of irritation to the colon, Clarke says, the cathartic habit easily takes first rank. Among cathartics, salts of all kinds, with their ever present osmotic action, are probably more injurious than all others. Each dose makes worse the malady it is intended to relieve, and convinces the patient the more strongly that nothing

short of "dynamite" will do any good. The indiscriminate use of bran and other irritating foods is another great cause of constipation. Vaunted by health lectures and magazines, advertised by commercial food concerns, and many times by the doctor as well, it continues to be, when put into an already inflamed tract, irritating. Although producing bowel movement for a while, it only serves to deepen and increase the inflammation which is the basis of the patient's malady. The enema is nearly as bad as the cathartic. It washes away normal secretions and introduces a foreign substance to further irritate the bowel and rectum. The mental attitude is no small factor in the cause of constipation. The patient "thinks" he needs a cathartic and attempts to "beat nature to it" with a cathartic until he gets firmly fixed in his mind an idea that the bowels will not move of themselves. Unbalanced dietary is a cause of constipation. Reflex irritations, as a diseased gallbladder or appendix, an ulcer, or pelvic conditions are prolific causes of constipation. Irregular habits, and failure to promptly answer the call to evacuation, soon result in a loss of the "call" and eventually in inflammation of the pelvic loop, and should be named as causes of constipation. Unusual stress, or any strain that is beyond the ability of the patient to carry indefinitely, either physical or mental, is a great cause of constipation. The removal of bulk from the diet is the one great means of reducing irritation to the colon. The diet must be reduced to liquids of no residue and kept thus until bowel movement has been accomplished. After this the diet can be increased, gradually and carefully. Medicinal treatment is mainly of a negative character. All cathartics are stopped entirely, and the patient is impressed that they must not be taken again except in great emergency. Enemas, whether medicated or plain, are also stopped, as they are a source of irritation. Clarke gives an intestinal powder every three hours in the beginning. It not only provides bulk but it is nonirritating while the patient is on a nonresidue diet, and it is also very soothing and healing to the irritated mucosa and nerve endings. It should be reduced gradually as bulk is put back into the diet. The powder contains bismuth subnitrate, calcium carbonate and calcium phosphate, each 1 ounce, taken in one teaspoonful dose, every three hours, in water. An oil enema of cottonseed oil should be given every night at 8 or 9 o'clock. Heat to the abdomen is very essential. Fomentations should be given every three hours, each set lasting from fifteen to twenty minutes. Rest is of vital importance, especially to the exhausted patient. Exercise, instead of rest, is beneficial only to those patients suffering from dyschezia.

### New Jersey Medical Society Journal, Orange

February, 1923, 20, No. 2

- Uterus and the Curet. A. S. Harden, Newark, N. J.—p. 37.  
Treatment of Hypertension in Cardiorenal Disease. D. Riesman, Philadelphia.—p. 41.  
Autosuggestion. T. R. Chambers, Jersey City, N. J.—p. 46.  
Mental Abnormalities and Problem of Eugenics. A. Gordon, Philadelphia.—p. 47.  
Interest of Medical Profession in Public School Hygiene. H. W. Haight, Highland Park, N. J.—p. 55.

### New York Medical Journal and Medical Record

Feb. 7, 1923, 117, No. 3

- \*Diagnostic and Therapeutic Importance of Some Typical Tender Bone Points. R. Bastianelli, Rome, Italy.—p. 125.  
Bifurcation Treatment of Irreducible, Acquired or Congenital Hip Dislocations. A. Lorenz, Vienna.—p. 130.  
Lorenz Bifurcation Operation. D. D. Ashley, New York.—p. 136.  
Correction of Congenital Club Foot. E. H. Bradford, Boston.—p. 138.  
Foot Strain in Golf. N. D. Mattison, New York.—p. 142.  
Massage in Sprains, Dislocations and Fractures. P. Kouindjy, Paris, France.—p. 145.  
Exercise in Acute Infectious Arthritis. S. W. Boorstein, New York.—p. 150.  
Results of Exercise for Correction of Postural Defects. R. J. Cook, New Haven, Conn.—p. 155.  
Contracted Achilles Tendon. A. Gottlieb, Los Angeles.—p. 157.  
Diagnosis and Treatment of Minor Injuries to Lumbar Spine and Sacroiliac Joints. M. B. Cooperman, Philadelphia.—p. 159.  
Suppurative Arthritis. H. Cohen, New York.—p. 163.  
One Hundred Cases of Weak Feet in Adults with Pedographic Findings. J. Grossmann, New York.—p. 164.

**Diagnostic and Therapeutic Importance of Tender Bone Points.**—A great number of persons, especially women, com-



plain of pain in various parts of the body, of which it is difficult to establish the seat and the nature, and consequently they are treated as suffering from nervousness, neuralgia, hysteria, or from material diseases of organs or parts of the body in the neighborhood of the pain, e. g., loose kidney, intestinal neuralgia, chronic appendicitis, arthritis, or perioritis. Bastianelli has paid a great deal of attention to the bones as the possible location of the pain. The treatment instituted, directed toward the affected bone, has been successful. It consisted of the injection of from 10 to 20 minims of phenol, 3:100 or 5:100, deeply on the bone exactly at the painful point. The injection must be repeated four or five times at different intervals according to the reaction. In the chronic cases, especially of the superior humeral, superior tibial, posterior lumbar, and rib and scapula points, the results have been extraordinary; less in the epicondyle and styloid pain and in the coccygodynia, perhaps because it is more difficult to inject them well. In the acute form, the reaction is more severe and the disease for the time being becomes worse.

### U. S. Naval Medical Bulletin, Washington, D. C.

January, 1923, 18, No. 1

- Study of Earth Sciences; Its Purpose and Its Interrelations with Medicine. T. W. Vaughan.—p. 1.  
Psychometric Tests for Recruiting Stations. J. R. Poppen.—p. 14.  
Problem of Malaria in Marines in Haiti. A. H. Allen.—p. 25.  
Functions and Organization of Medical Corps Units Serving with Marine Corps in Field. S. N. Raynor.—p. 31.  
Psychoneuroses and Their Treatment. W. O. Krohn.—p. 39.  
\*Use of Chaulmoogra Oil Derivatives in Leprosy. C. B. Van Gaasbeek.—p. 50.  
Hygienic Laboratory of Republic of Haiti. R. M. Choisser.—p. 56.  
Modeling Compound Impressions. H. E. Harvey.—p. 61.

**Use of Chaulmoogra Oil Derivatives in Leprosy.**—Thirty-seven patients in the leper colony on the island of St. Croix, Virgin Islands, were treated with the ethyl ester derivatives of the fatty acids of chaulmoogra oil. Gaasbeek and his associates gave 1 c.c. the first week intramuscularly into the buttocks; 2 c.c. for the next three weeks; 3 c.c. for the following six weeks, at which time the supply of the drug was exhausted and the treatment was discontinued until a new supply of the oil was received about five months later. The nasal smear was positive for *Bacillus leprae* in twenty-three of those who received the treatment. Under treatment the nasal smear became negative in every case. The effect on the nodules was remarkable. Although the nodules were not directly injected, they could be seen getting smaller week by week. The effect on the macules was no less striking. The duration of the disease had no effect on the disappearance of the macules under treatment. On the leprosy ulcerations the results were not so striking. The duration of the disease did not seem to have any effect on the healing of the ulcers. Healing seemed to depend rather on the duration of the ulcer and the extent of the anesthesia. In cases in which the ulcers were comparatively recent and the anesthesia slight, there was prompt healing when treatment was instituted. In cases in which the ulcers were of long standing and involved bone, and the anesthesia was total there was no change or, at the most, only slight improvement. The effect on disturbed sensation was marked. At the beginning of the treatment there was anesthesia, either slight, marked, or total, in thirty-five patients. In six patients the anesthesia cleared up entirely; in twenty there was improvement; while in the remaining nine there was no change. On the whole, more marked improvement was observed in patients having leprosy less than five years, although considerable improvement was found in those of from five to ten years' duration. Those that showed no improvement had had leprosy six, eight, thirteen, eighteen and twenty-five years, respectively. These observations have led the observers to conclude that the ethyl ester derivatives of chaulmoogra oil have a very definite place in the treatment of leprosy. It is believed that they will cure some cases, especially those of relatively short duration, and it is known that they will bring about improvement in a majority of patients to such an extent as to permit their parole. No harmful effects have been observed from its administration.

### FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Medical Journal, London

Feb. 3, 1923, 1, No. 3240

- Microbic Transmissible Autolysis. J. Bordet.—p. 175.  
\*Malignant Diseases of Breast. C. A. Morton.—p. 178.  
Cataract Extraction Followed by Symptoms Suggestive of Sympathetic Ophthalmia. F. Fergus.—p. 182.  
"Tetanism" in Meningitis. H. B. Shaw and C. D. Shapland.—p. 183.  
Diaphragmatic Hernia of Entire Stomach. J. G. Andrew.—p. 184.  
Hydatid Cysts of Liver. Associated with Gallstones and Empyema of Gallbladder and Pleura: Recovery. M. L. Ramsay and H. F. Vel'acott.—p. 184.  
Radiation of Pain in Lesions of Fallopian Tube. M. Marcus.—p. 185.  
Case of Ritter's Disease (Dermatitis Exfoliativa Neonatorum). R. McD. Cairns.—p. 186.  
Posthippocratic Schools of Medicine. R. O. Moon.—p. 187.

**Malignant Diseases of Breast.**—The records of 120 consecutive cases of ordinary glandular cancer of the breast, subjected to operation during the ten years preceding 1921, are analyzed by Morton, with reference to the proportion of cases with local recurrence. The late results as to local recurrence were traced in eighty of the 120 cases. Of the remaining forty cases, some patients died with distant metastases without local recurrence before the end of three years after the operation, others died also during this period of intercurrent disease, and in some cases the cause of death was unknown. Thirty-seven patients were free from recurrence three years or later after the operation, and forty-three had local recurrence. Of the thirty-seven, twenty-five had no recurrence five years or later after the operation. Recurrence has been most frequent in the pectoral region. There were twenty cases of supraclavicular recurrence. In no case has Morton ever encountered a recurrence in the downward direction, and he has never made a practice of any special clearance of the tissues in this direction. The special feature of the operation performed by him is the supraclavicular extension.

### Lancet, London

Feb. 3, 1923, 1, No. 5188

- \*Progressive and Malignant Endocarditis in Childhood. F. J. Poynton.—p. 215.  
\*Immediate Microscopic Diagnosis of Tumors at Time of Operation. E. H. Shaw.—p. 218.  
\*Causes of Death in Chronic Valvular Disease of Heart. J. Cowan and J. K. Rennie.—p. 223.  
\*Cardiac Rheumatism of Childhood. M. O. Raven.—p. 226.  
Anthrax Infection by Shaving Brushes. F. A. Knott.—p. 227.  
Case of Extra-Uterine Pregnancy. A. McMurray.—p. 228.  
Case of Retroperitoneal Fibroma Arising from Anterior Common Ligament. W. H. Ogilvie.—p. 228.

**Malignant Endocarditis in Childhood.**—Malignant endocarditis in childhood, Poynton says, shows the same features as in the adult, though, as a rule, it is more rapid in its course. There are fever, sweating, anemia, purpura, Osler's spots, infarctions, optic neuritis and retinal hemorrhage, drowsiness, aneurysms, diarrhea, cerebral hemorrhage or embolism, hematuria, enlargement of the spleen, cardiac bruits, and a continual excited action of the heart. Poynton has seen in a child a femoral aneurysm as large as a coconut from an embolus in that vessel. This likeness to the adult cases is most significant when the close association with acute rheumatism is seen. Poynton holds that there is a rheumatic malignant endocarditis which may arise from the simple form or be primary in origin. Further, he believes that the mysterious cases of streptococcal origin in adults are either primary cardiac rheumatism of a malignant type, or, if not actually rheumatic, more closely allied to the rheumatic infection than any other. In other words, they are due to a strain of that group. Cases are cited as proof that a study of rheumatic heart disease is probably one of the best methods available at present for throwing light upon malignant endocarditis met with not only in childhood, but also in adult life.

**Immediate Microscopic Diagnosis of Tumors.**—Shaw describes in detail his method of cutting frozen sections of fresh tissues, a procedure which he first recommended for general use in 1910 but which he originated in 1899. Two alterations were made some years ago: (1) substitution of



the ethyl chlorid spray for the old ether apparatus—by this means a piece of tissue may be frozen on any flat piece of roughened glass, metal, or even wood; and (2) diluted instead of full strength stain, which acted too quickly and gave very dense pictures.

**Causes of Death in Chronic Valvular Disease of Heart.**—In the 100 cases of valvular disease found by Cowan and Rennie to be present on postmortem examination, nineteen cases were purely acute, while eighty-one cases were, in part at any rate, chronic. In all of these cases an antemortem diagnosis had been made. In thirty-nine of the eighty-one cases of chronic valvular disease an acute or subacute endocarditis was found to be also present. Paroxysmal tachycardia was present in twenty-one cases. In one case death ensued as the result of recurring attacks of paroxysmal tachycardia. In one case death ensued in a patient who had full heart block. Of these eighty-one cases of chronic valvular disease the cause of failure was in two cases unknown. In six cases death ensued from causes quite distinct from the cardiac disease. In eleven cases cardiac failure followed the activity of factors outside the heart. Of the other sixty-two cases, in forty-nine the heart itself seemed to be the prime factor in the failure, and in thirty-nine of these an acute endocarditis was present at death. The commonest cause of cardiac failure in chronic valvular disease seems thus to be an acute reinfection of the cardiac valves. Acute endocarditis is most common in rheumatic patients, and least common in syphilitic patients. Of fifty-eight cases of acute endocarditis, nineteen purely acute and thirty-nine associated with chronic lesions, thirty-two were rheumatic and only one syphilitic. One patient had suffered from both diseases. The immediate cause of death in cases of chronic valvular disease is varied. In some a general sepsis is present, in some embolic lesions in the organs occasion death, in some the valvular fault progresses beyond the point where compensation can be effected. But in probably the majority of cases the cause of death is muscular weakness from the associated myocarditis.

**Cardiac Rheumatism of Childhood.**—The treatment followed by Raven, in the main, consisted of recumbency, fresh air, and warmth. The most severely ill patients have been kept strictly recumbent against bed rests for from eight to fourteen months: the others have been allowed to get up little by little, as the symptoms subsided, beginning at a quarter of an hour a day and working up gradually to a full day before discharge; then they have always been sent back to the hospital or physician that sent them for further observation. Treatment by drugs, useful though they undoubtedly are—particularly salicylates, digitalis, and opium in appropriate cases—is regarded only as accessory to a general management on these lines.

### Indian Medical Gazette, Calcutta

January, 1923, 58, No. 1

- Therapeutics of Antimony. R. N. Chopra.—p. 1.  
Malaria Survey of Sawantwadi State. C. Strickland.—p. 7.  
What Are the Departures from Health and Diseases Which Arise from Negligence, Ignorance and Self-Indulgence of Man? J. W. Cornwall.—p. 15.  
Use of Nonmotile Strain of Bacillus Typhosus in Agglutination Reaction. G. P. Khan.—p. 18.  
Spinal Analgesia. F. J. W. Porter.—p. 20.  
Case of Homicidal Yellow Oleander Poisoning. S. Banerjee.—p. 20.  
\*Two Cases of Death from Hemorrhage into Pericardium. R. S. Townsend.—p. 21.  
Cases of Kala-Azar. D. N. Roy.—p. 23.  
\*Case of Unusual Malpresentation. J. A. Rowland.—p. 24.

**Death from Hemorrhage into Pericardium.**—In one of the cases recorded by Townsend, there was actual rupture of the heart muscle, and in the other case, a small aneurysm in the first part of the aorta had ruptured. The rupture in the first case occurred at the point of entrance of the pulmonary artery into the right ventricle. No disease of the valves could be found, one minute patch of atheroma was present in the pulmonary artery about 1 inch from the tricuspid valves, otherwise the large vessels seemed healthy. All other organs of the body were healthy except the liver, which was enlarged and somewhat engorged.

**Unusual Fetal Malpresentation.**—Rowland relates the case of a pregnant woman whose abdomen was so large as to lead to a suspicion that the case might be one of twins. On making an examination per vaginam the head (vertex), hand and foot were found firmly impacted in the vagina, the head being between the hand and foot. It was found impossible to return any one of the presenting parts into the uterus. The possibility of interlocked twins was thought of, but no definite diagnosis could be arrived at. The head was perforated with great difficulty owing to the edematous condition of the vagina, and an arm was removed at the shoulder joint. Attempts made to bring down the leg, simultaneously pushing back the head into the uterus failed. When the head was severed from the thorax by cutting through the neck, it was possible to push the head into the uterus. A leg was pulled down and the body of a full-term child of normal size was extracted. On completion of delivery it was found that the woman had a sessile submucous fibroid tumor, the size of a large orange, situated in the upper segment of the uterus. The tumor was incompletely split in halves. Previous to this confinement the patient had had two normal deliveries.

### Irish Journal of Medical Science, Dublin

January, 1923, 5, No. 11

- Principles of Therapeutics. T. G. Moorhead.—p. 485.  
Unsatisfactory Appendicectomies. Wm. Doolin.—p. 495.  
\*Cases of Diabetes and Leukemia. J. W. Moore.—p. 507.

**Cases of Diabetes and Leukemia.**—Moore cites two cases, one of diabetes mellitus in a girl, aged 14 years, complicated in its final stages by xanthoma diabeticorum, and one of myelogenous leukemia in a boy, aged 11 years.

### Medical Journal of Australia, Sydney

Jan. 6, 1923, 1, No. 1

- Dysentery: Bacillary and Amebic. E. M. Little.—p. 1.  
Head Injuries of War. B. T. Edye.—p. 5.  
Gas Gangrene in Military and Civil Practice. K. Inglis.—p. 7.  
Ocular Syphilis. J. C. Douglas.—p. 9.  
Tonsils Considered by a General Practitioner. G. P. O'Day.—p. 13.  
\*Case of Tuberculous Meningitis. W. E. George.—p. 14.

**Acute Tuberculous Meningitis.**—George relates the case of a boy, aged 12, who became suddenly ill, the chief symptom being headache. This and other symptoms led to a provisional diagnosis of enteric fever. The Widal test was negative. No bacilli were recovered from the feces, urine, or blood. On the thirteenth day, the patient had a sudden rigor. Four days later the leukocytes numbered 20,000, 90 per cent. being polymorphonuclear cells. He was becoming more drowsy. Within a week the diagnosis of meningitis was evident. The patient died about three weeks after the onset of his illness. At the postmortem examination, an old adhesive pleurisy of the whole of the upper lobe of the right lung was discovered; on section the same lobe was found to contain numerous caseous tuberculous nodules. Both cerebral hemispheres were greatly congested and the meninges in the vicinity of the pons varolii were hyperemic and swollen by a great deal of subjacent inflammatory exudate. This exudate was clear and showed increased lymphocytes; no organisms were isolated on culture. The case was interesting in view of the differential diagnosis and the persistent leukocytosis with polymorphonuclear cell increase in an acute condition, evidently tuberculous from the outset.

### Quarterly Journal of Medicine, Oxford

January, 1923, No. 62

- \*Study of Orthostatic Albuminuria by Means of Graphic Records. J. W. Russell.—p. 73.  
\*Fractional Test Meal in Study of Disorders of Gastro-Intestinal Tract. (Analysis of 174 Verified Cases). D. Hunter.—p. 95.  
Muscular Exercise, Lactic Acid, and the Supply and Utilization of Oxygen. A. V. Hill and H. Lupton.—p. 135.

**Study of Orthostatic Albuminuria.**—There appears to be a group of mild kidney lesions which, apart from subacute exacerbations, reveal themselves chiefly by the inability of the kidney to bear, without leakage of albumin, the circulatory disturbance brought about by the upright position. Russell believes that the orthostatic albuminurias belong to the same group, though at its mildest extremity. In none of the seven cases examined by him has the bed urine been always com-



pletely free from albumin. The later day cessation of the albuminuria, in the few cases in which it was observed, has also been variable in its occurrence. The cessation was not due to adaptation to the upright position acquired in the course of the day, but its explanation has yet to be found. It was evident, however, that there is a close association between the quantity of urine secreted and the amount of albumin contained. In general, the two curves are inverse in direction, but the albumin excursions are probably exaggerated by the assumption of the upright position. Profuse diuresis generally puts an end to the excretion of albumin, even in the standing position. When the urine is persistently and abnormally scanty, the two curves cease to show any relation to one another. In most of the cases examined there was a marked delay in the secretory response to the intake of a fixed quantity of fluid. In the more obviously nephritic cases, the albumin response to the upright position was not immediate, except during a subacute exacerbation. Russell noted that in the more definitely "orthostatic" cases, standing at once and invariably gave rise to albuminuria, except during a period of diuresis.

**Fractional Test Meal in Study of Disorders of Gastro-Intestinal Tract.**—In the course of an investigation extending over two years, the fractional method of gastric analysis was applied by Hunter to 270 patients. In 174 of these cases the diagnosis was considered proved. In fifteen cases of chronic ulcer of the duodenum, the fractional test meal findings were remarkably constant. Eighty-eight per cent. of cases showed curves considerably above the limits of normal. In every uncomplicated case there was copious secretion of transparent fluid and rapid emptying. In fifteen cases of chronic ulcer of the pyloric end of the stomach, the findings were less constant; 67 per cent. of cases showed curves above the limits of normal. The typical curve was one with a high resting fluid, a gradual climb to a high level, and a slight terminal drop. Emptying was delayed. In twenty cases of chronic ulcer of the body of the stomach there was no constant finding. In 50 per cent. of cases the curve remained within the limits of normal, while in 35 per cent. it rose above these limits. An observation of some importance is that in 38 per cent. of cases, where the ulcer was situated posteriorly, macroscopic blood appeared. In cases of hour-glass constriction of the stomach, and in a small group of cases with ulcer on the anterior aspect of the body of the stomach, the findings were similar. There was complete achlorhydria with rapid emptying, but there was an excess of opalescent fluid and little mucus. Forty-three cases were examined after gastrojejunostomy. All showed deep bile staining of more than half the specimen, and in 90 per cent. of cases bile was found in the fasting gastric fluid. In 70 per cent. of cases the meal disappeared more rapidly than before operation, the average time of emptying being one hour and fifteen minutes. In two cases of gastrojejunal ulcer the acid curves were above the limits of normal. Of fifteen cases of carcinoma of the stomach investigated, in 67 per cent. the curves showed complete achlorhydria. The specimens were usually copious and contained dirty mucus. Macroscopic blood appeared in 27 per cent. of cases of which half were operable. Nine cases of chronic appendicitis were investigated. In 78 per cent. of these the curves were within the limits of normal. Seven cases of gallstones were investigated, some associated with acute cholecystitis, and some with chronic cholecystitis. In 83 per cent. of cases the curves fell within the normal limits. Eight cases were investigated in which the common bile-duct was obstructed. Very high acid curves, either of the plateau type or of the climbing type, appeared in 88 per cent. of cases. In a great variety of conditions there occurred a complete achlorhydria, and the specimens were scanty, difficult to withdraw, and mixed with mucus. Such findings were invariably associated with rapid emptying. In the majority of cases examined of visceroptosis, pernicious anemia, and cirrhosis of the liver these findings were present. In cases of myeloid leukemia, acne rosacea, and lupus erythematosus there was a low hypoachlorhydria. A prolonged secondary anemia, such as may be produced by repeated small hemorrhages from a duodenal ulcer, may result in achlorhydria. Further, this may remain after return of the blood condition to normal.

## Archives Franco-Belges de Chirurgie, Brussels

September-December, 1922, 25, No. 12

- \*Goiter with Metastasis. E. Delannoy and A. Dhalluin.—p. 1047.
- \*Juvenile Deforming Osteochondritis. Vignard.—p. 1088.
- \*Palpation of Hip Joint Through Rectum. J. Cottalorda.—p. 1092.
- \*Regional Anesthesia of Neck and Arm. Brunin and Vandeput.—p. 1098.

**Simple Goiter with Metastasis.**—Delannoy and Dhalluin describe a case with photomicrograms, and compare it with 71 cases from the literature. Their conclusion is that these goiters with metastasis are always malignant, although the primary cancer in the thyroid may be latent. The data presented emphasize the necessity for examining the thyroid for unsuspected malignant disease whenever a neoplasm is found in a bone. In the cases tabulated, the metastasis was in a bone in all but a few cases, with or without metastasis elsewhere. In one man, 65 years of age, the metastasis was in the eyebrow. In another, aged 63, with a large goiter of four years' standing, there were metastases in liver, kidneys, pleura and lungs. The bones involved were mostly in the upper part of the body, but in some cases the metastasis was in the pelvis or femur. In 30 cases the spine and in 19 the skull were involved. In 17 cases death occurred in less than a year after the metastasis had been noted; in 15 within five years, of the 39 cases in which the outcome was recorded. In Helbing's case the man, aged 31, survived for seventeen years; the metastases were in sternum, femur and spine. In Wilkens' case the man, aged 72, with metastases in skull and lumbar spine, lived for seven years.

**Juvenile Deforming Osteochondritis of the Hip Joint.**—Vignard describes the findings in two cases in which he operated. The joint became totally stiff thereafter in the boy, 14 years old; but complete function was regained in the girl, aged 9. In this case, nothing abnormal was found when the cartilage was divided.

**Palpation of Hip Joint Through the Rectum.**—Cottalorda refers to cases of fracture of the acetabulum, of which he has compiled ninety-nine cases, in addition to ten from his own experience. He experimented further on the cadaver. All this experience testifies that palpation through the rectum does not reveal conditions in the hip joint unless the finger is exceptionally long, the patient thin and docile or deeply anesthetized, and the acetabulum much out of shape.

**Regional Anesthesia for Operations on Neck and Arm.**—This is the concluding portion of an exhaustive study of ways and means for blocking the nerves to allow operations on different areas of the neck, arm and hand.

## Archives des Maladies du Cœur, Paris

December, 1922, 15, No. 12

- \*Cardiac Disturbance from Arteriovenous Aneurysm. I. Nanu et al.—p. 829.
- \*Oxydases and Peroxydases of the Blood. J. Sabrazès.—p. 841.
- Auricular Insufficiency in Chronic Lung Disease. Lutembacher.—p. 849.

**Cardiac Disturbances Following Arteriovenous Aneurysm.**—Nanu, Alexandrescu-Dersca and Lazeanu describe two cases of arteriovenous aneurysm of the leg in which operation was followed by recovery from cardiac disturbances. Even the dilatation of the heart was well influenced.

**Oxydases and Peroxydases of the Blood.**—Sabrazès reviews the question of oxydases and peroxydases of the blood cells. Monocytes with an oval nucleus do not contain peroxydase; polymorphonuclears give the reaction, although it is not very strong. Eosinophils contain more peroxydases than the neutrophils. It is interesting to note that in the pus of acute gonorrhea, those parts of neutrophils which contain gonococci, have lost the peroxydase. The mast cells from the peritoneal cavity of white rats, the megakaryocytes and blood platelets, did not give the reaction.

## Archives Médicales Belges, Liège

December, 1922, 75, No. 12

- \*Neurasthenia. F. Dauwe.—p. 1169.
- \*Protein Therapy in Genito-Urinary Diseases. G. d'Hooghe.—p. 1195.
- \*Eugenics. Govaerts.—p. 1201.

**Neurasthenia.**—Dauwe makes a detailed study of the physical symptoms and mental condition in neurasthenia.



**Protein Therapy in Genito-Urinary Diseases.**—D'Hooghe publishes cases of chronic urethritis, acute epididymitis, gonorrheal arthritis and gonorrheal conjunctivitis in which protein therapy was successful. It was also applied in skin and syphilitic affections, often with favorable results.

**Eugenics.**—Govaerts concludes that eugenics belongs in the domain of social medicine. It consists principally in the knowledge of heredity and the action of social institutions on the transformation of the race. It teaches us that if we do not combat hereditary causes, all improvements brought into the life and work of a generation will be only temporary, and they will have to begin all over again in the next generation. It shows the necessity of taking into consideration the child of tomorrow as well as the man of today.

### Bulletin de l'Académie de Médecine, Paris

Jan. 2, 1923, 89, No. 1

- The Past and Future of Pharmacologic Chemistry. Béhal.—p. 2.  
\*Diabetic Acidosis. A. Desgrez et al.—p. 25.  
\*Constitutional Irritability and Respiratory Spasm. E. de Massary and J. Walser.—p. 33.  
\*Retraction of Palmar Aponeurosis. Peugniez and Joly.—p. 35.  
\*Backward Lowering of the Root of the Tongue Causing Respiratory Disturbances. P. Robin.—p. 37.

**Diabetic Acidosis: Action of Levulose.**—Desgrez, Bierry and Rathery emphasize the influence of different rates of absorption on the assimilation of carbohydrates. Some diabetics tolerate levulose distinctly better than glucose. They maintain, contrary to Labbé, that the acidosis due to lack of carbohydrates is essentially the same as the acidosis of diabetics. The difference of opinions is due to confounding the acidosis of complete fasting with the acidosis from absence of carbohydrates with a large supply of fat. The fat, in an auto-experiment of Forssner, led in three days to a daily excretion of 42.80 gm. of acetone bodies. The symptoms of intoxication forced the scientist to stop the experiment, because he did not intend to commit suicide.

**Emotional Instability and Respiratory Spasm.**—De Massary and Walser discuss almost monosymptomatic forms of what they call constitutional hyperemotivity, *émotivité anxieuse*. The cardinal symptom may be respiratory, circulatory or digestive. The respiratory affection merits consideration as a real morbid entity. It consists in a sensation of oppression, feeling of difficulty in breathing, and characteristic uneasiness, which may increase to actual distress. By distracting the patient's attention it is possible to diminish the severity of the disturbance. The influence of the pneumogastric nerve is the evident cause, and other manifestations of vagotonia are found constantly (oculocardiac reflex), or frequently in these cases (hyperacidity, sweats, respiratory arrhythmia, hypotension). Atropin has a curative action on the condition.

**Retraction of Palmar Aponeurosis Cured by Penetrating Roentgenotherapy.**—Peugniez and Joly report the case of a patient with retraction of the palmar aponeurosis who recovered after roentgen-ray treatment.

**Backward Fall of the Root of the Tongue as Cause of Respiratory Disturbances.**—Robin gives a description and pictures of an overlooked cause of respiratory disturbances in the upper respiratory passages. The seat is in the oral pharynx, and the obstruction is due to a backward lowering of the root of the tongue. To overcome it, the patient has to open the mouth. The angles of the lower jaw are nearer together than normal; the chin is receding. The respiratory difficulty ceases if the patient is instructed to protrude his lower jaw so that the lower teeth come in front of the upper ones. An apparatus which causes such propulsion of the chin is the adequate treatment of the condition.

### Bulletin Médical, Paris

Jan. 13, 1923, 37, No. 2

- \*How Should Hodgkin's Disease Be Classified? Gastinel et al.—p. 39.  
\*Subcapsular Thyroidectomy in Exophthalmic Goiter. T. Asteriades.—p. 45.  
Innervation and Chemical Excitants of Tissues. Guillaume.—p. 46.

**How Should Hodgkin's Disease Be Classified?**—Gastinel, Reilly and Potez ask this question, and state that Hodgkin's disease from a nosologic standpoint is a transition between

and association of tumors and inflammatory lesions. From an anatomic standpoint, it is a morbid entity, and should be called "malignant lymphogranuloma."

**Surgical Treatment of Exophthalmic Goiter by Subcapsular Thyroidectomy.**—Asteriades describes and extols Siraud's method of subcapsular thyroidectomy under local anesthesia. It is simple, without danger, rapid and sure. He reports fifty-seven "brilliant successes" with this technic in fifty-seven cases.

### Encéphale, Paris

December, 1922, 17, No. 10

- Cervical Neurofibroma. E. Flatau and B. Sawicki.—p. 617.  
Neurosyphilis. C. I. Urechia and D. N. Elekes.—p. 627.  
\*Psychic Origin in Organic Affections. W. H. B. Stoddart.—p. 638.  
Galvanic Nystagmus. J. Molinié.—p. 641.  
Epidemic Encephalitis with Pithiatism. A. Gilles.—p. 644.  
True Melancholia and Periodic Asthenia. R. Benon.—p. 646.

**Psychic Origin of Certain Organic Affections.**—Stoddart draws attention to the fact that many apparently organic affections may be due to psychic causes which can be discovered and treated by psychanalysis.

### Journal de Radiologie, Paris

December, 1922, 6, No. 12

- Electrical Methods in Diagnosis and Prognosis of Peripheral Paralysis. G. Bourguignon.—p. 565.  
Electrodes for Surgical Diathermy. H. Bordier.—p. 595.

### Revue Franç. de Gynécologie et d'Obstét., Paris

December, 1922, 17, No. 12

- \*Tubal-Abdominal Pregnancy. E. Zarate et al.—p. 625.  
\*Thirty-Six Pregnancies. L. Laurentie.—p. 645.  
\*Typhoid Bacilli in Fetal Blood. J. Vignoli.—p. 646.

**Extra-Uterine Pregnancy at Term.**—In the case reported by Zarate, Rojas and Widakovich the fetus had continued to develop after unnoticed rupture of the gravid tube. The uterus enlarged correspondingly, with symptoms of labor at term. The child was extracted and seems to be developing normally at the age of 6 months. The neck is short and the face too large for the head, but there is no pronounced deformity. It was the third pregnancy; the second had terminated in an abortion. In five cases summarized from the records, two children had developed normally to the fourth and ninth year. Another child is mentally backward; the others died soon after birth; one of the mothers died. If the fetus in an extra-uterine pregnancy survives to the fifth month, it generally goes to term. When diagnosed in the first half of pregnancy, operative treatment at once is imperative unless the woman objects. The exaggerated weight of the lower abdomen, fetal movements felt close to the skin, and the fact that they are generally painful, aid in the diagnosis. Internal examination is liable to entail abortion or premature delivery. The diagnosis during the first months is based on the diffuse abdominal pains and the symptoms of rupture of the tube, with or without external hemorrhage. The false labor is liable to injure the fetus; it should be extracted at once. The authors were able to extract the sac, with the placenta still adherent, and the first 5 cm. of the tube, and the ovary. There was scarcely any hemorrhage. The child weighed 2,860 gm.

**Thirty-Six Pregnancies.**—Laurentie reports a Syrian woman, now 85, who has borne twenty-four healthy children and has had twelve abortions. She did not nurse the children. She is exceptionally well preserved for her age. Her mother had twenty-three children.

**Typhoid Bacilli in Fetal Blood.**—Typhoid bacilli were cultivated from the blood of the umbilical cord of the premature child of a woman with typhoid. Serologic tests were negative with both mother and child.

Jan. 25, 1923, 18, No. 2

- \*Low Cesarean Section. P. Gaifami.—p. 33.  
\*Sedimentation of the Blood in the Pregnant. H. Vignes and P. Hermet.—p. 42.  
\*Flushing the Uterus in Puerperal Infections. L. M. Pierra.—p. 44.

**Low Cesarean Section.**—Gaifami extols the advantages of transperitoneal cesarean section on the lower segment of the



uterus, as he observed them in the fifty cases he describes, including several with beginning infection. The pregnant uterus at term was removed in one case two years later; no trace could be found of the incision without the microscope. Conditions in the lower segment are more favorable for healing. In eleven cases the cesarean section was repeated, and the cicatrix was solid in all even when expectant treatment had been pushed to the extreme.

**Sedimentation of Erythrocytes.**—Vignes and Hermet found that sedimentation was accelerated in the blood of women advanced in pregnancy, but not early in pregnancy. They found it accelerated also in animals whose blood was being drawn repeatedly for antisera.

**Washing Out the Uterus in Treatment of Puerperal Infection.**—Pierra refers to the revival of continuous irrigation as a means of treating infection limited to the cavity in question. The conditions in the uterus are much like those in a war wound, and Andérodias has reported 133 cured of 148 cases of puerperal infection. In 3 of the cases in which it failed, death was explained by kidney or lung disease; Perazzi's 6 patients all recovered, also Petit's 2, including one complicated with a gangrenous fibroma, and Michon's 12 of febrile abortion. In some of this last group curcetting had failed to relieve. Pierra found it equally effective in a case of gravely infected criminal abortion. The fluid used totaled from 300 to 600 c.c. in the twenty-four hours. Petit used four to eight tubes, injecting 10 c.c. through each, every two hours, to a total of 500 to 1,000 in the twenty-four hours. Some used surgical solution of chlorinated soda, others preferred a milder disinfectant. Pierra and Michon used and prefer a 1:250,000 solution of silver nitrate (10 drops of a 1 per cent. solution to the liter of water). The weak solution stimulates repair and destroys micro-organisms without injuring the tissues.

### Schweizer Archiv für Neurol. u. Psychiatrie, Zurich

1922, 11, No. 2

- \*Rigidity in a Torsion Spasm After Encephalitis. R. Mourgue.—p. 163.
- Parallelism of Psychic and Motor Activity. H. Steck.—p. 208.
- Treatment of Epilepsy. V. Demole.—p. 215.
- Tubercle in Tegmentum of the Pons. H. W. Stenvers.—p. 221.
- Cerebral Syphilis and Psychoses. L. Redalié.—p. 230.
- \*Pituitary Gland in Cerebral Lesions. V. Desogus.—p. 244.
- \*Dysthyroidism, Anaphylaxis and Epilepsy. V. M. Buscaino.—p. 261.

**Decerebrate Rigidity in a Torsion Spasm After Encephalitis.**—Mourgue gives a clinical study of a case of a typical torsion spasm after epidemic encephalitis, and discusses the literature, especially with regard to the action of the liver in Wilson's disease. The patient had an alimentary levulosuria. Mourgue considers the extrapyramidal syndromes as affections of the general metabolism of proteins.

**Pituitary Gland in Cerebral Lesions.**—Desogus investigated the influence of different cerebral lesions on the pituitary gland in fifty dogs. He destroyed in some of them both occipital lobes, in others the parietal or frontal lobes. He found hyperemia and hypersecretion of colloid and a strong eosinophilia from twenty to thirty days after the operations. Between thirty and sixty days a regression takes place which reaches its maximum during the next month. After a hundred days, the pituitary becomes normal.

**Dysthyroidism, Anaphylaxis and Epilepsy.**—Buscaino found in thyroids of epileptics and of persons suffering from epileptiform convulsions, crystals which he considers as abnormal proteins. Popovici found that Abderhalden's reaction is much more frequent and strong if the thyroid from epileptics is used. He considers epilepsy as an anaphylactic crisis due to these proteins, and proposes extirpation of the thyroid and subsequent substitution by tablets in the systematic treatment of epilepsy.

### Archivio Italiano di Chirurgia, Bologna

December, 1922, 6, No. 4

- \*Mixed Tumor of the Orbit. G. M. Fasiani.—p. 333.
- \*Operations on Hour-Glass Stomach. C. Gamberini.—p. 347.
- \*Pseudo-Hydronephrosis. G. Razzaboni.—p. 365.
- \*Absorption by the Tunica Vaginalis. L. Torraca.—p. 404.
- \*Treatment of Exstrophy of the Bladder. U. Camera.—p. 421.

**Mixed Tumor of the Orbit.**—Fasiani resected temporarily the external wall of the orbit, and this allowed easy enucleation of the tumor. It had been developing for five years in the right eye of a man in the thirties. It was as large as a pigeon's egg, and was encapsulated. After its removal the eyeball returned to its normal place, with vision 1/4.

**Hour-Glass Stomach.**—Gamberini operated for organic hour-glass stomach in eleven of his 150 operations on this organ. In some cases he made a gastro-enterostomy in each half of the stomach. In other cases he made a very long opening, extending at each end beyond the narrow portion of the stomach. In other cases he resected and sutured the duodenum to the stump of the stomach, proximal from the narrow portion. The various cases are illustrated.

**False Hydronephrosis.**—Razzaboni applies this term to accumulation of urine in a cystic pouch, independent of the kidney parenchyma. He produced typical lesions of the kind in twenty-five rabbits and dogs by hampering the circulation, as he shows with photomicrograms. The kidney suffers, and actual hydronephrosis or atrophy results unless the cystic accumulation in the perirenal or pararenal tissues is removed in time. This kidney may then recuperate completely. There is no need to resect the kidney with pseudohydronephrosis unless irreparable lesions are already present.

**Absorption by the Tunica Vaginalis.**—Torraca injected a stain into the cavity of the tunica vaginalis in seven dogs, and the stain appeared in the urine in from fourteen to twenty-three minutes. In eight men with hydrocele, injected in the same way with the stain, it did not appear in the urine at all in two, and in the others it did not appear until after an interval of from one to nearly seven hours, and most of the stain lingered in the tunica for days.

**Exstrophy of the Bladder.**—Camera describes a modification of the Segond autoplasmic method which he applied in a boy, aged 5, with excellent outcome. He utilized the scrotum instead of the prepuce to cover the defect left by the Segond technic. The testicles in cases of exstrophy are usually ectopic, and the scrotum provides a stout and well nourished flap. This method might be applied to small boys even when a radical operation is planned later to do away with the urinal.

### Pediatria, Naples

Jan. 1, 1923, 31, No. 1

- \*Scarlet Fever. G. Di Cristina.—p. 1.
- \*Treatment of Typhoid and Malta Fever. G. de Finis.—p. 11.
- \*Leukocyte Extracts and Gärtner's Bacillus. A. Ronchi.—p. 24.
- Encephalitis and Chorea. S. de Stefano.—p. 38.

**Scarlet Fever.**—Di Cristina claims that specific germs from blood and bone marrow from patients with scarlet fever can be constantly found in anaerobic cultures containing human corpuscles. The development is optimal after fifteen days' incubation. The added blood is hemolyzing and a precipitate forms which makes examination by the hanging drop method impossible. Staining with Löffler's or Giemsa's stain reveals a few diplococci of the size of *Micrococcus catarrhalis*. Young rabbits injected with this material cease after twelve days to increase in weight, and either die slowly from cachexia or do not recover for a long time, although the body temperature hardly increases, and no leukocytosis is present. The anatomic changes consist in intense hyperemia of all organs, a reduction of the volume of the spleen (rarely an enlargement), and parenchymatous degeneration of the kidneys. Recent cultures seem to be more fatal than old ones. Direct inoculations of blood from scarlet fever patients give less distinct results. Serologic tests were not satisfactory. Di Cristina mentions his prophylactic experiment with a preparation of scarlet fever scales subjected to the action of convalescents' serum.

**Treatment of Typhoid and Malta Fever with Vaccines.**—De Finis used Di Cristina's and Caronia's vaccines in ninety cases of typhoid, thirty-five cases of paratyphoid and fifty-five cases of Malta fever. Only one patient, with the paratyphoid bacillus, died. The other patients (mostly children) recovered. In many instances the recovery was by crisis after a single injection; other patients required from 3 to 4 injections.



tions at two days' interval. Intramuscular injections gave the same results as intravenous.

**Action of Leukocyte Extracts on Gärtner's Bacillus.**—Ronchi's experiments on guinea-pigs demonstrate the preventive and curative effects of autolysates of leukocytes on the usually very severe infection with Gärtner's bacillus.

### Anales de la Facultad de Medicina, Lima

September-October, 1922, 5, No. 3

- Inaugural Lecture of Surgical Course. G. Gastañeta.—p. 177.  
\*Epidemic Encephalitis. M. Gonzalez Olachea.—p. 182.  
\*Parasitic Disease of Lungs in Peru. A. Corvetto.—p. 196.  
Inaugural Lecture of Deontology Course. G. Fernández Dávila.—p. 205.  
Inaugural Lecture of Surgical Course. P. S. Mimbela.—p. 213.  
Etiology of Frenasthenia. L. Ciampi and H. Valdizán.—p. 224.

**Epidemic Encephalitis.**—The sudden onset of intense frontal and orbital headache was the first symptom of the disease. It ran its fatal course in less than a month. It was of the choreo-athetoid type, and there was pronounced softening of the thalamostriatal region of the brain.

**Parasitic Pulmonary Diseases in Peru.**—Corvetto emphasizes the clinical resemblance to pulmonary tuberculosis of hydatid cyst in the lung, paragonimiasis and bronchopulmonary spirochetosis. In every tuberculosis suspect in tropical countries, search should be made for these parasites. His records include twelve cases of pulmonary echinococcosis and six cases of paragonimiasis in Peru. In the latter disease, besides the imminent danger of fulminating hemoptysis, there is danger of embolism from the ova in the arteries. As this parasite requires another host to complete its cycle, it dies in time and is expelled; the patient thus spontaneously recovers. No treatment to date has proved efficacious against the paragonimus, except possibly antimony tartrate which offers some hope of relief. Individual and international prophylaxis is imperative, and the governments of the countries exposed to oriental immigration should be on the alert. Individual prophylaxis is simple: No shellfish or crustacean should be eaten unless thoroughly cooked. To eat them raw is to invite this disease. One of Corvetto's patients was well-to-do, but most of those affected have been laborers in the fields who eat raw crustaceans from the rivers. Only two cases of the Castellani bronchial spirochetosis have been known in Peru to date. One was acute and the other chronic. As this disease is extremely contagious, isolation is necessary until the sputum is free from the spirochetes. This not only wards off contagion of others but protects the patient against superimposed infection to which he is exceptionally predisposed at this time. Concluding his article, which was read at the recent Latin American Congress, Corvetto urged a resolution calling for special study by the public authorities of the countries of America of prophylaxis of these three parasitic pulmonary diseases.

### Revista Española de Medicina y Cirugía, Barcelona

December, 1922, 5, No. 54

- \*Typhoid in the Army. F. Soler y Garde.—p. 687.  
Serologic Diagnosis of General Paresis. Berlamino Rodríguez Arias.—p. 710.  
Dietetic Therapeutics. A. Arteaga Pereira.—p. 713. Conc'n.

**Typhoid in the Spanish Army.**—This is a critical study by an army medical officer of antityphoid vaccination in Spain and elsewhere. Soler insists that deaths from typhoid are the direct moral responsibility of those in authority, as vaccination has proved so harmless and effectual.

### Semana Médica, Buenos Aires

Jan. 11, 1923, 1, No. 2

- \*Hemorrhagic Disease of the Uterus. C. A. Castaño.—p. 45.  
\*Menstrual Hemoptysis. J. Destéfano.—p. 52.  
\*Elements in Intradermal Tuberculin Test. A. Bergman.—p. 53.  
Vaccine Therapy of Chronic Urethritis. E. Castaño.—p. 59.  
Suggestion as Factor in Crime. III. J. C. Belbey.—p. 61.  
Emergency Colectomy. E. Villagra Muro.—p. 78.  
Infant Mortality in Santa Fe. E. Martínez Zuviría.—p. 82.  
Diet for the Insane. F. Gorriti.—p. 88.  
Dosage of Sodium Cacodylate. M. Ruiz Maya.—p. 94.

**Hemorrhagic Uterine Disease.**—Castaño disavows his heading "Hemorrhagic Metropathies" by presenting evidence that

the disturbance is in the ovary. The uterus is merely the outlet, and it shows only hyperplasia of the endometrium such as occurs physiologically in the premenstrual cycle. Treatment should be by organotherapy and radiotherapy. He has been successful with roentgen-ray treatment in virgins and in the profuse hemorrhages near the menopause. Under other conditions, he prefers radium, and reports 100 per cent. recoveries.

**Menstrual Hemoptysis.**—Destéfano comments on the interplay of the endocrine organs in the physiology of menstruation, and relates that it can be influenced to ward off menstrual hemoptysis. This is in reality a premenstrual phenomenon, and he combats it systematically by intravenous injection of pituitary extract in the tuberculous inclined to hemoptysis. He begins it each month about ten days before the period, and repeats on alternate days till the onset of menstruation. The hemoptysis never returned in women thus treated.

**Intradermal Tests for Tuberculosis.**—Bergman tested thirty-six patients with intradermal injection of goat or beef serum, egg white or other alien protein, injecting it with or without admixture of tuberculin. The findings testify anew to the specificity of the tuberculin tests.

Jan. 18, 1923, 1, No. 3

- \*Drainage of Edema. J. Destéfano.—p. 101.  
\*Open-Air Schools. T. A. Tonina.—p. 103.  
Hallucinations of Moving-Picture Type. F. Gorriti.—p. 110.  
\*Endocrine Basis of Ear, Nose and Throat Affections. J. de la Cruz Correa and R. Becco.—p. 112.  
Examination of the Kidney in Edema. C. H. Niseggi.—p. 117.  
Suggestion in Crime. J. C. Belbey.—p. 122.  
Tumor in Left Occipital Lobe. Juan M. Obarrio.—p. 128.  
\*Interpretation of Electrocardiogram. T. Lewis.—p. 133.  
\*Medical Impressions of America. D. Speroni.—p. 142.

**Mechanical Treatment of Edema.**—Destéfano indicates the dangers from resorption of dropsical fluid, overloading the heart and flooding the system with dislodged toxins which aggravate the condition of the already damaged kidneys. He had a case in 1914 in which resorption induced a kind of serous apoplexy which proved fatal. On the other hand, direct drainage of the fluid by platinum needles introduced into the skin has proved effective and harmless in his experience with 100 cases. The needles are 4 cm. long and twice the caliber of the needle used for injection of grey oil. He inserts one on each side of each leg, just above the malleoli. The head of the bed is raised by 20 cm. to aid the flow with gravity. The needles are left in place as long as needed; in some cases up to four or five days. In one case 27 liters thus drained away in forty-eight hours. Gauze is wrapped around the outer end of the needle to separate it from the skin. Infection of the puncture holes occurred in only one instance. In this case an inflammatory reaction around one hole caused brief fever that subsided within twenty-four hours.

**Open-Air Schools.**—Tonina reviews the experiences at the four open-air schools at Buenos Aires organized since 1909. This class of schools is designed for weakly children, and the task of the medical school inspector, he asserts, should be far more comprehensive than in other schools. He should be empowered to treat the debility and in some cases to treat the underlying chronic malaria, anemia, syphilis or endocrine derangement.

**The Endocrine Factor in Disease of the Ear, Nose and Throat.**—Thirteen cases are described in which appropriate organotherapy aided in the cure of otorhinolaryngologic affections which had proved rebellious to all other measures. In some of the cases the return of tonsillitis with the menses was arrested by ovarian treatment. In other cases, organotherapy usefully supplemented operative measures or medication to reduce congestion. One man with spasmodic rhinitis, false asthma and ethmoiditis, improved materially under peptone and organotherapy. Measures to correct menstrual anomalies in some of the cases seemed to influence favorably the deafness or recurring throat disease.

**Interpretations of the Initial Phases of the Electrocardiogram.**—This is a translation in full of Sir Thomas Lewis'



article published in the *Archives of Internal Medicine*, September, 1922, p. 269.

**Impressions of America.**—In his visit to Washington, D. C., Prof. David Speroni was impressed with the insignificance of the buildings housing the medical schools in comparison to the magnificence of the public buildings. At Baltimore, the Pathology Institute attracted his attention most, and especially its arrangement of separate halls for the pathologic findings of different diseases. He dismisses the medical clinics and laboratories as not calling for special mention, saying they are no better than those of the Rawson Hospital at Buenos Aires. He addressed the students at Washington, describing the Open-Door colony for the insane near Buenos Aires, which has been called by outsiders the best institution of its kind in the world. Speroni spoke in Spanish, a Porto Rico student giving a running translation.

### Deutsche Zeitschrift für Chirurgie, Leipzig

November, 1922, 173, No. 1-3

- \*Suppurative Pericarditis. A. Hilse.—p. 1.
- Etiology of Muscular Torticollis. O. Heinemann.—p. 15.
- \*Hypernephroma. E. Muscholl.—p. 22.
- \*"Sexual Operations." W. Haubenreisser.—p. 31.
- \*Subcutaneous Extravasation of Lymph. R. Bonn.—p. 53.
- \*Osteomalacia with Epilepsy. A. Brenner.—p. 66.
- \*Luxation of Hip Joint in Adults. J. Fränkel.—p. 84.
- \*Hemophilia. K. H. Bauer.—p. 109.
- Lymphogranulomatosis with Infiltrative Growth. H. Meyeringh.—p. 185.
- Actinomycoma in Omentum. F. Matz.—p. 217.

**Suppurative Pericarditis.**—Hilse reports two cases in which there was adhesion between the heart and the pericardium. One of the young men died after incision of the pericardium by Ollier's method. The other recovered after pericardiotomy by Rehn's method. About 1 liter of pus was thus released. The anterior surface of the right ventricle was adherent to the pericardium. A drainage tube was introduced over the vena cava, one on the right and one on the left side, and the incision was left open. By the next day all the symptoms had disappeared except the edema of the legs. Continuous arrhythmia soon developed, and there is still retraction of the chest wall and diaphragm with the pulse beat. Six weeks later walks of 10 km. caused no disturbance. The puncture can be made below the fifth rib. From the left margin of the sternum to the left nipple is the zone in which there is no danger of piercing the heart or lung with a cautious puncture. Hilse declares that infection of pleura or lung during the procedure is more serious than running the needle into the heart muscle. In both his cases there was pyocyanus infection of the wound. The advantage of rinsing with saline during the operation and in changing the dressings was manifest. It did not seem to have any appreciable influence on the heart action. Several clots of fibrin were thus washed out which otherwise might have obstructed the tubes and entailed adhesions in the pericardium. The drainage tubes must not be removed too early; he noted retention of pus as late as the twenty-third day.

**Hypernephroma.**—The large Grawitz tumor in the woman, aged 30, had no connection with the kidneys or suprarenals. It was growing from the posterior abdominal wall, between the left kidney and the spine, and it was adherent to the pancreas. Recovery was prompt after its removal.

**Sex Gland Operations.**—Haubenreisser analyzes the results to date of transplantation of testicles, roentgen irradiation of the testicles, and the two Steinach methods of ligating the vas deferens. He cites seventy articles reporting experiences in these three lines of sex gland operations, and reports ten cases from Payr's service, and four cases given only roentgen-ray treatment. Not the slightest influence from the irradiation could be detected, and only one of the patients presented any improvement. This was after transplantation of testicle tissue. This seems to be the only method which offers results, and this only after late castration. The transient effect from the Steinach ligation is due mainly to absorption of hormones from stasis of the testicle secretion, aided by autosuggestion.

**Traumatic Extravasation of Lymph.**—Bonn reports four recent cases of what has been called traumatic loosening and separation of the skin. Puncture and a compressing bandage may cure in cases of small extent. Otherwise he advises

ample incision with swabbing, painting the walls of the cyst-like cavity with tincture of iodine, and draining. The walls of the cavity bleed more or less as this is done, and thus the tissues get a more nourishing fluid than the lymph.

**Osteomalacia with Epilepsy.**—The epilepsy first became manifest at the age of 25, and osteomalacia developed four years later during pregnancy. The clinical picture was that of puerperal osteomalacia, but the course and the tenderness of the skull resembled the osteomalacia from a deficient diet. There was a history of rachitis and convulsions in childhood, and of food privation in recent years. The condition materially improved under systematic phosphorus and cod liver oil treatment (phosphorus 0.01 gm.; cod liver oil, 100 gm. A teaspoonful three times a day, to a total of 0.05 gm. phosphorus). Calcium and nourishing food were given at the same time. In two months the woman was able to get up, after having been bedridden for six months. The epileptic seizures have become milder and the intervals longer. Epinephrin was not borne well, and had to be abandoned. The woman's two children have rickets, and one also has spasmophilia.

**Luxation of the Hip Joint in Adults.**—Fränkel refers to unilateral congenital luxation, and discusses the hindrance to reduction which may be offered by the iliopsoas muscle. Severing this muscle allowed reduction without further measures in three of the nine cases described.

**Inheritance and Constitution in Hemophilia.**—Bauer devotes seventy-six pages to an exhaustive study of 653 hemophilic families, with an average of 5.2 children per family. He explains that science has passed beyond the era of anatomy, of cellular pathology, and is now entering the era of function and energy, with the gene, the invisible rudiment, the transmitted germ of a character, instead of the cell, as the new and final unit for analysis. It is at the same time the starting point for a new synthesis, the aim of which is to determine the essential nature of the individuality.

### Klinische Wochenschrift, Berlin

Jan. 1, 1923, 2, No. 1

- \*Water Metabolism. C. Oehme.—p. 1.
- \*Fibrous Pericarditis. Volhard and Schmieden.—p. 5.
- \*Dynamic "Protein Fever." Rietschel.—p. 9.
- Assay of Guaiacol Preparations. F. Verzáz.—p. 12.
- Peristalsis of Capillaries. E. Kylin.—p. 14.
- Ventricular Fibrillation in Man. H. v. Hoesslin.—p. 15.
- \*Salt Metabolism. P. Jungmann.—p. 18.
- \*Kidney Function Tests. E. Rehn and L. Günzburg.—p. 19.
- \*Petrushky's Tuberculin Liniment. H. Ulrici.—p. 20.
- Mechanical Impulse for Development of Frog's Eggs. H. Voss.—p. 21.
- \*Potassium Ions and Muscle Tonus. S. M. Neuschlosz.—p. 21.
- \*Surviving Heart of Homothermic Animals. F. Klewitz.—p. 22.
- Hemispasm of the Trunk in Infant. Sonntag.—p. 23.
- \*Paralytic Ileus After Diphtheria. B. de Rudder.—p. 23.
- Treatment of Pernicious Anemia. G. Rosenöw.—p. 24.
- German Social Insurance. Mugdan.—p. 27.
- "Vitalismus" by Conviction. V. v. Weizsäcker.—p. 31.
- Creatin-Creatinin Metabolism. M. Bürger.—p. 33.

**Water Metabolism.**—Oehme reviews the disturbances of water metabolism and discusses especially its central regulation. We do not know anything about the influence of hormones on the central nervous system, but pituitary extract influences the diuresis even after destruction of the nerves of the kidneys. No definite proofs were given that the condition of the blood colloids changes in diuresis due to caffeine. Comparison of the refraction and viscosity of serum, which should show the alleged changes in dispersion of colloids, had negative results. It is more probable that the changes occur in the colloids of the organs themselves—kidneys as well as tissues. The tendency of the organism is to develop ontogenetically and phylogenetically toward constancy of blood composition and changes of concentration in the cells. These cause the movement of substances into them and from them. This regulation is perfected by especially sensitive cells of the central nervous system. It is probable that, in cases of diabetes insipidus in which changes were observed only in the pituitary gland, the authors omitted to examine the tuber and the paraventricular nuclei of the brain.

**Fibrous Pericarditis.**—Volhard and Schmieden point out that a simple adhesion of the pericardium does not necessarily cause clinical symptoms, but fibrous thickening and



contraction of the pericardium is characterized by typical transudate in the pleural and peritoneal cavities. These fluids may even assume an inflammatory character. There are two types or rather degrees of the disease. If the adhesions with the thorax are more pronounced than with the epicardium, systole is difficult, because the heart has to overcome its immobilization by the chest wall. The other type occurs if the fibrous union between the epicardium and pericardium predominates. In this case, diastole is hampered. In the first type the chest wall is retracted with every systole, and if the heart is not strong enough and capable of diastolic filling, the diastole brings the heart forward. This is often mistaken for an apex beat. The second type (or degree) has progressed so far that energetic diastole is no longer possible. The usual clinical signs belong only to the first, milder type. Yet the diagnosis of the second degree is possible by observing the disproportion between the insignificant local findings and the extreme, apparently cardiac, stasis (edema, cyanosis, enlargement of liver, dyspnea). In very severe cases a radiosopic examination shows that the heart is small, and gives an impression as if it were standing still, because the amplitude of movement is minimal. In both degrees, the chest wall over the heart does not rise during respiration (Wenckebach). A very characteristic sign of the second type is the constant fullness of the veins of the neck, which show, in the upright posture, a distinct double collapse in systole and diastole. This phenomenon may be seen even in the arm veins. The venous pressure is from 200 to 300 mm. water. Ascites may precede the general edema, and be the main clinical feature for years, and cause innumerable punctures, Talma's operation and wrong diagnosis. A similar venous stasis occurs only in severe cases of mitral stenosis. Yet the dilatation of the right auricle, the strong impulse of the heart, the irregularity of its action, together with the thrill and presystolic murmur, differentiate this disease. Volhard has tried since 1907 to convince different surgeons as to the necessity of extirpation of the anterior part of the pericardium, and he reports briefly seven such cases. The adhesion was in some cases so extensive that the danger of rupturing the right heart made a complete operation impossible. Two cases in which Schmieden operated were enormously relieved. He reports the history of efforts in this line and describes the operative technic.

**Dynamic "Protein Fever."**—Rietschel investigated the "protein fever" of infants which had been observed by Benjamin in 1914. Healthy infants kept on a comparatively concentrated diet had fever when a part of the carbohydrates or fat was substituted by an isocaloric amount of protein. The infants did not give the impression of being sick, and ingestion of water brought the temperature within a few hours to normal. He attributes the fever to the specific dynamic action of proteins which could not be physically compensated because the food did not contain enough water. This condition is different from toxic protein fever, which is due either to toxic products of decomposition of proteins or to bacterial putrefaction.

**Salt Metabolism.**—Jungmann publishes a new case of an affection of the pituitary (abscess) in which initial symptoms of diabetes insipidus disappeared. It is probable that they were due to increased pressure on the base of the brain during the development of the abscess. The full complex of diabetes insipidus consists in disturbance of the vegetative centers that regulate water and salt metabolism, and the composition of the blood.

**Kidney Function Tests.**—Rehn and Günzberg record the hydrogen ion concentration of ureter urine in patients who received hydrochloric acid before and an intravenous injection of sodium bicarbonate during the experiment.

**Petruschky's Tuberculin Liniment.**—Ulrici tested patients, who were sensitive to tuberculin injections, with twenty times the maximal doses of Petruschky's tuberculin liniment. There was no reaction at all. He admits that the preparation is inoffensive and concludes also that it is absolutely ineffective. Petruschky's claim to have freed the peninsula Hela from tuberculosis is not confirmed by physicians, who found in four years ten cases of tuberculosis among its 500 inhabitants.

**Potassium Ions and Muscle Tonus.**—Neuschlosz studied the action of strychnin on toads: he suspended one gastrocnemius muscle in Ringer's solution and the other in a similar solution free from potassium. While the tetanus was the same, the preceding tonic stage was very feeble in the muscle in the potassium-free solution.

**Surviving Heart of Warm-Blooded Animals.**—Klewitz found that the amounts of sugar used up by surviving hearts (rabbit, dog) are very different, and do not depend upon the activity of the heart. Nitrogenous bodies can be also metabolized by these hearts.

**Paralytic Ileus After Diphtheria.**—De Rudder describes a case of paralytic ileus occurring in a 3 months old infant, fourteen days after nasal diphtheria.

### Mitteil. a. d. Grenzgeb. d. Med. u. Chir. Jena

1922, 35, No. 5

\*The Roentgen Rays in Duodenal Diagnosis. E. Saupe.—p. 555.

\*The Blood Picture with Fibrous Osteitis. A. Roseno.—p. 586.

\*Puncture with Subphrenic Abscess. C. Hirsch.—p. 595.

\*Spinal Cord Tumors. M. Sgalitzer and S. Jatrou.—p. 598.

\*Refractometer Findings in Cancer. Nather and Orator.—p. 611.

\*Exophthalmic Goiter Problems. B. Breitner.—p. 637.

\*Why Muscles Atrophy. A. W. Meyer.—p. 651.

Histologic Findings in Atrophied Muscles. C. Froboese.—p. 683.

\*Tonus and Creatin Content of Striated Muscle. E. Sulger.—p. 691.

**Interpretation of Duodenal Roentgenograms.**—The roentgenograms in 5 cases of diverticulum in the duodenum and of several other unusual cases are reproduced. In one puzzling case there had been no symptoms from the stomach but partial ileus developed, and blood was found in the vomit. The roentgen rays revealed a large cancer in the upper duodenum. Saupe compares the roentgen findings in ten cases with the condition found at the laparotomy or after subsidence of symptoms under medical treatment.

**The Blood Count in Fibrous Osteitis.**—The differential blood count was within normal range in the three cases examined.

**Puncture of Subphrenic Abscess.**—Hirsch describes a technic for exploratory puncture of right subphrenic abscess. One patient was a physician who had had twenty-three exploratory punctures in the course of three months; none of them had brought pus. The punctures had all been made in the area of absolute dulness above the liver. Roentgenoscopy located the abscess in an area of relative dulness, and a long needle introduced a little above the absolute dulness brought pus at once. Prompt recovery followed evacuation of the abscess.

**Roentgen Findings with Spinal Cord Tumors.**—Fifteen cases are summarized in which the tumor had grown from the spinal cord or its membranes. In three of the ten extra-medullary tumors there were small exostoses on the nearest vertebrae, while the spine seemed otherwise intact. The neurologic, roentgen and operative findings are compared with the course, and with the necropsy findings later in five cases.

**Refractometer Findings in Cases of Cancer and in the Predisposed.**—Nather and Orator found that after the age of 45, healthy persons respond to serologic tests in the same way as persons with cancer. They accept this as a specific predisposition to malignant disease because the cell reaction is specific, and may persist unmodified after removal of the cancer. It may be possible to modify this predisposition in some way, for the prophylaxis of cancer.

**Exophthalmic Goiter Problems.**—Breitner asks whether exophthalmic goiter is a disease *sui generis* or merely the severest form of a pluriglandular affection in which the thyroid plays the leading rôle. Another question he propounds is whether there can be affections of the endocrine ring in which the thyroid plays such a subordinate part that the clinical picture can be distinguished from the thyrotoxic pictures. He queries further whether a neuropathic constitution, degenerative tendencies and primary nervous disturbances are the real affection, and the exophthalmic goiter is merely a graft on this. He says that for more than a year all the exophthalmic goiter cases, in Eiselsberg's clinic, have



been closely studied from these standpoints. It is already evident, he says, that the extreme cases of exophthalmic goiter must be regarded as the result of the accumulation of a functional oversecretion or undersecretion of all the glands with an internal secretion.

**Experimental Research on Atrophy of Muscles.**—Meyer induced atrophy of muscles in cats, rabbits and guinea-pigs by immobilizing a limb in plaster.

**Tonus of Striated Muscle.**—Sulger discusses the tonus and creatin content of striated muscle under various conditions of tension and innervation.

### Zeitschrift für Tuberkulose, Leipzig

December, 1922, 37, No. 3

Climatic Treatment of Tuberculosis in German Middle Altitudes. A. Bacmeister and F. Baur.—p. 161. Comment. C. Flügge.—p. 167.  
Origin of Tuberculosis of Suprarenal Capsules. F. Schwarz.—p. 169.  
Treatment of Tuberculosis by Partial Antigens. Warnecke.—p. 184.  
Comment on Frey's "Relaxation Pneumothorax." Gwerder.—p. 192.  
\*Calcium Treatment. Hartwich-Borrmann.—p. 193.

**Calcium Treatment.**—Hartwich-Borrmann combines calcium with potassium to dehydrate the organism. The prescription is *calcii chloridi* 30 parts; *potassii acetatis* 60 parts; *aqueae* 285 parts. Sig.: One teaspoonful in a glass of warm water, half hour before breakfast. In exudates, good results were obtained after giving up to 6 teaspoonfuls daily. This treatment has been applied in appropriate cases during the last two years among the 600 inmates of the Lyster Sanatorium in Norway. A number of typical cases are described in detail to illustrate the special advantages in cases with profuse moist râles. The calcium can be given by the mouth or rectum, subcutaneously or by the vein, and in various forms. A dry cough is no contraindication for calcium treatment, but the doses should be smaller.

### Zeitschrift für urologische Chirurgie, Berlin

Jan. 15, 1923, 11, No. 5-6

\*Hypertrophy of the Prostate. E. Kornitzer and C. Zanger.—p. 137.  
\*Valve-Like Closure of Urethra Opening. C. O. Schmidt.—p. 158.  
\*Technic for Nephrotomy. A. Heymann.—p. 168.  
Perirenal Hygroma. O. Connerth.—p. 169.  
\*Malformation of Uterus, One Kidney Missing. G. Eismayer.—p. 191.

**Hypertrophy of the Prostate.**—Kornitzer and Zanger give photomicrograms from six cases of hypertrophy of the prostate in which connective tissue, muscle and gland tissue were all involved.

**Dilatation of Urinary Organs from Valvelike Obstruction to Outlet of Bladder.**—The protruding abdomen of the premature child measured 35 cm. The diameter was about twice that of the shoulders. A fold in the bladder wall seemed to have acted like a valve to close the inlet to the urethra.

**Technic for Nephrotomy.**—Heymann recommends nephrotomy—without decapsulation—as by far the best means for treating neuralgic pains in the kidney accompanying degenerative nephrosis. To avoid hemorrhage, he incises only the kidney proper, and does not carry the incision into the kidney pelvis. This probably would suffice also for operative treatment of essential hematuria.

**Malformation of Uterus and Kidney.**—Eismayer summarizes from the literature 122 cases of deformity of the uterus with one kidney missing, and describes one case. The woman died from puerperal sepsis after premature delivery. The right kidney was abnormally large and the uterus seemed to consist of only the right cornu. There was no kidney on the left side.

### Zentralblatt für Chirurgie, Leipzig

Jan. 6, 1923, 50, No. 1

\*Pylorus Stomach and Disposition to Ulcer. W. Koennecke.—p. 2.  
\*Recurrence of Gastric Ulcer. O. Wiedhopf.—p. 4.  
\*Recurrence of Cancer of Breast. L. v. Czirer.—p. 7.  
\*Testis Transplantation. C. Hammesfahr.—p. 9.  
Treatment of Amputation Stumps by Sauerbruch Method. Veit.—p. 12.  
\*Roentgen Irradiation of Salivary Fistula. F. W. Kaess.—p. 14.  
\*Primary Suture After Thyroidectomy. O. Orth.—p. 16.

**The Pyloric Portion of the Stomach as Affecting the Predisposition to Ulcer.**—Koennecke gives the results of experi-

ments on dogs. Four dogs, after bilateral exclusion of the pylorus and end-to-end gastro-enterostomy with the duodenal stump (Billroth I), were examined from three to four months after the operation. They presented no pathologic findings, whereas one dog with gastrojejunal anastomosis (Billroth II) developed a typical, penetrating jejunal ulcer. Peptic ulcer is not always due to a single cause; there is usually a complex condition back of it. Peptic jejunal ulcers in man are, of course, usually associated with a disposition to ulcer, as the primary operation was performed generally on account of ulcer. In animals this predisposition has to be artificially produced. In seven dogs he severed both splanchnic nerves and later he supplemented this with bilateral exclusion of the pylorus. All seven dogs survived the operation several months, and all developed typical callous, and, for the most part, deeply penetrating ulcers. The two dogs with gastrojejunal anastomosis developed peptic jejunal ulcers opposite the gastric opening, while the five dogs with gastroduodenal union (Billroth I) presented ulcers of the duodenum from 1 to 2 cm. back of the suture and corresponding to the lesser curvature. As practical conclusions, Koennecke recommends: Avoidance of exclusion of the pylorus in any form in persons predisposed to ulcer formation; as far as possible, resection for ulcer of the pylorus or duodenum; in inoperable duodenal ulcer, resection of the pyloric region, followed by the Billroth II operation (oral gastro-enterostomy); and, finally, gastro-enterostomy for ulcer only exceptionally and when there is no pyloric or duodenal stenosis.

**Recurrence of a Gastric Ulcer Following Use of Silk in Suturing the Mucosa.**—Wiedhopf reports a case of recurrence of a gastric ulcer, and concludes that the findings at the operation furnish further proof for the contention that silk is not so well adapted as resorbable catgut for suturing the mucosa in gastro-intestinal operations.

**Local Recurrences Following Operations on Cancer of the Breast.**—Czirer points out that the ordinary skin incisions used at present in operations for cancer of the breast, in part, cross the lymph paths, and in part run parallel with them; but they are all alike in one respect: In every incision the knife penetrates deeply the dangerous portion of the skin. Czirer's method, which he describes in detail, consists essentially in keeping as far away as possible from the strip of skin under which the superficial and deep lying lymph vessels pass from the mammary gland to the axilla. He argues that it is along these particular lymph vessels that metastasis is likely to occur. The lateral free border of the pectoral muscle also looks suspicious to him, and he endeavors not to get too near to its subcutaneous tissue.

**A Critical Discussion of Testis Transplantation.**—Hammesfahr reports the case of a man, aged 26, whose left testis had atrophied from unknown cause, eight years previously, so that only a hard body of connective tissue, the size of a peppercorn, was left. Six years after the left testis had atrophied, the patient injured the right testis by a blow with a hammer, whereupon also this testis atrophied, in spite of all attempts to conserve it. Libido and interest in his work gradually decreased. By splitting the atrophied testis and embedding it in the abdominal musculature, Hammesfahr sought to save part of the function, but histologic examination showed that there were no elements capable of functioning left—neither seminal tubules nor interstitial cells. He therefore transplanted half of a testis from a patient who had suffered a gunshot wound, and embedded it in the abdominal musculature in accordance with Lichtenstein's method. Ten days later, he noted over the transplant a slight swelling, which, in a few days became soft. On opening the swelling, he found the whole upper portion of the testis soft and necrotic. At the base he discovered a thin (3 mm.) layer of the transplant firmly adherent to the underlying tissue and plainly vascularized. Hammesfahr is almost certain that no appreciable portions of the testis implant became incorporated with the surrounding tissues, but that the adherent vascularized disk was also resorbed later. It was therefore all the more remarkable that, within a few weeks, libido became normal and had persisted at last accounts. It is hypothese-



tically possible that the testicular tissue, though soon resorbed, exerted a stimulating effect on certain vicariously functioning endocrine glands, and that these glands, thus stimulated and metamorphosed as it were, brought about the remarkable change. It is also possible that the result was due wholly to suggestion. Moreover, in judging the results of transplantation in man, we must not lose sight of the fact that sex function depends on purely psychic, imponderable factors to a greater extent than any other function of the human organism. Also it must be remembered that we possess no definitely established, general, normal measure by which to estimate such functioning. Hammesfahr does not wish to seem to oppose the idea of homoplastic transplantation of a testis, but urges the application of strict criticism to the results by the serologic control methods proposed by Stocker.

**Roentgen Irradiation in Treatment of Salivary Fistula.**—Kaess reports two cases in which he found that roentgen irradiation of the parotid gland, by temporarily suppressing gland function was decidedly efficacious in the treatment of salivary fistula. The patients were dismissed cured in from seventeen to thirty days. Kaess holds that roentgen irradiation deserves a special place among the numerous methods employed in the treatment of salivary fistula, and is to be recommended not only in stubborn cases, in which, as a rule, only extirpation of the gland would be considered, but also as an adjuvant in every operative method of treatment. It is conservative and simple.

**Primary Closure in Strumectomy.**—Orth states that not until the past year did he decide to dispense with drainage and resort to primary wound closure in resections. He is well pleased with the results. Lack of care in the operative procedure may be the reason why former attempts at primary suture did not turn out well, and that on the second or third day, and often, on account of hemorrhage, the same day as the operation, the wound had to be reopened and drained. Thus, it would seem that primary wound closure depends on three things: punctilious asepsis, cervical anesthesia and hemostasis. Cervical anesthesia, as distinct from infiltration anesthesia, is an aid to primary wound closure, as it does not affect the subcutaneous cellular tissue. Orth ligates the four main arteries at resection and in only two instances has transient tetany developed. It yielded readily to thyroid treatment. If he ligates only the two superior, and not the two inferior arteries, he finds that, in spite of ligation of the bleeding vessels in the resected area, hemorrhages usually occur, or, at least, hematomas develop, which cause the sutures to open, or, if this does not occur, the trachea may be compressed. Orth holds therefore that, in spite of the slight danger of tetany, the four main arteries should be ligated, since as a rule, vascularization in the resected stumps is assured by the retroglandular anastomoses. The two cases of tetany may have been caused by a temporary injury of the parathyroid glands, or the patients may have had a disposition to tetany.

### Zentralblatt für Gynäkologie, Leipzig

Dec. 30, 1922, 46, No. 52

Brow Presentation with Transverse Frontal Suture. Heinlein.—p. 2065.  
\*Inoperable Carcinoma of the Cervix Uteri. P. W. Siegel.—p. 2067.

**Irradiation of Inoperable Carcinoma of the Cervix Uteri.**—Siegel reports the results of roentgen and radium irradiation in 65 cases of carcinoma of the cervix, the interval since five years or more. Of these 65 cases, 29, according to Döderlein's classification, were operable, 20 were inoperable, 14 were borderline, and 2 were practically hopeless. Of the 29 operable cases, 27 were operated on, and 8 patients (30 per cent.) were still living at the end of five years. In 2 of the 29 operable cases, irradiation was employed. One of these patients still survives. Of the 14 borderline cases, 10 were operated on, and 3 (30 per cent.) survived after five years. Four were given irradiation and none survived the five year period. Of the 20 inoperable cases, 3 (15 per cent.) survive after five years. In the 2 hopeless cases, death ensued. Irradiation of inoperable carcinoma of the cervix uteri, aside from the comparatively high percentage of patients surviving after five years, checked the bleeding, oozing and the pain,

and brought about an endurable state of affairs soon after irradiation was begun. Viewed in this light, irradiation of inoperable carcinoma is a great blessing, and should be instituted in every case of inoperable carcinoma.

### Zentralblatt für innere Medizin, Leipzig

Dec. 23, 1922, 43, No. 51

\*Arterial Hypertension. E. Hartwig.—p. 825.

**Arterial Hypertension.**—Hartwig gives a short review of current opinions, and is in favor of the theory that hypertension is primary and the affection of the kidneys secondary. Yohimbin has given good results.

Dec. 30, 1922, 43, No. 52

\*Control of Puncture of Corpus Callosum. G. Gabriel.—p. 841.

**Control of Puncture of Corpus Callosum by Ventriculography.**—Gabriel recommends ventriculography to control the persistence of the communication made by the puncture. He was able to prove by this method a communication between the ventricles and the subarachnoidal space up to four weeks after puncture of the corpus callosum.

### Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Dec. 30, 1922, 2, No. 27

\*Colon Disease. E. H. B. van Lier.—p. 3050.

Placenta Praevia with Twins. H. Boshouwers.—p. 3057.

Vaginal Hysterotomy for Abortion. H. Boshouwers.—p. 3058.

**Colon Disease.**—Van Lier describes a chronic affection of the colon characterized by attacks of pain, constipation alternating with diarrhea, and tenderness at numerous points in the colon, and pain on pressure and when jarred. The clinical picture resembles that of lead colic so closely that a similar mechanism is probably involved. When a colitis lasts longer than six weeks, it probably belongs to this category. He regards it as an incurable affection which we can improve and keep under control by preventing fermentation and the use of drastic purgatives, and by regulating the diet and encouraging the patient; but our main task is to protect the patient against useless operations. The disturbances are liable to be ascribed to gallstones, movable kidney, gastric ulcer or ovarian disease. Nearly all these patients had had the appendix removed, but without effect on the clinical picture. Van Lier describes a number of cases. One patient consulted a surgeon who diagnosed a tender tumor in the colon and advised operation. The patient then went to an internist who diagnosed spastic contraction and advised medical measures. A second internist diagnosed movable kidney and advised nephropexy—three separate diagnoses in one morning. If the entire length of the colon had been palpated, these blunders would have been avoided. In recent months van Lier has saved two patients from cholecystectomy, and has seen seven others disappointed by the persistence of symptoms after appendectomy.

Jan. 6, 1923, 1, No. 1

\*Hemangiomatic Obliteration of Portal Vein. J. F. Hulk.—p. 4.  
Delivery of a Thoracopagus. J. M. van Dam and H. J. van Eldik.—p. 16.

Experiences with Criminal Abortion. J. A. van Dongen.—p. 24.

A Dicephalus Monster. E. A. J. M. Sträter.—p. 33.

\*Leprosy in Dutch Art. G. van Rijnberk.—p. 34.

Medieval Regulations in Regard to the Plague in Utrecht. A. J. van der Weyde.—p. 42.

History of an Amsterdam Hospital. G. Hellinga.—p. 43.

The Social Side of Psychiatry. W. Beijerman.—p. 74.

**Hemangiomatic Obliteration of the Portal Vein.**—Hulk assumed that volvulus or thrombosis of a mesenteric vessel was responsible for the severe clinical picture and the discoloration of certain loops of the intestine at the exploratory laparotomy. Necropsy revealed that the portal vein was obliterated. The tissues encircling the vein had become transformed into a tumor-like porous mass, with a network of fine vessels and extensive collateral venous circulation. Twelve analogous cases have been published, and various causal factors have been incriminated. He adds that no such formation of porous tissue has ever been encountered around any other vessel.

**Lepers in Art.**—Eight sixteenth-century wood engravings are reproduced which portray lepers. Most of them are the



Biblical scene, in a Dutch setting, of Lazarus at the gate of the rich man, but one depicts a merrymaking of beggars, sham cripples in the yard of the "Lazarusclep." Another shows the annual parade of the lepers at Amsterdam.

Jan. 13, 1923, 1, No. 2

- \*Syphilitic Central Deafness. J. H. Roorda Smit.—p. 130.
- \*Strangulation of Fetus by Umbilical Cord. G. C. Nijhoff.—p. 142.
- \*Active Immunization Against Diphtheria. Cornelia de Lange and J. C. Schippers.—p. 145.
- \*Blue Sclerotics and Brittle Bones. H. L. Straat.—p. 151.
- Murder of Infant by Decapitation. J. P. L. Hulst.—p. 153.
- Uniformity in Social Medical Legislation. W. Schuurmans Stekhoven.—p. 171.

**Syphilitic Disease of the Brain Centers for Hearing.**—Smit relates that of his 17 patients in this category, only 3 had consulted him on account of deafness. In 8 cases the deafness was bilateral. In all the other cases the deafness was first revealed by the examination. One patient had been deaf on the left side for twenty-two years and for seven years on the right side. He recovered his hearing under specific treatment. The diagnosis in this case had been meningitis, and no one had thought of syphilis. The prognosis is graver when the deafness appears during a stormy onset and course of the syphilis, than when it is a late manifestation, or when the syphilis is of the inherited type. Smit says that mercury answers all purposes; arsenicals are not needed, and are liable to aggravate the neurosyphilis. In the cases of inherited syphilis, in 4 the deafness developed at puberty. Another developed at the age of 21 in connection with keratitis. One patient who had been deaf for thirty-five years regained his hearing. The syphilis had been acquired only in one of the 5 cases in this group. The almost complete recovery shows that the auditory nerves had not degenerated, notwithstanding the long blocking of the auditory centers by the syphilis.

**Strangulation of Fetus by Umbilical Cord.**—The cord was twisted around the neck two, three or four times in the three cases illustrated. In another case the murmur could be heard and the thrill felt in the umbilical cord although, when the child was extracted, the cord was wound around the neck four times, and the child was resuscitated.

**Active Immunization Against Diphtheria.**—De Lange and Schippers' experience with thirty-two cases has confirmed the reliability of the Schick reaction and of the toxin-antitoxin method of prophylaxis.

**Blue Sclerotics and Fragile Bones.**—In the cases described by Straat the clinical picture included otosclerosis. The grandfather and two of his four children had presented the whole triad. Three of the five members of the third generation present the blue sclerotics and easily fractured bones, but otosclerosis is not apparent as yet; all are under 11 years old.

Jan. 20, 1923, 1, No. 3

- \*Mongoloid Idiocy. L. Bolk.—p. 226.
- Mortality in Different Parts of the Netherlands. Ouwehand.—p. 235.
- \*Paralysis from Occult Spina Bifida. E. Hoelen.—p. 252.
- \*Obstetric Examination. J. H. Van Blommestein.—p. 259.
- \*Physical Properties of Blood Serum. J. Koopman.—p. 264.
- Stomach-Colon Fistula with Cancer. D. A. de Groot.—p. 275.
- Delivery with Unsuspected Pregnancy. K. A. Rombach.—p. 276.
- Pyometra After Radiotherapy of Inoperable Cancer. Lammers.—p. 278.

**Mongoloid Idiocy.**—Bolk explains the mongolian aspect of the eyes as the result of arrested development of the epicanthus. This arrest of development may extend to the brain. He argues further that the "hormone index" is peculiar to each individual, and that the hormone index in mongoloid idiots must differ from normal in some essential way. There must be some special irritating or inhibiting element. Biochemical research may reveal the nature of this element.

**Paralysis from Occult Spina Bifida.**—Hoelen reports a case which teaches that search should be made for spina bifida when neurologic disturbances develop in the legs during the period of puberty. The first symptoms had been bilateral paralysis of the peroneus muscle, with signs of degeneration and atrophy, slight dissociated sensory derangement, and exaggeration of the reflexes in the foot. The spinal fluid had a normal cell count, with very high albumin content. There was no depression of the skin, but the roentgen rays revealed occult spina bifida in the first sacral vertebra. A

mass of fat and connective tissue protruded into the spinal canal through the gap in the spine. The arch of this vertebra and of the one above were resected, and the soft-part mass, adherent to the dura, was removed. All the nervous symptoms subsided thereafter, and by the end of the year the feet had returned to normal shape. The young man can walk for three hours without a trace of fatigue. This is the only instance of bilateral peroneus paralysis from this cause of which Hoelen can find records. There were no trophic disturbances in this case, but slight vasomotor derangement was manifest.

**Obstetric Examination by the Rectum.**—Blommestein declares that of the thirteen points we seek to determine by internal examination, eight can be determined through the rectum, as well as through the vagina. In Hermann's recent analysis of 720 obstetric cases, a temperature of 38.1 C. was recorded in 20.6 per cent. of those examined by the vagina and in 6.8 per cent. of those examined by the rectum alone.

**Certain Physical Properties of the Blood Serum.**—Koopman compares the findings in 800 serums examined for the temperature at which the serum coagulated when slowly heated. In the healthy, this occurred between 73.2 and 74.6 C. In 42 cases of nephritis, the findings were within normal range in all but 14; in these the coagulation did not occur until the temperature had reached 77.9, 83.9 or 90.4, or intermediate points. The blood pressure ranged from 120 to 220, and all had albuminuria and tube-casts. In 12 cases of pernicious anemia, 9 had normal coagulating and refractometer findings. In 3 the coagulating point was 80, 83.6 and 85.7, while the refractometer index was abnormally low. In all of 33 cases of ordinary anemia and some of leukemia, the coagulation point was normal, as also in his cases of heart disease. But in jaundice the coagulation point was high. This suggests that in pernicious anemia a rise in the coagulation point may be due to the bile pigment in the serum. A higher coagulating point renders the prognosis graver.

### Norsk Magazin for Lægevidenskaben, Christiania

January, 1923, 84, No. 1

- \*Pathology of Tissues of Ectodermal Origin. J. Henriks and P. Henriksen.—p. 1.
- \*Pemphigus of the Conjunctiva. E. Trumphy.—p. 27.
- \*Tumor in Cerebellopontile Angle. I. Lossius.—p. 32.
- \*The Fat-Soluble Vitamin A. E. Poulsson.—p. 35.
- Pathogenesis of Pernicious Anemia. P. F. Holst.—p. 50.

**Disease of Ectodermal Origin.**—Henriks has continued his research on families presenting a combination of mental disease and skin disease. He here describes a new instance which sustains his conception that some primary anomaly in the ectoderm is responsible for this coincidence of hereditary disease of the nervous system (imbecility, von Recklinghausen's disease and ichthyosis), of the organs of sense, and of the skin. Henriksen presents microscopic evidence of degeneration of nerve fibers in such cases, and urges search for the defects in internal secretion which are probably the primary factor. Carrel's method of artificial activation may aid in this line.

**Pemphigus of the Conjunctiva.**—The pemphigus involved the conjunctiva at its first onset in one of the two cases described. The other patient had had recurring pemphigoid blisters in the mouth and throat for three years before the eyes were affected. No benefit was derived in either case from arsenic internally and local applications.

**Tumor in Cerebellopontile Angle.**—The symptoms were typical except that the optic disks seemed to be normal. The tumor was removed at one sitting. The man, aged 60, died soon afterward.

**The Fat-Soluble Vitamin A in Indirect Infant Feeding.**—Poulsson concludes from his research that cod liver oil contains 200 or 300 times as much of the fat-soluble vitamin A as butter. He emphasizes the necessity for giving minute doses of cod liver oil to women nursing children that do not seem to be thriving. In a case described, the infant's growth seemed to be arrested at the age of 6 weeks. Then the mother began to take a tablespoonful of cod liver oil, three times a day, and the infant immediately began to thrive. The woman's milk had always had normal fat content.



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## CHARACTERIZATION OF VARIOUS FORMS OF ENDOCARDITIS \*

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NEW YORK

According to the studies that we have made, cases of endocarditis can for the present be best classed as rheumatic, syphilitic, acute bacterial, subacute bacterial, and indeterminate.

The cause of rheumatic fever has not yet been discovered. There exists, however, a lesion specific for the disease, the Aschoff body. It is to be remembered that this is a perivascular lesion, in contradistinction to the lesion later to be noted as occurring in cases of subacute bacterial endocarditis. In rheumatic fever, a secondary infection by anhemolytic streptococci was found by Kinsella and Swift in 8.3 per cent. of the cases studied by them. At the postmortem examinations, cultures yielded the organisms in 50 per cent. of the cases. They found no immunologic reactions present for these cocci, whereas in cases of subacute streptococcus endocarditis they observed, as we did, that a complement fixation test is uniformly present when the serum of the patient is tested against the homologous organism. Rheumatic fever may occur in acute, subacute or recurrent form. It is the most frequent cause of valvular defects.

Syphilitic disease of the valves of the heart is known to us practically only as an end-product. It is very likely that it occurs in at least acute and recurrent forms. It is important to make studies in this direction.

### BACTERIAL GROUPS

The groups called bacterial are so designated because they are due to known bacteria. When the cause of rheumatic fever is discovered, a better nomenclature can be introduced. The cases of bacterial endocarditis that run an acute course are due most commonly to hemolytic streptococci, pneumococci, staphylococci and the gonococcus, but can also be caused by a great variety of other organisms. The acute bacterial endocarditides occur much less frequently than infections running a subacute course. Cases lasting for six weeks are usually classed as subacute. The acute cases were formerly called "acute malignant endocarditis." The subacute cases are due in about 95 per cent. of the cases to anhemolytic streptococci (the so-called *Streptococcus viridans*). The remaining cases are nearly all caused by the so-called *Bacillus influenzae*.

Other organisms, especially the gonococcus, can cause an infection giving a subacute picture, while on the other hand, the organisms found in the subacute cases may, rarely, originate an infection of short duration. These subacute cases have been designated by a variety of names, the most frequently employed being chronic septic endocarditis, septic rheumatic endocarditis, chronic infectious endocarditis, chronic malignant endocarditis and endocarditis lenta. It is best to designate the bacterial cases according to the course of the disease and the infecting organism. As the subacute cases are almost entirely due to anhemolytic streptococci and the influenza bacillus, they are best designated as subacute anhemolytic streptococcus endocarditis or subacute *Bacillus influenzae* endocarditis. For brevity, one can call the streptococcus cases subacute streptococcus endocarditis, because we know that the hemolytic streptococci practically never are the cause of a case of endocarditis of subacute type. I myself have seen no such cases.

### THE INDETERMINATE GROUP

What we designate as the indeterminate group consists essentially of two types of cases: (1) an atypical form of verrucous endocarditis, and (2) those cases usually described as terminal.

To explain what we mean by the atypical variety, it is necessary to revert to the subject of rheumatic fever. We have stated that the Aschoff body is the characteristic lesion of this disease, and, for scientific purposes, only those cases in which this lesion is found can definitely be designated as rheumatic. In our studies of hearts from cases clinically recognized as cases of rheumatic fever, and exhibiting at postmortem examination the typical verrucous lesions, only eighteen out of fifty-six cases exhibited Aschoff bodies. A study of the clinical histories of the other thirty-eight cases makes it clear that many of them at least are cases of true rheumatic fever. It is evident, therefore, that not all cases of rheumatic fever are accompanied by the specific lesion. At the same time, we cannot state that all of the cases not showing the bodies are cases of rheumatic fever. Possibly, some belong in the indeterminate group which I shall now discuss.

Besides those cases that present the clinical picture of rheumatic fever and the typical verrucae on the valves, but not Aschoff bodies, there exists a group of cases presenting more or less the clinical picture of rheumatic fever (with perhaps a greater tendency to the occurrence of purpura and erythema), not showing Aschoff bodies at the postmortem examination, and accompanied by lesions on the valves which do not correspond to those usually found in rheumatic fever. The lesions are much larger and flatter, and have a tendency to extend for a fair distance along the surface of the

\* Read before the Association of American Physicians, May 3, 1922.

\* From the medical and pathologic departments, Mount Sinai Hospital.



valves. They may show a somewhat crinkled appearance, and in one case, the lesion extended from the mitral valve for a considerable distance over the mural endocardium of the left ventricle. The mural endocardium may be involved at a distance far away from the valves. Bacteria have thus far not been found in the vegetations of this group. It is possible that some of them represent unusual types of vegetations of rheumatic origin.<sup>1</sup> There are no so-called Bracht-Waechter bodies in the myocardium in these cases.

The other type of what we for the present designate as the indeterminate group of cases is represented by what has usually been described as terminal endocarditis. This is a form of endocarditis that occurs without recognized symptoms at the end of a chronic and debilitating disease. It has been found most frequently in such conditions as diabetes, gout, nephritis, neoplasms, old lesions of the nervous system, and exophthalmic goiter. We have been surprised by the frequency of its occurrence in cases of leukemia, acute or chronic. The lesions are small verrucae, and in the heart muscle and kidneys there are no known characteristic changes. These cases need renewed investigation. It may very well be found that some, at least, of these endocarditides are instances of a terminating and not of a terminal disease. I drew attention to the importance of this distinction, a number of years ago. It has been thought by some that the lesions in these cases may be toxic in origin. It is just as likely, or more likely, that they are definite infections. In cases of chronic valvular disease of rheumatic origin, such an endocarditis may be found. The question then arises whether or not we are possibly dealing with a terminal endocarditis of rheumatic origin, without the presence of Aschoff bodies. The fact that symptoms are not present does not constitute an argument against a possible rheumatic origin of the lesion, because we have seen cases of acute rheumatic endocarditis occur in the absence of all recognizable clinical symptoms. In cases of subacute bacterial endocarditis in the bacteria-free stage (which I shall shortly define), a so-called terminal endocarditis has been found by us. Recently we have found that a true rheumatic endocarditis may occur as a terminal infection in the course of other diseases.

Little is known as regards the inflammatory changes in the valves in cases of exanthematous and other specific fevers, except, of course, the occurrence of acute bacterial endocarditis. In patients who had suffered some time before from scarlet fever, we have found an undescribed lesion of the mitral valve. This I shall discuss at another time. Tuberculosis of the endocardium is a very rare disease. Atherosclerosis is not an inflammatory process, but it plays a great rôle in the production of valvular defects. Its importance in causing disease of the mitral valve has not been sufficiently understood. Besides typical atherosclerosis there are a number of other causes of noninfectious thickenings of the valvular and mural endocardium.

#### PATHOLOGIC AND CLINICAL CHARACTERISTICS

It will now be of value to take up briefly some of the pathologic and clinical characteristics of these varieties of endocarditis. It will be possible to discuss only some of them. The syphilitic and indeterminate cases will be only casually brought in for discussion, because our

knowledge of them is in a great many respects, very deficient.

The first question that arises is in regard to the significance of the presence of a previous valvular disease. Valvular defects are caused by rheumatic fever, atherosclerosis, syphilis, congenital disease, traumatism, and rarely by a bacterial endocarditis that has ended in recovery from the infection. Rheumatic fever and syphilis readily attack healthy valves. Acute bacterial endocarditis usually attacks a valve that is the seat of a previously existing valvular defect. Subacute bacterial endocarditis occurs almost always on the basis of a previously damaged valve. It involves most frequently valves previously affected by rheumatic fever, less often syphilitic valves, and, still less often, valves affected by atherosclerosis. Acute bacterial endocarditis is not at all an infrequent occurrence in connection with all kinds of congenital cardiac defects. The congenital lesion that we have most often found involved in cases of subacute endocarditis is the open ductus arteriosus. This may very well be so because this is the congenital lesion most often found in adult life. The indeterminate cases of endocarditis may occur in the entire absence of previous valvular disease.

The portals of infection in syphilis are well known. In rheumatic fever, knowledge in this respect is lacking. The tonsils appear in some instances to be the seat of the virus, but it has not been proved that they represent the only or the main portal of entry. The origin of acute bacterial endocarditis is usually found in an evident purulent focus. In the subacute cases, the invasion usually originates in what, following Billings and Rosenow, we call focal infections. It is possible that the disease may be initiated by organisms in the intestinal tract.

A study of the extensive material at our disposal (made with the valuable assistance of Dr. Benjamin Sacks) shows that in fatal proved cases of rheumatic fever the tricuspid valve was involved in twelve of eighteen cases, or more than 66 per cent. Taking all the cases classed clinically as rheumatic and showing typical vegetations at the postmortem examination, but without Aschoff bodies, we find fifty-six cases, thirty-one of which, or 55 per cent., were accompanied by vegetations on the tricuspid valves. This was not surprising, because I had for many years drawn attention to the high incidence of more or less marked stenoses and organic insufficiencies of that valve. Syphilis, as is well known, has an affinity for the aortic valve. Nothing definite is known as to the involvement of the mitral valve. In cases of acute bacterial endocarditis, the right side of the heart (tricuspid or pulmonary valves, or both) was found involved in fifteen out of fifty-six cases, or 26.8 per cent. The mitral valve was affected more often than the aortic, the same holding true of cases of subacute bacterial endocarditis. In cases of the latter disease, the right side of the heart was involved once (tricuspid) in more than 100 hearts, and the lesion was slight. The atypical cases involve the right side of the heart frequently, in one instance the pulmonary valve being affected. This valve was not found affected in any definitely proved case of rheumatic fever. Terminal endocarditis appears to be a disease of the left side of the heart, the mitral valve being the usual seat of the disease.

As regards the type of gross lesion found, in rheumatic endocarditis it is a small verrucous lesion which undergoes scarring and leads to stenoses and insufficiencies. In acute bacterial endocarditis, one finds

1. In one case studied within the last year, an opportunity was afforded to follow the entire clinical course. The clinical picture was different from that of rheumatic fever and of subacute bacterial endocarditis.



fibrinous deposits, ulceration, and abscesses of, and perforations through, the walls. In subacute cases the lesion may be small or massive, but even when small is practically always larger than the lesion found in cases of rheumatic fever. There is little tendency to ulceration; and, if ulceration does occur, it is usually in the aortic flaps. The disease occurs much more frequently on the mitral than on the aortic valve. There is then frequent involvement of the wall of the auricle and of the chordae tendineae. Healing often occurs, with resulting fibrous tissue, with or without calcareous impregnation. In the cases of terminal endocarditis, the lesion consists of verrucae usually quite small.

#### MICROSCOPIC APPEARANCE

The statements made here concerning the microscopic appearance of the various types of lesions are based on studies made by Dr. George Baehr, who will later report on them in full. In rheumatic endocarditis, the verrucae in a given attack all appear to be of the same age. The first change is a productive inflammation over which the endothelial cells swell and desquamate. The denuded areas are covered by agglutinated blood platelets. The adjacent endothelium rapidly proliferates, covering the surface of the blood platelet nodule and thus limiting its size. This is the typical verruca. Later, the nodule becomes organized and thereby flattened, and a ridgelike scar is found along the closure line. In the atypical cases of the indeterminate group and in the terminal cases, the lesion is essentially the same as it is in the rheumatic cases. What differences do exist will be described at a later time. In acute bacterial endocarditis, we find a purulent infiltration over a very much wider area, with resulting necrosis and ulceration. A large blood platelet mass results, the so-called vegetation. It is invaded by polymorphonuclear leukocytes and by such large numbers of organisms that there is a veritable row of colonies on the surface. Endothelium does not cover the mass. Organization occurs in the deep layers of the vegetations in patients who do not die within the first few weeks. In cases of subacute streptococcus and *Bacillus influenzae* endocarditis, the primary lesion, though small, is larger than it is in rheumatic fever. There is no purulent inflammation, but a productive process with a tendency to round cell infiltration. The process spreads by continuity. The blood platelet mass that is formed is invaded by such large numbers of bacteria as to form definite rows of colonies, especially near the surface of the mass. The vegetations contain few polymorphonuclear leukocytes. In a number of cases, giant cells are found, apparently of the foreign body type. When present, they constitute a characteristic lesion of this type of endocarditis. Phagocytic cocci are often demonstrable in them. The freshly formed portions of the vegetations consist almost entirely of bacteria. The endothelium of the adjacent endocardium is inhibited to a great extent from spreading over the surface of the mass because of the presence of the colonies of bacteria. In the deeper and older portions, the bacteria tend to disappear, and here an active fibroblastic invasion is always to be seen; and, when healing occurs, dense connective tissue with and without lime has formed.

Whatever lesions are found in the heart muscle in cases of acute bacterial endocarditis consist in the main of polymorphonuclear leukocytes. In cases of subacute bacterial endocarditis, one finds an essentially round cell interstitial lesion, the so-called Bracht-Waechter body. These lesions are not present in all cases, and are not specific. In rheumatic fever, as stated above,

Aschoff bodies may be present. In syphilis, as is well known, syphilitic lesions of smaller or larger extent may occur in the myocardium.

#### OTHER FINDINGS

Pericarditis of various types, including the purulent type, occurs in the cases of acute bacterial endocarditis. In rheumatic fever, pericarditis is very frequent, a purulent effusion never being found. It is also found in atypical verrucous endocarditis of the indeterminate group. We have observed one case in which there was a recent pericarditis accompanied by Aschoff bodies in the heart muscle, but not by any lesions of the valves. In subacute endocarditis, pericarditis is not part of the clinical picture. It might very well occur as the result of the presence of pneumonia or some other complication, or it might represent a mixed infection with rheumatic fever.

Embolic lesions occur with great frequency in the acute and subacute bacterial cases. They consist of petechiae, Janeway lesions, Osler (tender cutaneous) nodes, gross embolisms in the vessels, embolic aneurysms and purpura. The last named condition, as well as petechiae, particularly white-centered ones, can, of course, occur without being embolic in nature. Embolic lesions in cases of rheumatic fever or valvular disease are due to secondary thromboses and not to the valve lesion as such. Such emboli never produce tender nodes or embolic aneurysms. The Osler node occurs only in the subacute cases. Subcutaneous fibroid nodules are found only in the rheumatic cases. The Janeway lesions occur almost exclusively in the cases of acute bacterial endocarditis.<sup>2</sup> In connection with subacute bacterial endocarditis, I have seen them only three times, and in all these three instances they were quite small. In these cases there were associated small oval areas of erythema scattered over a smaller or larger part of the surface of the skin of the body—a type of eruption that we have never seen in cases of acute bacterial endocarditis. Typical erythema nodosum is not found in cases of acute or subacute bacterial endocarditis, but can occur in cases of definite rheumatic fever. Erythema multiforme in its typical form occurs only in the rheumatic cases and in the atypical cases of the indeterminate group. Atypical erythematous lesions are seen in cases of acute and subacute bacterial endocarditis. Petechiae occur frequently in cases of acute and subacute bacterial endocarditis. When they occur in rheumatic fever, it is only as part of a purpuric eruption. Petechiae having white centers occur in the acute and subacute cases, but more often in the latter. Those with elevated white centers are found only in the acute cases, and then usually indicate a general staphylococcus infection.<sup>3</sup>

Purpura occurs in cases of rheumatic fever and in the atypical cases of endocarditis, but is then not due to embolism. In cases of acute and subacute bacterial endocarditis, the purpura that occurs may be either embolic or not embolic in origin.

In the eyes we find lesions in both the rheumatic and the bacterial cases. The uveal tract may be involved in cases of acute bacterial endocarditis. The lesion is

2. These lesions were described many years ago by Edward G. Janeway as "small hemorrhages in the palms and soles with slightly nodular character." In contradistinction to the Osler nodes, these lesions are not tender. The lesions are of such great value for diagnosis that we have thought it proper that they should have a special designation, and that this designation should carry the name of the eminent clinician who emphasized the importance of them for diagnostic purposes. We have found that some of these lesions may be rather erythematous in character.

3. Petechiae with elevated white centers or elevated petechiae may occur in general infections which are not accompanied by an endocarditis. They occur most frequently in cases of staphylococcemia.



usually a severe one, often terminating in panophthalmitis. In the subacute bacterial cases, no such lesions have been found by us. In fact, we have not seen any cases in which the uveal tract was involved in even a mild way in cases of the subacute type. This is rather remarkable because the same focal infections that cause endocarditis are known not infrequently to produce disease of the iris, ciliary body and choroid coat of the eye. In one case the patient suffered from a choroiditis due to ethmoiditis, and soon afterward developed a subacute streptococcus endocarditis, apparently of tonsillar origin. The choroiditis did not recur. In rheumatic fever, uveal involvement occurs, but such a complication is very unusual. The literature on this subject is quite misleading. Apparently, cases of disease of the uveal tract due to the bacteria present in focal infections have been wrongly classed as rheumatic. Optic neuritis occurs in the various types of bacterial endocarditis. It is much more frequent in cases of subacute streptococcus endocarditis than has usually been realized. Optic atrophy may result. Besides hemorrhages in the retina, certain white spots, which were first described by von Roth and which are often termed Roth's spots, are found. They seem to occur much more frequently in the acute than in the subacute type of cases.

In cases of rheumatic fever, acute bacterial endocarditis and atypical verrucous endocarditis, the skin over the joints may be red. In the subacute cases one practically never sees this condition. When it occurs, one must think of the possibility of a mixed infection with rheumatic fever being present. Pus is found in the joints only in cases of acute bacterial endocarditis.

The study of the kidneys has given most interesting results. In acute bacterial endocarditis, besides infarcts, one may find purulent lesions. In the cases of rheumatic fever in which Aschoff bodies were present, there were not found any instances of diffuse glomerular nephritis. In the cases classified as rheumatic and in which Aschoff bodies were not found, glomerular nephritis was found three times. In subacute streptococcus endocarditis, besides infarcts, there occurred the embolic glomerular lesions which were first described by Löhlein and fully studied by Baehr. These lesions occur in no other form of endocarditis, and very rarely in other conditions.<sup>4</sup> The embolic lesions occurred in all but two of sixty-eight cases studied by Dr. Baehr. They were found to be less abundantly present in cases in the bacteria-free stage. Diffuse glomerular nephritis occurs more than fifteen times as frequently in the bacteria-free stage of subacute streptococcus endocarditis as in the bacterial stage. When found in the bacterial stage it is acute in type, whereas in the cases in the bacteria-free stage, it presents the appearance of a subacute or chronic diffuse glomerular nephritis. In one case of rheumatic fever (Aschoff bodies present), necroses were found in the renal cortex and also in the heart muscle, which were due to a proliferative lesion in the endothelium of the arteries. A study on this subject will be reported later by Drs. Baehr and Sacks. In the cases of subacute bacterial endocarditis due to the influenza bacillus (seven cases), we have thus far found no embolic glomerular lesions. We do not yet know whether this observation has any significance. The Osler nodes were found in some of these cases. Diffuse glomerular nephritis was found in one case in the bacterial stage.

#### CONDITIONS IN WHICH ANHEMOLYTIC STREPTOCOCCI HAVE BEEN FOUND

It is important to remember that anhemolytic streptococci may be found in the blood of patients suffering from conditions other than endocarditis. Otherwise, one would make the error of concluding, from a report that such streptococci had been found in the blood of a patient, that an endocarditis was present. They have been found in:

1. Cases of subacute streptococcus endocarditis.
2. Cases of rheumatic fever and of chorea. As stated earlier in this communication, under these conditions they are believed to be secondary invaders. The cocci found in such cases differ in certain morphologic and cultural characteristics from those found in cases of subacute bacterial endocarditis.
3. Cases of combined rheumatic endocarditis and subacute streptococcus endocarditis, their presence being due to the second named condition. I shall at another time describe such a case.
4. As an invasion from active or quiescent focal infections, especially the tonsils.
5. As an invasion from acute inflammatory processes in various parts of the body, as, for instance, thrombosis of the lateral sinus, postpartum infections, and phlegmons.
6. As a secondary or terminal invader in a variety of diseases. In cases of verrucous endocarditis of the rheumatic or terminal type, Reye recovered anhemolytic streptococci regularly from the crushed vegetations. In sections they were found only with great difficulty.
7. Fatal cases of valvular defect or subacute *Bacillus influenzae* endocarditis, as a secondary infection.
8. A curious group of cases,<sup>5</sup> described by Oille, Graham and Dettweiler, characterized by subfebrile temperature elevations and the presence of anhemolytic streptococci in the blood. The patients, of whom there were twenty-three, all recovered. Because embolic features were not present and because there was otherwise no absolute evidence of organic change in any of the valves, one cannot be sure that the endocardium was involved. Nevertheless, one must admit that in at least some of these cases an infection of the endocardium took place. Herrick and Warren reported a small group of cases in which there occurred a general infection by an hemolytic streptococci, with recovery. Some of these were found in the course of a valvular defect. Here also one cannot be sure whether or how often the valves were involved.

#### MIXED TYPES

Mixed types of valvular affections and mixed infections of various kinds come under observation. The combination of valvular disease and endocarditis have been mentioned. Some of these are:

1. Atherosclerosis and syphilis, either being the primary lesion. The combination of valvular disease and bacterial endocarditis is common knowledge. Atherosclerosis and atherosclerotic processes are often added to valvular disease of rheumatic origin. How often the rheumatic virus attacks a valve that has previously been the seat of atherosclerosis, we do not know.
2. Rheumatic fever and subacute streptococcus endocarditis. We observed one case in which the bacteriologic and pathologic studies proved definitely that the two diseases were present at the same time, the lesion of rheumatic endocarditis being present near the free border of the mitral valve, and the lesion of the subacute streptococcus endocarditis, much larger in size, being present on the ventricular aspect of the aortic flap of the mitral valve. In a second case there were found the healing lesions of subacute endocarditis of the valves and fresh Aschoff bodies in the heart muscle.
3. Valvular defect and verrucous (terminal) endocarditis.

5. A group of eighteen similar cases has recently been reported, mainly from the bacteriologic side, by Salus.

4. We have found them in one case of actinomycosis, and in a case the exact nature of which was never cleared up, and which at the post-mortem examination presented an adherent pericardium and focal necroses in the liver.



4. In cases of subacute streptococcus endocarditis, secondary infections by pneumococci are occasionally found, the latter being then generally due to the presence of a pneumonia. In endocarditis in the bacteria-free stage, a secondary infection by an anhemolytic streptococcus has been found once in a case of healing *Bacillus influenzae* endocarditis, and in another case of healing streptococcus endocarditis there were some superficial lesions due to a secondary infection by *Staphylococcus aureus*. In the latter case there were present purulent foci in the heart muscle, in which staphylococci were demonstrated in sections.

#### COURSE

It will now be of interest to discuss, even if briefly, the course of the various types of endocarditis. The outcome of the syphilitic cases in the form of aortic insufficiency is known to us, but little has been learned concerning the history of the active stage of the infection. The general course of rheumatic endocarditis has been much but not sufficiently well studied. It is necessary to carry on renewed investigation concerning the life history of the disease and of the lesions. It is of interest to note that death may occur in the first attack of rheumatic endocarditis. We have definite pathologic evidence on this point.

In the last twelve years we have learned much that is new concerning the course and outcome of cases of subacute bacterial endocarditis. In the discussion of this subject it is necessary to distinguish cases in the bacterial and the bacteria-free stages. The case is surely in the bacterial stage if the blood culture is positive; but it may be in the bacterial stage, and yet the blood culture may be repeatedly found negative. This can be determined by clinical criteria, but more definitely by the postmortem examination. In cases in the active stage of subacute bacterial endocarditis, the surface of the vegetations consists almost entirely of bacteria. If the organisms are present in small numbers, the case is already going over to the bacteria-free stage. With these facts in mind, we can discuss the cases as they present themselves to us clinically.

#### CLINICAL OBSERVATIONS

1. *Cases Giving a Positive Blood Culture.*—More than 90 per cent. of cases in the active stage are found to have bacteria in the blood if proper methods are used. What happens to these patients? Nearly all of them die. When I had completed the study of the first 150 cases I had observed four cases of complete recovery. In these cases there was no proof that the particular method of therapy employed was responsible for the favorable outcome. Since that time I have observed at least two more such cases. The first four patients came under observation, respectively, nine, seven, five and five years ago. The fifth patient was observed during the greater part of the year 1921, and has been free from the infection since January of this year. The sixth patient that recovered has been under observation for several months since the time of recovery. To be sure that a patient has really had the disease, one needs more, as I stated above, than to find that there is present valvular disease and that there are bacteria in the blood. There must be definite clinical symptoms present, such as fever, splenic enlargement, petechiae, tender nodes, embolisms and progressive anemia. There exist cases in which a positive blood culture is found followed by negative blood cultures. These patients usually die within a few months. After the blood is free from bacteria, the patients generally present symptoms like those occurring in the cases to

be described directly, that come under observation for the first time in the so-called bacteria-free stage.

2. *Cases Coming Under Observation with Negative Blood Cultures.*—A. Some of these cases are in the active stage. Clinically they act like the cases in which the blood cultures are positive, and the necropsy shows vegetations full of bacteria. These cases really belong in Group 1, constituting cases of that type in which we failed to find the bacteria during life.

B. This group has the same symptoms as cases in the active stage, but they gradually lose the fever and most of the other symptoms. Most of these patients die while still in the febrile stage. At the necropsy, few or no bacteria are found in the vegetations. They are evidently cases that were recently in the bacterial stage of the disease. Those patients that live after the fever has disappeared present a clinical picture like that presented by patients constituting the next group.

C. Here we find a remarkable group of cases in which fever is not a characteristic symptom as it is in the active stage of the disease. Some of these patients have no elevation of temperature during a long period of observation, which may extend over many months. Fever may occur because of complications, anemia or intercurrent diseases. The type of cases belonging to this group, which comes under observation still febrile, with negative blood cultures, and then becomes afebrile, has been described in Group B.

In papers published in 1912 and 1913 and in subsequent communications, I have directed attention to a group of patients who come under observation with a valvular defect and with a variety of symptoms such as embolisms of the various types mentioned above, progressive anemia, splenomegaly, progressive insufficiency of the kidney due to subacute or chronic glomerular nephritis, or a peculiar pigmentation of the face. These cases had generally been considered to be instances of chronic rheumatic endocarditis. From pathologic, bacteriologic and clinical studies, it was definitely shown that such patients must have had a previous endocarditis of the bacterial type, and had not come under observation in the bacterial stage, or had not been recognized as suffering from such a condition. Such cases are designated as cases of subacute bacterial endocarditis that have become spontaneously bacteria-free. The lesions in the heart were of the same type as were found in the cases in which positive blood cultures had been obtained, but showed marked or complete organization with or without calcification. In nearly all the cases the typical embolic glomerular lesions were found, but in a healed stage. They were much less abundantly present than in the cases that showed evidence of active infection. In the few cases in which the embolic glomerular lesions were not found, the patient had presented typical Osler nodes during life, and the cases could therefore be accurately identified.

It is interesting to speculate on the probable great frequency of subacute bacterial infections of the valves of the heart with complete recovery in cases in which there is no history of the active infection. I have shown that cases with positive blood cultures may undergo complete recovery, and have drawn attention to the occurrence of cases coming to us with sequelae of the disease in which there is no history of the active bacterial stage of the disease (we have seen at least fifty such cases). It is therefore most probable that there occur cases in which the infectious stage was never recognized clinically, and in which a complete recovery



ensued, leaving no evidence behind of a type that we have heretofore recognized.

3. *Recurrences*.—During the last year we have made the novel observation that recurrences of the disease exist. Thus far four such cases have come under observation:

A. A case in the bacteria-free stage with fresh lesions due to anhemolytic streptococci. There were very recent and also completely healed embolic glomerular lesions.

B. A case with positive blood cultures; then a bacteria-free stage with the development of renal insufficiency, and later a return of the fever and bacteremia, and a fatal outcome.

C. A case with positive blood culture in which there was fever for several months; then a completely afebrile period lasting six months, and a second attack of fever lasting three weeks with a general infection of anhemolytic streptococcus. In the first attack, petechiae were present and the spleen was enlarged. In the second attack, splenic enlargement was present. This patient is being kept under observation.

D. A case apparently at the end of the active stage of the disease, with fever, white-centered petechiae, enlarged spleen, tender sternum and marked anemia, running a course of a number of weeks, with negative blood cultures. All the symptoms then disappeared, and after ten months the fever returned for three weeks and white-centered petechiae were repeatedly found, and anemia developed under observation. This patient now has no fever and is being further studied.

All of these cases could be used as evidence that recurrences of the infection may take place. Further studies in this direction are highly desirable because it is very probable that recurrences of the disease are much more frequent than we had believed possible. The occurrence of mild forms of the disease points in this direction. Reference has been made to the cases described by Oille, Graham and Dettweiler. I am not yet in a position to state how often such mild cases occur, but the studies of the last few years have made me believe that I may have overlooked a number of them.

#### CONCLUSION

It is evident that I have presented the subject of the characterization of the various forms of endocarditis in a very broad way only. It is realized that the various subjects that have been discussed must later be taken up in a more detailed fashion.<sup>6</sup> One thing is clear. It is evident that the disease which was considered rare, subacute bacterial endocarditis, is now recognized as one of the common diseases. Of great interest is the change in our point of view. It was supposed to be a practically uniformly fatal disease. Now we are observing more and more partial or complete recoveries. We find that very mild cases exist, and that there is a recurrent form of the disease. In other words, the interest is shifted toward the question of healing. It will be of the greatest value if an active campaign is undertaken for the purpose of preventing this as well as other forms of endocarditis.

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6. References to the older literature will be found in earlier papers. The later literature will be given in subsequent publications.

**Empiricism and Rationalism in Therapy.**—Empiricism may be defined as the employment of a remedy of whose actions we are ignorant for a disease whose nature we do not understand. Rational or scientific treatment means, on the other hand, the recognition of the symptoms of ill health, with a knowledge of their mechanism and prognostic significance, and the employment of a remedy whose action on the sick human body we know and understand.—Sir James Mackenzie, *Brit. J. Tuberc.* 17:15 (Jan.) 1923.

## STUDIES IN FAMILIAL NEUROSYPHILIS

### II. FAMILIAL NEUROSYPHILIS FROM VARIOUS EXTRA-FAMILIAL SOURCES: A CLINICAL CONTRIBUTION TO THE QUESTION OF NEUROTROPISM \*

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In the first paper of this series,<sup>1</sup> we reviewed the question of conjugal neurosyphilis, and reported examinations of the fifty-two marital partners of fifty neurosyphilitic patients. The results were discussed from the standpoint of their applicability to the hypothetical existence of a strain of *Spirochaeta pallida* having a selective affinity for the central nervous system. Conjugal neurosyphilis was observed in twenty-one, or 52.5 per cent., of the forty partners in whom syphilis could be demonstrated, this incidence being much greater in the partners of paretics and tabetics than in those of cerebrospinal (meningovascular) neurosyphilitics. This variation, together with other facts, led us to conclude that from this type of clinical study alone a definite decision as to duality of strain could not as yet be reached.

To the proponents of neurotropism, the high incidence of conjugal neurosyphilis, both partners having been infected with the same strain of organism, as well as the occasional development of neurosyphilis in several persons infected from a common source, provides a substantial clinical basis for the hypothesis. That a neurotropic strain of organism cannot be the only factor, or necessarily the most important one, in the origin of neurosyphilis is illustrated by the families to be reported in this paper, since several members, each acquiring syphilis from a separate source, all developed neurosyphilis.

#### REPORT OF CASES

**FAMILY 1.**—Elder brother infected with syphilis in 1914 at 29; lapsing treatment; in 1917, asymptomatic neurosyphilis; "cure" by adequate treatment; remains well in 1923. Younger brother contracted syphilis in 1910, at 20; in 1920, general paresis.

The elder brother, aged 29, was seen in January, 1914, with primary and secondary syphilis of eight weeks' duration. There was a fairly profuse maculopapular rash, polyadenitis and the scar of the healed chancre. During 1914 and 1915, he received only three doses of arsphenamin. About four months after the onset of the infection, he began to suffer with severe headache, lasting continuously for periods of a week or more, a drowsy feeling and burning sensations over the skin. He disappeared from observation until July, 1917, at which time a spinal puncture was performed. This showed 32 cells, globulin + + +, Wassermann reaction positive with 0.2 c.c., and a colloidal gold curve reading 4333321000. The blood Wassermann reaction also was positive. Neurologic examination disclosed nothing of importance.

This patient's younger brother was admitted in July, 1920, at the age of 30. In 1910, when 20 years old, he contracted a chancre which was treated with two injections of arsphenamin, and was not followed by any secondary symptoms. He had remained well until ten days before admission, when

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1. Moore, J. E., and Keidel, Albert: Studies in Familial Neurosyphilis, I, Conjugal Neurosyphilis, *J. A. M. A.* 77:1 (July 2) 1921.



he suddenly fell unconscious. Since then he had been very nervous, trembling and twitching constantly. His wife had noticed that his speech was thick. Examination revealed anisocoria; the pupils reacted sluggishly to direct light, but failed to react consensually; there were coarse tremor of the lips and tongue, markedly exaggerated deep reflexes, speech defect, date discrepancies, euphoria, a belligerent manner, and lack of insight. The blood Wassermann reaction was positive; the spinal fluid showed 112 cells, globulin + + + +, Wassermann reaction positive with 0.1 c.c. of fluid, and paretic colloidal gold and mastic curves. The diagnosis was general paresis.

**FAMILY 2.—Colored.** Father, aged 50, contracted syphilis in 1900, two years after birth of youngest son. In 1920, neurosyphilis with partial bilateral eighth nerve deafness. Eldest son, aged 28, infected from a different source in 1915. In 1920, neurosyphilis with probable partial unilateral eighth nerve deafness, positive spinal fluid. Youngest son, aged 20, at admission in 1918, had secondary syphilis. Two and one-half years later, asymptomatic neurosyphilis.

The father was 50 years old at the time of admission in 1920. At 30, eight years after the birth of his eldest son, and two years after that of the youngest son, he developed a phallic sore, which was hard and painless, and for which he received only local treatment. No recognizable secondaries followed. The entrance of syphilis into the family is well marked by the occurrence of two miscarriages following the last healthy child. Three years before admission (seventeen years after infection) the patient had a severe sore throat lasting several months, and since that time he has been hoarse. For the last three or four years, he has had severe headaches; for two years marked tinnitus in the right ear, and for the past year vertigo, a definite impairment of hearing on the right, a sense of formication on the scalp, and a sense of a constricting band about the head.

Physical examination revealed contracted pupils, which, however, reacted promptly to light and accommodation. There was partial inner ear deafness on both sides, involving both the cochlear and the vestibular branches, and more marked on the right. A large, ragged perforation was present in the soft palate, with scarring and destruction of the right anterior pillar. The lymphatic glandular groups were all easily palpable. There were two scars on the glans penis. The deep reflexes were normally active. The blood Wassermann reaction was negative; the spinal fluid showed 3 cells, a weakly positive globulin test, Wassermann reaction negative with 1 c.c. of fluid, and negative colloidal gold and mastic curves. Nevertheless, the physical evidence permitted the diagnosis of a healed gumma of the soft palate, and partial bilateral eighth nerve paralysis.

The eldest son, aged 28, was born eight years before his father contracted syphilis. About five years before admission in 1920, a sore on the penis developed, which was followed in about six months by a generally distributed non-itching rash, but no other secondary symptoms. Coincidentally with the rash, there appeared a "gnawing" sensation in the left ear with increasing deafness on this side, both of which conditions have persisted.

Physical examination disclosed normal pupillary reactions, a probable partial destruction of the cochlear and vestibular branches of the left eighth nerve (otologic examination was unfortunately incomplete), and sluggish deep reflexes. The blood Wassermann reaction was positive; the cerebrospinal fluid showed 270 cells, globulin + + + +, Wassermann reaction negative with 1 c.c., and a paretic mastic curve. The diagnosis of neurosyphilis with unilateral eighth nerve deafness was permissible.

The youngest son, aged 20, first seen in June, 1918, had had a sore on the penis four months previously, which was

not treated. About two months later, he developed lesions about the anus, which caused pain on walking. Examination at this time revealed numerous characteristic papulo-erosive lesions of the buccal mucosa, a marked visible polyadenitis, the inguinal groups being especially large, and numerous typical condylomas about the anus. On the shaft of the penis there were three or four indurated papules of a secondary type, though the rest of the skin was clear. The initial lesion was hidden by phimosis.

During 1918, he received four doses of arsphenamin, 0.3 gm. each, at irregular intervals. The positive blood Wassermann reaction was reduced to negative by the first injection.

A lapse of two years and seven months occurred before the patient's next visit, in March, 1921. At this time physical examination and the blood Wassermann reaction were both negative, and the patient was free from complaints. A spinal puncture performed as a routine disclosed 2 cells, globulin + +, Wassermann reaction negative with 1 c.c., a colloidal gold curve reading 3332+210000, and a colloidal mastic of 3221000000. The diagnosis of asymptomatic neurosyphilis is apparent.

**FAMILY 3.—Father, senile psychosis.** Eldest son acquired syphilis in 1892; *tabes dorsalis* with Charcot hip in 1920. Third son, chancre in 1904; died of taboparesis in 1917. Youngest son, chancre in 1896, taboparesis in 1922. First cousin of these brothers, chancre in 1900, paranoid psychosis in 1912, asymptomatic neurosyphilis (?).

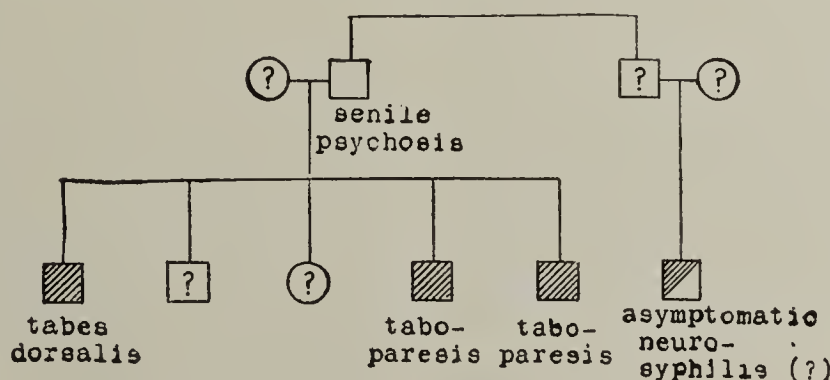
The father of this remarkable fraternity died at 82 of senility, having had two attacks of a senile delirium before death. He had four sons and a daughter. The second son and the daughter are, as far as is known, well.

The eldest son, seen in 1920, at the age of 53, developed a phallic lesion in 1892, which was diagnosed as a hard chancre by a competent physician, and treated with mercury intermittently for several years. On admission, his complaints dated back fifteen years to 1905, when he began to suffer with sharp shooting pains in the legs, radiating from hip to heel.

During the last year these had grown much worse, and for two months had been almost unbearable. Three weeks before admission there was swelling of the right leg below the knee, and the knee became stiff. Prior to this he had noticed no difficulty in walking. Physical examination revealed equal, irregular pupils, reacting sluggishly and slightly to light; absent knee and ankle jerks; diminution of deep reflexes of the left arm; marked ataxia of the lower and slight of the upper extremities; right Charcot hip confirmed by roentgenoscopy, and a dilated aorta. The blood Wassermann reaction was negative; examination of the spinal fluid revealed 12 cells, globulin + +, Wassermann reaction positive with 1 c.c. of fluid, and negative colloidal tests. The diagnosis was *tabes dorsalis* and Charcot hip.

In 1904, the third son, when 33 years old, contracted a chancre, which was followed in six weeks by typical secondary lesions. He was treated with mercury by rubs, intramuscular injections, and by mouth for eighteen months. For about four years before his admission in 1916, he had suffered with ataxia, lightning pains, and gastric crises. The physical evidence of neurosyphilis in 1916 consisted of irregular, contracted pupils, barely reacting to light; absent knee and ankle jerks; ataxia; speech and memory defect; delusions of grandeur; tremor, and lack of insight. The blood Wassermann reaction was positive; examination of the spinal fluid disclosed 58 cells, globulin + + + +, Wassermann reaction positive with 0.1 c.c. of fluid, and a paretic colloidal gold curve. In spite of fairly energetic treatment, the patient died in 1917 of taboparesis.

The youngest son was infected with syphilis at the age of 20, in 1896. The diagnosis was made by the same physician who had treated the other two brothers. Internal treatment with mercury was given for some months. In 1912 he



Neurosyphilis in Family 3.



had a lesion of the right testis and epididymis, diagnosed as tuberculous and removed by castration. The blood Wassermann reaction at this time was negative. This patient was first seen by us in September, 1922. He is said to have been acting peculiarly for some months, and his normal elder brother, knowing that he had had syphilis, persuaded him to submit to examination. This revealed unequal, irregular pupils, reacting sluggishly and slightly to light; the deep arm reflexes were present but the triceps particularly was sluggish; the patellar and ankle reflexes were absent, even on reinforcement; there was a positive Romberg sign. The blood Wassermann reaction was positive; the spinal fluid showed 146 cells, globulin ++++, Wassermann reaction positive with 0.2 c.c. of fluid, and a colloidal gold curve reading 5554331000. The clinical diagnosis was taboparesis.

The first cousin of these three brothers also contracted syphilis in 1900, when 23 years old. His treatment was similar to that of the others. In 1912 he developed a paranoid psychosis necessitating institutional care. At this time, he showed physically no evidence of neurosyphilis except markedly exaggerated deep reflexes, but a study of his spinal fluid revealed 2 cells, globulin +, Wassermann reaction negative, and a colloidal gold curve of the syphilitic zone type. The diagnosis of asymptomatic neurosyphilis on this evidence is questionable. No details as to the subsequent course are available.

#### COMMENT

All the affected members of these three families are known to have been infected, not only at widely separated dates, but from different sources; yet in Family 1 two brothers showed evidence of central nervous system syphilis; in Family 2, the father and eldest son, infected at an interval of fifteen years, both developed eighth nerve deafness, and the youngest son asymptomatic neurosyphilis; and in Family 3, three brothers (possibly also a cousin) developed neurosyphilis, two of them taboparesis, one tabes dorsalis. Such an occurrence can best be explained on the basis of familial predisposition.

Reports similar to this are much less frequent in the literature than those dealing with conjugal neurosyphilis. An incomplete search, however, reveals two articles, by Strohmayer<sup>2</sup> and Burrow.<sup>3</sup> The first named reports the development of tabes dorsalis in two sisters with a diabetic and neuropathic ancestry. Burrow's family includes four certain cases of tabes and an additional probable one, among six members of a fraternity, all having acquired syphilis from different sources. The older literature contains many articles dealing with the question of predisposition and the inheritance of a tendency to develop neurosyphilis, a typical example being the paper by Näcke.<sup>4</sup> In general, however, the older investigators attempted only to show the existence of a familial neuropathic taint. Actual reports of several cases of neurosyphilis (other than congenital neurosyphilis) in a single family are lacking.

It is obvious from this report that the factor of personal, familial or racial predisposition to nervous system damage may, as pointed out by Nichols,<sup>5</sup> influence the course of events in syphilis. Partly for this reason the clinical data in favor of syphilis à virus nerveux are as yet insufficient to permit of a definite decision. Levaditi and Marie<sup>6</sup> have attempted to

solve the problem from the experimental standpoint. They inoculated rabbits with a strain of organism said to have been obtained from the blood of a parietic (neurotropic virus), and compared this strain with a strain of spirochete obtained from a chancre (dermotropic virus); they noted wide differences in incubation period and in the macroscopic and microscopic appearance of the lesions. Cross-inoculations with their two strains were possible, and while the dermatropic strain retained its virulence for the human being in spite of years of animal passage, the neurotropic strain was shown to be avirulent for man. These results are open to two grave criticisms: (1) that the differences observed in the two strains are those to be found between any recently isolated strain of spirochete and one which has been carried in the animal for years; or (2) more likely, as is pointed out by Jahnel,<sup>7</sup> their neurotropic strain probably is *Treponema cuniculi* (*Spirochaeta paraluis-cuniculi*) the organism of spontaneous venereal spirochetosis in rabbits.<sup>8</sup> All of the peculiarities shown by the neurotropic strain of Levaditi and Marie have also been observed with *Treponema cuniculi*. These criticisms must be met by more detailed and careful experimentation before an answer can be reached.

#### SUMMARY AND CONCLUSIONS

1. In three families, of which two contained three members each, and one two members, who all acquired syphilis from different sources and at different dates, all developed neurosyphilis.

2. This occurrence can best be explained on the basis of familial predisposition.

3. The clinical and experimental evidence now available does not settle the question as to the existence of a neurotropic strain of *Spirochaeta pallida*.

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#### RELATIVE VALUE OF SURGERY AND ROENTGEN RAY IN THE TREATMENT OF HYPERTHYROIDISM\*

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Diseases of the thyroid gland are of interest to many branches of the medical profession. Aside from their great importance in clinical medicine, much remains to be learned about them from a physiologic and pathologic point of view. Not only is the thyroid frequently the seat of local changes, but through variation in its activity it exerts a profound effect on the organism as a whole. We may, therefore, logically classify cases of thyroid disease on two different bases: the basis of function and that of pathologic changes in the gland itself. On the first basis we may group them according to the activity of the thyroid, which may be excessive, normal or reduced, and, on the second, according to various histologic changes, of which the chief are hypertrophy and hyperplasia, the deposition of colloid, the presence of adenomas, of malignancy or

2. Strohmayer, W.: Familiäre Tabes auf erblich-degenerativer Grundlage, Neurol. Zentralbl. 26: 754, 1907.

3. Burrow, J. L.: Familial Tabes Dorsalis, J. Neurol. & Psychopath. 1: 246 (Nov.) 1920.

4. Näcke, P.: Erblichkeit und Prädisposition resp. Degeneration bei der progressiven Paralyse der Irren, Arch. f. Psychiat. u. Nervenkr. 41: 295, 1906.

5. Nichols, H. J.: Observations on a Strain of Spirochaeta Pallida Isolated from the Nervous System, J. Exper. Med. 19: 362, 1914.

6. Levaditi, C., and Marie, A.: Etudes sur le tréponème de la paralysie générale, Ann. de l'Inst. Pasteur 33: 741, 1919.

7. Jahnel, F.: Das Problem der progressiven Paralyse, Ztschr. f. d. ges. Neurol. u. Psychiat. 76: 166, 1922.

8. Noguchi, Hideyo: Venereal Spirochetosis in American Rabbits, J. Exper. Med. 35: 391 (March) 1922.

\* Read before the Southern Surgical Association, Dec. 12, 1922.

\* From the surgical service, the roentgen-ray department and the medical laboratories of the Massachusetts General Hospital. The metabolism studies were aided in part by a gift from Dr. William Norton Bullard.



of inflammation. Combining these two aspects of thyroid disease into one comprehensive system, which will satisfy both clinical and pathologic demands, is not simple. For the present we are interested solely in those cases of thyroid disease which show evidence of an associated constitutional disturbance, apparently due to a toxemia. While as yet there is no conclusive scientific proof of the cause of these symptoms, they are best explained in the main by an increased output of the active principle of the thyroid gland, thyroxin,<sup>1</sup> which apparently acts to stimulate oxidative processes throughout the body. This hypothesis, which associates evidence of toxemia with an increased activity of the thyroid, is accepted for the purposes of this paper, as being the best in accord with clinical observation.

Clinically, the determination of the basal metabolic rate gives us the relation of these increased oxidative changes to a normal standard. The degree of elevation of the basal metabolism enables us to approximate the extent of the thyroid activity. Increased basal metabolism is not only an essential concomitant to the diagnosis of increased thyroid function, but also the most accurate single measure by which to judge the progress of the disease and note the effect of treatment. It is not in itself a measure of the degree of operative risk in a given case, but it is an important factor to be taken into consideration with the clinical aspects.

Persistent increase of thyroid activity occurs, with rare exceptions, in conjunction with two types of changes in the thyroid gland, one a diffuse hypertrophy (hyperplasia), and the other an adenomatous change.<sup>2</sup> Associated with these two pathologic changes are two clinical types of disease. The first type is exophthalmic goiter, the second, adenomatous goiter with hyperthyroidism. For the clear recognition of the second type we are indebted to Plummer.<sup>3</sup> It differs clinically from exophthalmic goiter in developing at a somewhat greater average age in patients who have had a pre-existing goiter for many years, in the absence of eye signs, and in the somewhat less intense nervous symptoms. It occurs in from 17 to 20 per cent. of the cases of adenomatous goiter in which resection was done at the Mayo Clinic.<sup>2</sup> For the constitutional disturbance associated with these two types of thyroid disease, hyperthyroidism is used as a convenient term, although it implies an assumption in regard to etiology not completely proved.

#### FORMS OF TREATMENT

In the present stage of the treatment of hyperthyroidism, the most effective measures aim at a partial destruction of the thyroid gland. Of these measures the ones that now appear to yield the best results are surgery and irradiation. Neither is a new form of treatment. Reports of the therapeutic use of the roentgen ray in exophthalmic goiter have appeared in the literature since 1905. In the Massachusetts General Hospital, a series of cases of hyperthyroidism treated by the roentgen ray was begun by Holmes in 1914. These results of the treatment were reported by Holmes and Merrill<sup>4</sup> in 1919. From the same clinic, Means and Aub,<sup>5</sup> using the basal metabolism as an index of

intoxication in exophthalmic goiter, compared the effect of treatment by roentgen ray and by surgery.

Previous to the latter part of 1919, patients with hyperthyroidism coming to the Massachusetts General Hospital were treated, some by surgery and some by roentgen ray, without close cooperation between the two departments, and in occasional instances without detailed study by the medical services. For this reason it seemed wise to coordinate the efforts of the hospital. To this end, in October, 1919, a committee composed of two representatives from the medical, one from the roentgen-ray and three from the surgical services was formed which would have charge of the study and in most instances of the treatment of cases of thyroid disease. The present paper is based on cases studied and treated by the thyroid committee.<sup>6</sup> The conclusions drawn from the cases are my personal conclusions, and not those of the committee.

The results obtained in hyperthyroidism by irradiation with the roentgen ray was felt by the committee to be sufficiently encouraging to justify a continuation of this form of treatment in selected cases. At the same time the committee believes that roentgen-ray treatment should be limited, as stated by Holmes and Merrill,<sup>4</sup> to cases which show symptoms apparently due to increased function of the gland, such as increased metabolic rate, rapid heart action, nervousness, loss of weight and weakness. Goiters with normal or reduced function, requiring treatment for deformity, pressure on adjacent structures, potential malignancy, or potential hyperthyroidism, should be treated by surgery and not by roentgen ray. The only exception to this is in malignant goiter beyond reasonable hope of benefit from operation. Here the roentgen ray has an important rôle. Beyond this, the roentgen ray is not a treatment for goiter; it is a treatment for hyperthyroidism.

On what evidence should a diagnosis of hyperthyroidism be based? Persistent increase in the basal metabolic rate is considered necessary to confirm the usual clinical evidence in the diagnosis of hyperthyroidism. On the other hand, a basal metabolism consistently within normal limits should exclude hyperthyroidism. The only condition that would justify roentgen-ray treatment at all is obvious hyperthyroidism confirmed by increase in basal metabolism, or persistent and clearly marked increase of basal metabolism in a patient suggesting thyroid disease, who showed on careful study no other cause for increased metabolic rate.

Beyond accurate diagnosis there are certain other essential conditions without which roentgen-ray treatment should not be undertaken. The first is adequate modern roentgen-ray equipment, with ability to measure dosage. The second is means of estimating the degree of benefit obtained by determination of the basal metabolism as well as by clinical observation. Without this, a slight degree of persistent hyperthyroidism demanding further treatment may be continued when there is danger of myxedema. The third is careful and accurate clinical supervision. An open mind should be kept in regard to switching to surgical treatment, if improvement is not rapid and complete.

If these conditions are fulfilled, as I believe they have been in cases treated through the Massachusetts General Hospital thyroid clinic, what are the probabili-

1. Kendall, E. C.: *Tr. A. Am. Phys.*, 1915, p. 420.

2. Plummer, H. S.: *Oxford Medicine* 3: 839.

3. Plummer, H. S.: *The Clinical and Pathologic Relationships of Hyperplastic and Nonhyperplastic Goiter*, *J. A. M. A.* 61: 650 (Aug. 30) 1913.

4. Holmes, G. W., and Merrill, A. S.: *The Treatment of Thyrotoxicosis by Means of Roentgen Ray*, *J. A. M. A.* 73: 1693 (Nov. 29) 1919.

5. Means, J. H., and Aub, J. C.: *A Study of Exophthalmic Goiter from the Point of View of the Basal Metabolism*, *J. A. M. A.* 69: 33 (July 7) 1917; *Basal Metabolism in Exophthalmic Goiter*, *Arch. Int. Med.* 24: 645 (Dec.) 1919.

6. Dr. C. A. Porter, who supplied much of the surgical material, Dr. G. W. Holmes, Dr. J. H. Means, Dr. Malcolm Seymour and Dr. A. W. Allen.



ties of "cure" by the roentgen ray in selected cases? This necessitates a definition of "cure." When, as suggested by Dr. C. A. Porter, the basal metabolism is reduced permanently to within normal limits, we have done all that is possible by surgery or, possibly, by the roentgen ray, to produce a "cure." This does not necessarily mean that a roentgen-ray "cure" is as good as a surgical "cure." In either case, permanent organic change may have occurred which is beyond benefit, or symptoms from the underlying unknown cause of exophthalmic goiter, or from changes in the quality of the thyroid secretion may persist. It is hopeless to expect that surgery or the roentgen ray will relieve permanent organic damage caused by the disease. These patients as a group are likely to represent inferior risks during life. Permanent reduction of the metabolism to within normal limits is ordinarily accompanied by marked improvement, subjective and objective, and in this sense "cure" is used.

Means and Holmes<sup>7</sup> state that in a recent series of fifty-eight cases of hyperthyroidism treated by the roentgen ray, forty-four cases were exophthalmic

goiters show either recovery or improvement coincident with the treatment, and that in exophthalmic goiter, if good results are not secured with the roentgen ray in a few months, surgery should be employed.

In comparison with the foregoing series of cases treated by the roentgen ray, I have charted the metabolism, pulse and weight in thirty consecutive cases in which surgical treatment has been completed. The numerous metabolism determinations have been made under the direction of Dr. J. H. Means, to whom I am indebted for permission to use them. Complete surgical treatment is considered to consist of subtotal thyroidectomy, or the removal of the whole gland except an amount which, in the surgeon's judgment, is necessary to maintain normal thyroid function, usually consisting of the inner posterior portion of both lobes. Except in mild cases, this result is obtained by a series of graded operations. While ligation of the thyroid arteries, or hemithyroidectomy, is occasionally curative, these operations ordinarily represent only a stage which the patient passes through on the way to a subtotal thyroidectomy, and it is manifestly unfair to judge surgery by the results from these partial operations.

Of the thirty cases of subtotal thyroidectomy, twenty-five, or 85 per cent., showed a drop in metabolism to +15 or less when last observed. Four cases with an average metabolism of 69 per cent. still showed evidence of hyperthyroidism, although clinically greatly improved, presumably because the surgeon failed to estimate correctly the amount of gland which should be removed to restore metabolism to within normal limits. In one mild case there has been hypertrophy of part of the remaining thyroid tissue, with return of symptoms, and the patient is now convalescing from removal of more of the gland.

An examination of Charts 1 and 2 will show that they are constructed on a similar plan. While both start out

with the maximum number of cases, only relatively few cases are followed throughout the whole period. The number of cases figuring at any time is shown by the figure above each ordinate. The starting point taken in the surgical cases has been the last metabolism determination before operation. The curves obtained are in no sense end-result curves; they approximate, however, the results obtained in each class of cases as a group.

A comparison of the composite chart of the cases treated by roentgen ray and those treated by thyroidectomy shows that the average results in all cases treated by subtotal thyroidectomy are better than the results in a selected two thirds of the cases treated by roentgen ray. The metabolism shows a drop to about +10, as compared with +20 for the roentgen-ray cases; the pulse, a drop to 80, as compared with 90; the weight, a tendency to more persistent and greater increase. The rate of fall in metabolism and pulse is about equal in the two charts. The reason for this is that in certain of the patients who underwent ligation of both superior thyroid arteries, followed by thyroidectomy in two stages, the whole of the surgical treatment required four months, and in one case eight months for completion. For comparison, a composite chart of nine cases treated

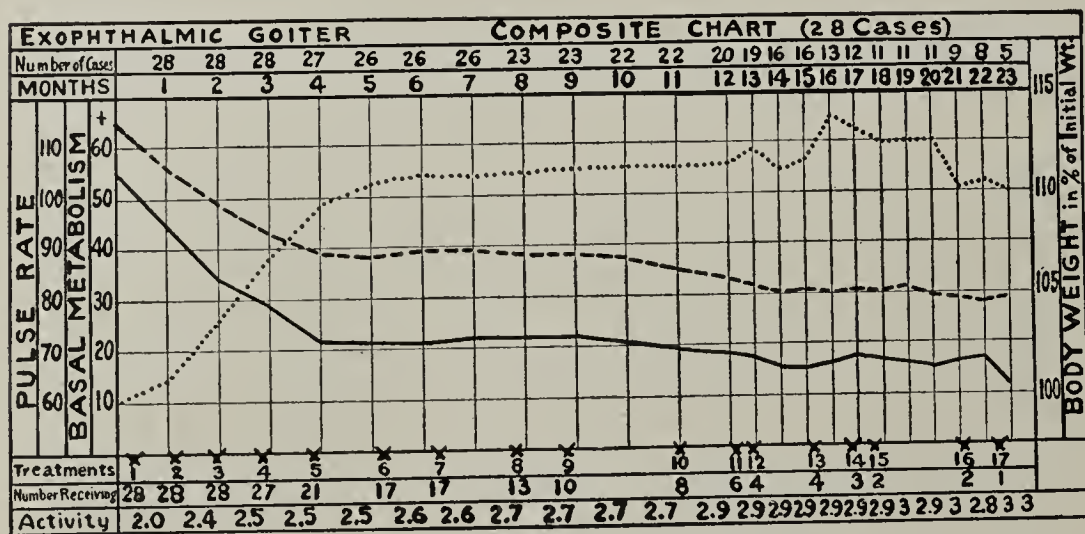


Chart 1 (from Means and Holmes).—In this and the accompanying charts, the solid black line denotes metabolism, the interrupted line pulse, and the dotted line weight. In this chart, X indicates roentgen-ray treatments, the figure below giving the number of that particular treatment. Under activity is indicated the magnitude of the rest factor. Three grades of activity have been arbitrarily selected: 1, complete rest in bed; 2, patient not in bed, but doing no work; 3, patient working or following usual mode of life. In the composite the averages of the individual activity figures are shown for each month.

goiter, and fourteen were classed as toxic adenoma. Of the forty-four exophthalmic patients, thirteen were apparently cured, and fifteen were improved but not rendered entirely free from hyperthyroidism. Sixteen showed little or no improvement; eight of the latter came to operation and were permanently cured. None of the patients seemed to be made worse by the treatment. Two of the patients that improved were later operated on, and one of these died. This was the only death known. Of fourteen patients with toxic adenoma, all improved and five were cured. A composite chart of metabolism, pulse and weight curves of twenty-eight patients with exophthalmic goiter that improved under roentgen-ray treatment showed a maximum benefit during the first four months of treatment. This chart (Chart 1) is reproduced here by permission of the authors. No further significant drop in pulse or metabolic curves occurred in the next six months in spite of more treatments. In the second year there was a slight drop. They conclude that the roentgen ray probably has a beneficial effect in toxic goiters; that about two thirds of the patients with exophthalmic

7. Means, J. H., and Holmes, G. W.: Further Observations on the Roentgen-Ray Treatment of Toxic Goiter, Arch. Int. Med., to be published.



by immediate subtotal thyroidectomy in one stage is added. Here the sharp fall in metabolism and pulse and gain in weight is striking. There can be no doubt that the average results in surgery are better than those following roentgen-ray treatment.

#### RESULTS OF TREATMENT

In discussing these results, there are three questions of principal importance: 1. Is the improvement noted

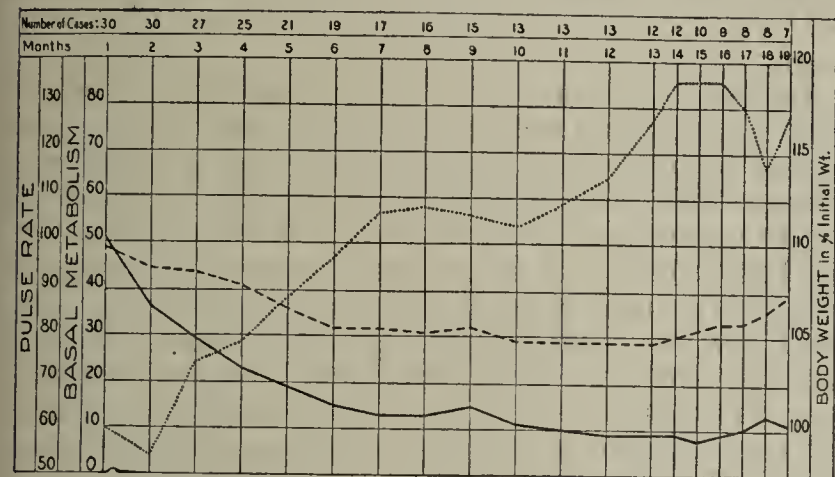


Chart 2.—Exophthalmic goiter composite chart, thirty consecutive cases, subtotal thyroidectomy: In this chart and Chart 3, the curves begin at the time of the first operative procedure; the averages used as a starting point are those obtained at the last metabolism determination before operation. This preceded operation by a variable period, which is not shown. The time in months should begin with zero, and not with one.

following roentgen-ray treatment due to fluctuation in the disease or to the treatment? 2. If the roentgen ray is used, what class of cases should it be used in? 3. If the results of surgery are better in general than those of the roentgen ray, why should the roentgen ray be used at all?

After seeing the cases treated by the roentgen ray, I have no hesitation in saying that I agree with Means and Holmes, and believe the improvement in the majority of instances at least due to the roentgen ray. In my opinion, the improvement coincident with the use of the roentgen ray is too sudden and striking to be accidental. In a few instances this is emphasized by a preliminary period of observation during which no change in the course of the disease occurred. In some cases the results of treatment are as brilliant as any I have seen by any therapeutic method. Nor is the improvement due to a long period of rest, as in the series of cases reported by Kessel, Lieb and Hyman.<sup>8</sup> While it has been thought desirable to carry out, when possible, a study of these cases in the hospital before instituting treatment, in the majority of cases there has been no marked change in the way of life. The average activity, as shown by Means and Holmes on Chart 1, has been between 2 and 3 on an arbitrary scale from 1 to 3, in which 1 represents rest in bed, 2, partial rest, in which the patient is up and about, but has rest periods and does not work, and 3, ordinary mode of life. If the roentgen ray were inert, we should expect patients to get worse as well as better. As a matter of fact, this has not occurred.

If the roentgen ray is effective in certain cases of goiter, is it possible to detect those cases in which it is likely to show good results? It has not proved possible to predict the effect of the roentgen ray in any given case. Means and Holmes<sup>7</sup> are unable to show that either the age of the patient or the intensity

of the hyperthyroidism, as shown by the level of the metabolism, is a factor determining the success or lack of success of roentgen-ray treatment. An impression that recent cases in young persons were more responsive to the treatment was not borne out by their statistical study. There are, however, certain cases in which the roentgen ray seems to me unsuitable. Among these are adenoma with hyperthyroidism. Here the cause of the symptoms seems to be within the thyroid gland, and not only is it logical to remove this cause surgically, but the late results of operation are better than in exophthalmic goiter. Judd<sup>9</sup> reports 83 per cent. of cases of adenoma with hyperthyroidism cured by surgery, as compared with 65.8 per cent. of patients with exophthalmic goiter. Another group of cases consists of those showing organic damage, particularly cardiac. In these cases I believe that the time consumed by roentgen-ray treatment may lead to further damage. These patients need certain relief from their toxemia. This can be assured only by surgery. A course of roentgen-ray treatment may leave us four or five months along, and no better off. If the roentgen ray is used in these cases, it should be as an adjuvant to the effect of preliminary ligation of the thyroid arteries.

The economic situation may have a bearing on the choice of the roentgen ray or surgery. For instance, a wage earner may well desire the most rapid and certain means of cure. On the other hand, for a mother with several young children, it may be advisable to try the safer course of a series of roentgen-ray treatments. In general, it can be said that the roentgen ray should not be used in any case in which a few months without relief is likely to be productive of definite damage, or in adenomatous goiter with hyperthyroidism, except in unusual instances. If it is used, a definite time-limit should be fixed which I think could well be set for four

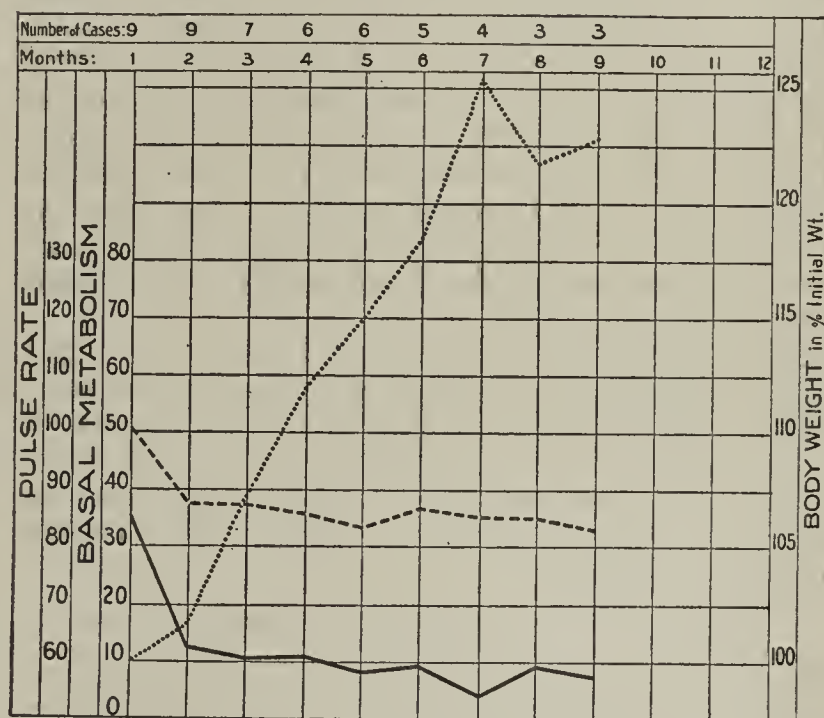


Chart 3.—Exophthalmic goiter composite chart, nine cases, subtotal thyroidectomy, one stage.

months, during which the patient usually receives five treatments. If a satisfactory response to the roentgen ray has not been secured by this time, operation should be undertaken.

If surgery is more effective in the average case, why should the roentgen ray be used at all? Surgery is a clumsy form of treatment for a gland that is hyper-

8. Kessel, Leo; Lieb, C. C., and Hyman, H. T.: A Study of Exophthalmic Goiter and the Involuntary Nervous System, *J. A. M. A.* 79: 1213 (Oct 7) 1922.

9. Judd, E. S.: *Ann. Surg.* 72: 145 (Aug.) 1920.



active. In exophthalmic goiter, the ultimate cause of the disease is unknown. By removing part of the gland we are not affecting the cause; we are merely removing part of a gland that is excited to hyperfunction. The changes accompanying hyperfunction are still present in the part of the gland that remains. The amount of the gland left to maintain thyroid function is purely a guess on the part of the operator. When surgery can accomplish safely removal of a proper proportion of the gland, it has reached its limit. The roentgen ray, on the other hand, while also acting as a destructive physical agent, has nevertheless the possibility of indefinite expansion as a means of treatment. Improvements in technic and manner of application may lead to results as yet unobtained. It shows sufficient promise to be given opportunity.

Certain minor advantages have been claimed for roentgen-ray treatment. These are absence of operative scar, sparing the patient the distress and discomfort of going through operative procedures, and the fact that hospitalization may not be necessary. Although these advantages loom large in the minds of patients, hyperthyroidism is a sufficiently serious condition in its immediate and remote effects to make these advantages deserving of slight consideration in advising treatment.

The chief advantage of the roentgen ray is that its immediate mortality is nil. The use of the roentgen ray in our clinic is undoubtedly influenced by the fact that the mortality in the cases of hyperthyroidism treated surgically since the organization of the thyroid committee has been 7.1 per cent. There have been five deaths among seventy patients, in some of whom the surgical program is as yet incomplete. The surgical aspects will be presented later in detail. While the mortality from surgery reported from certain large clinics is small, this would probably not be true of small series and isolated cases compiled throughout the country. The stage of gaining experience in this condition is likely always to result in mortality. It must be remembered that mortality is often figured from the number of operations, not from the number of patients treated, and that figures may combine toxic and nontoxic cases. It has been said that recommending the roentgen ray has done harm. It is also true that unqualifiedly recommending operation on the diagnosis of exophthalmic goiter may do harm.

The roentgen ray will accomplish the "cure" of a certain percentage of cases. In others it will bring about a degree of improvement that will permit of safer operation, or make unnecessary some of the preliminary operative steps. It is another weapon in the treatment of hyperthyroidism. The question is how and when to use it.

#### OBJECTIONS TO ROENTGEN-RAY TREATMENT

Many objections have been raised to roentgen-ray treatment. The chief of these is the temporary relief afforded. While it is true that in certain cases there is a tendency for the metabolism to rise after a period within normal limits, these are a small minority. In these, as a rule, roentgen-ray treatment results in a second drop, to the normal metabolic level. On the whole, the results in cases brought to within normal metabolic limits seem to me satisfactory.

A second objection is the occurrence of myxedema. Means and Holmes<sup>7</sup> report that since the beginning of the roentgen-ray treatment at the Massachusetts General Hospital, four patients have developed myxe-

dema. Two developed it within the first four months of roentgen-ray treatment. In both, the depression of metabolism proved temporary. One patient developed myxedema eighteen months after roentgen-ray treatment; another, five years after. Whether in these cases there is any actual connection between the treatment and the myxedema is uncertain. It seems to me that the danger of myxedema following controlled roentgen-ray treatment is more than balanced by the possibility of recurrent laryngeal nerve injury, particularly bilateral abductor paralysis, or parathyroid injury, following surgery.

Another objection is the increased difficulty of operation following the use of the roentgen ray. The cases coming to operation in this clinic after roentgen-ray treatment have been treated here. They have been as a rule exophthalmic cases; if toxic adenomas, the goiter has been small. In these cases there has been no appreciable increase in difficulty of operation. The gland has not been adherent to the anterior muscles. The only change I have noted has been a somewhat firm consistency to the gland, and possibly a slight increase in fixation posteriorly. The increased operative difficulty has been no more than that after preliminary ligation.

A fourth objection is the time required for roentgen-ray treatment. If the cases are carefully selected and the treatment is strictly limited to four months, this is not of great importance, compared with the possible benefit. It is not longer than the period that may be required for a graded series of preliminary operations.

My personal objections to roentgen-ray treatment are somewhat different. In the first place I cannot help fearing remote ill effects from so powerful and so little understood a physical agent. It can only be said that these as yet have not developed. Further, the suggestion of an alternative form of treatment, surgery or roentgen ray, lessens the authority of the clinic. It is hard under these conditions at times to carry out surgical procedures when they become advisable.

I have no quarrel with the cases apparently cured by the roentgen ray. These results seem to me sufficiently good. Nor am I troubled by the cases in which the roentgen ray frankly fails. These patients have lost time and have been put to trouble and expense, but they are willing to undergo operation, and the ultimate results are likely to be good. The patients improved, but not cured, seem to me a serious objection. They are sufficiently benefited to feel reasonably well and carry on their normal life and work with fair comfort. Still, they are distinctly and recognizably thyrotoxic. Basal metabolism may show a persistent elevation of from 15 to 25 points. Not infrequently they may present bizarre forms of hyperthyroid abnormality. In some cases the picture may be so close to normal that it is difficult to say whether operation is advisable or not. In other cases, thyroidectomy may be clearly indicated. But these patients are likely to refuse surgery. Here is the real objection. The patients recognize their great improvement, and since they are able to live and work in relative comfort, they do not wish to undergo operation. The ultimate fate of these patients is as yet uncertain. My feeling is that they go on receiving organic damage, and that their life and usefulness is shorter than it would be from the more complete cure possible by surgery.

A fourth class of cases, of no significance in determining the value of roentgen-ray treatment, is nevertheless of practical importance. These are the patients



that start roentgen-ray treatment and for one reason or another abandon it. It is true that many of these patients receive adequate surgical treatment elsewhere. Some undoubtedly do not, and in them the disease may progress without any adequate measures of relief. The fate of these patients is beyond the control of the clinic; a responsibility is assumed in regard to them which, through their own fault, cannot be fulfilled. It is possible that surgery might have been refused. At the same time a definite surgical program, once started on, is less likely to be abandoned.

It should be appreciated that there is no less responsibility in advising roentgen-ray treatment than in advising operation. The ill effects of the roentgen ray are more remote, and require more imagination to grasp. It should not be advised as a way of postponing a difficult decision on account of its lack of immediate danger. The man in charge of roentgen-ray treatment, like any other therapist, is likely to see little but good from his efforts. Some results are brilliant. Many other patients are much improved. The failures are likely to be operated on, or to drift away; in either case they disappear from the clinic. The harm that needs to be visualized comes, I believe, to these improved patients, through damaging effects of a slight persistent hyperthyroidism. The stage of improvement without "cure" I believe to be the serious phase of roentgen-ray treatment; it should constantly be borne in mind.

If roentgen-ray treatment is advised at all, it should be with the clear understanding that it will be tried for only a few months; that relief is uncertain; that, if improvement is not sufficient at the end of that time, operation must be undertaken. The patient should know that operation will eventually be advisable more often than not.

#### CONCLUSIONS

1. Subtotal thyroidectomy is a more effective form of treatment of exophthalmic goiter than roentgen-ray treatment.

2. The roentgen ray has a beneficial effect in certain cases of hyperthyroidism.

3. This effect is not sufficiently constant to be relied on as the sole form of treatment. In selected cases of exophthalmic goiter, the use of roentgen-ray treatment under careful control is justifiable for a period of four months, during which the patient receives about five treatments.

4. If, after four months of treatment, the degree of improvement obtained in general condition and basal metabolic rate does not promise "cure," operation should be undertaken.

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**Investigations of Canned Meats.**—A report on the bacteriology of canned meat and fish prepared by the food investigation board of Great Britain, recently issued, represents the first comprehensive study which has been made in that country of the bacteriology of canned food products. The board made a detailed examination of 323 cans of food, 246 of which were rejected. The most striking fact in the report is the nonsterility of cans which were externally sound. Less than 30 per cent. of these cans when examined were sterile; the percentage not sterile ranged from 36 for sardines to 100 for crab. Of canned meat, 63.6 per cent. of the cans were not sterile. This report, the *Lancet* states, gives the death blow to the generally accepted conclusion that canned foods remain good because the processes of preservation by heat have sterilized them.

## RENAL GLYCOSURIA

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The advent of blood sugar studies made it possible to divide glycosurias into two general classes: (1) glycosuria with hyperglycemia and usually accompanied by symptoms, and (2) glycosuria with normal blood sugar, and no symptoms. The latter class comprises the so-called renal glycosurias. These glycosurias are usually discovered quite accidentally; they have normal or subnormal blood sugar findings; they are relatively independent of the carbohydrate intake, and they are without symptoms of diabetes mellitus. In some cases, however, the glycosurias disappear on a diet containing small amounts of carbohydrate or carbohydrate-free diets.

The renal glycosurias have of late aroused a great deal of interest because of their obscure etiology, relation to diabetes mellitus and ultimate prognosis. The commonly accepted theory is that renal glycosuria is due to a lowering of the kidney threshold for glucose, caused by an increase in the permeability of the kidney epithelium. This explanation has become so common that authorities talk about kidney permeability, glucose threshold, and the like as if these were well established facts. The vague labeling of unknown conditions is well expressed in a recent editorial in *THE JOURNAL*:<sup>1</sup>

Why the "permeability" of the kidneys for sugar should hinge upon a definite concentration of the carbohydrate in the blood has never been clearly explained except by fantastic analogies; nor has it been clear why the renal threshold should "shift" under varying physiologic or pathologic conditions. In current discussions of sugar metabolism, the authorities have been wont to speak glibly of sugar "assimilation," "tolerance," "thresholds," and the like, without offering any really clear explanation of precisely what is meant.

This being the status of affairs, it is desirable to report another case that may possibly throw light on the etiology of renal glycosurias. The case here reported pertains to myself and presents a study over six years.

#### REPORT OF CASE

In 1916, I happened to discover 0.5 per cent. glucose in my urine. My instructor in physiologic chemistry thought that the glycosuria was due to an excessive intake of carbohydrate. The discovery the next day of 0.2 per cent. glucose following ingestion of a glass of milk and one slice of bread soon disproved the assumption, and led me to seek medical advice. My physician assured me of the harmless nature of the glycosuria, and advised me to determine my carbohydrate tolerance. Daily reductions of the carbohydrate amounts had no effect on the glycosuria until I reached about 30 gm. of carbohydrate in the form of starch. Any amount above 30 gm. would invariably cause glycosuria. At no time before or after the discovery of glucose in the urine did I have a sign or symptom of diabetes mellitus or of thyroid disturbance.

My past history was negative except for a case of measles at the age of 3. In my family history, there was no record of diabetes mellitus, or infectious or nervous diseases. My physical examination, except for a deflected septum and infected cryptic tonsils, was negative.

A complete lack of symptoms and an assurance of the harmless nature of the glycosuria led me to disregard the latter, and to continue my usual liberal carbohydrate intake.

A few months later, I tested my urine, on returning from a long walk, following a rich carbohydrate meal. To my surprise, the specimen was free from glucose. I tried this

1. Physiologic Glycosuria, editorial, *J. A. M. A.* 78: 1462 (May 13) 1922.



experiment three times a day for two weeks, and ingestion of as much as 500 gm. of carbohydrate would cause no glycosuria, provided the meal was immediately followed by a walk of at least twenty minutes. If I rested for twenty minutes right after a meal, and then took a walk, glycosuria would invariably follow. The thought that this symptomless glycosuria might change into true diabetes mellitus influenced me to search for its cause.

In 1918, I had an attack of acute follicular tonsillitis, and was sick for a week. This attack, in addition to the fact that the tonsils were infected, led me to have a tonsillectomy performed with no other thought than the avoidance of further attacks. In spite of only one attack of tonsillitis, the tonsils were very much infected.

About six weeks after tonsillectomy, while analyzing the urine after a meal consisting of about 90 gm. of carbohydrate, I found no glucose in the urine. Any amount above 90 gm. would cause from 0.2 to 0.4 per cent. glucose. The blood sugar following the ingestion of 1.75 gm. of glucose per kilogram of body weight was pronounced perfectly normal by Dr. Olmsted of Barnes Hospital metabolism department.

The unexpected rise in carbohydrate tolerance following the removal of the faucial tonsils made me feel almost certain that a remaining focus of infection in the nasopharynx was keeping the carbohydrate tolerance down.

On reading Sluder's<sup>2</sup> article on the lingual tonsils as a focus of infection frequently taking the place of the faucial tonsils after the latter have been removed, I concluded that my lingual tonsils were infected. An examination of the lingual tonsil by Dr. Sluder proved the tonsil to be hypertrophied and chronically infected. After two weeks of treatment by applications of saturated solution of silver nitrate to the lingual tonsil, the carbohydrate tolerance rose to 150 gm. On cessation of treatments, the carbohydrate tolerance would drop back to 90 gm., and the tonsil would enlarge again. Since the tonsil showed no change, I was advised to have it removed. During the summer of 1920, I had the lingual tonsil cauterized.

The day following operation, while testing the urine an hour after the ingestion of a glass of milk, I found glucose. This sudden drop in tolerance continued for nearly a week until the slough at the site of the operation came off. Tolerance then began to rise, and by the end of the third week I was able to consume 100 gm. of pure glucose without glycosuria resulting. For nearly two years following the lingual tonsillectomy, repeated examinations of the urine revealed no glucose, in spite of the most liberal amounts of carbohydrate consumed.

Although the relation between the infected tonsils and the glycosuria was definite, the exact *modus operandi* remained unknown. Sluder's observations on the lingual tonsil as a cause of thyroid irritation, plus the fact that on several occasions thyroid extract caused glycosuria, suggested irritation of the thyroid as a possible cause of the symptomless glycosuria.

In June, 1922, I had to give up this hypothesis. A urine examination following a meal containing, probably, 300 gm. of carbohydrate revealed 0.42 per cent. glucose. About three months previous to this finding, I had reported the case to the Jackson County Medical Society as a case of renal glycosuria completely cleared up following removal of infected tonsils.

An examination of the pharynx revealed an infected piece of lingual tonsil. This time, I decided to postpone the removal of the tonsil until I had made a more thorough study of the glycosuria. A number of questions arose: Was the blood sugar still normal? What was the new carbohydrate tolerance? Was exercise still inhibiting glycosuria? Was there any endocrine disturbance? What rôle, if any, did the nervous system play in this glycosuria? To answer these questions, I made a number of experiments.

#### EXPERIMENTS

A blood analysis following ingestion of 100 gm. of glucose gave these data: fasting, 0.12 per cent.; first hour, 0.15 per cent.; second hour, 0.13 per cent.; third hour, 0.12 per cent.

The three hourly urines showed 0.42 per cent. glucose. In other words, a normal blood sugar with glycosuria.

Experiments to determine the carbohydrate tolerance demonstrated that in the morning following a night's fast, I could consume any amount of carbohydrate without a resultant glucosuria; in the afternoon, 120 gm. of carbohydrate would cause the excretion of 0.4 per cent. glucose in the urine; exercise for twenty minutes or more right after any carbohydrate intake would prevent glycosuria; exercise of less than twenty minutes' duration would fail to prevent glycosuria; exercise taken later than fifteen minutes after a carbohydrate meal would fail to prevent glycosuria.

While conducting the foregoing experiments, I observed that a change in weather had a peculiar influence on my carbohydrate tolerance. For many days, I could not understand why on some days glucose was excreted on an intake of 120 gm. of carbohydrate, whereas on other days as much as 500 gm. would cause no glycosuria. Repeated observations convinced me that cold weather had an inhibitive effect.

This peculiar relation between temperature and carbohydrate tolerance led me, a year before, to believe, erroneously, that in my case glycosuria was due to a thyroid disturbance, since my experiments with thyroid extract were conducted during warm weather.

Experiments with various endocrine products proved to be entirely negative. Thyroid extract taken until the pulse rate increased from 75 to 100 a minute caused no glycosuria, if the carbohydrate intake was less than 120 gm. Epinephrin chlorid, 1 c.c. of a 1:1,000 solution, hypodermically, caused no glycosuria on less than 120 gm. of carbohydrate, and no greater glucose output on a high carbohydrate intake than occurred without the epinephrin chlorid. Solution of the anterior and posterior lobes of the pituitary also failed to produce glycosuria.

One afternoon while looking at the lingual tonsil, I happened to press the laryngeal mirror against the posterior wall of the pharynx, and thereupon experienced a marked pressure under the middle of the sternum, evidently due to esophagospasm, caused by reflex stimulation of the vagus.

The fact that a mechanical stimulation of the pharynx reflexly stimulated the vagus, suggested that the toxins of the infected tonsils might act in a similar way, reflexly stimulating the vagus nerve endings in some of the organs concerned in carbohydrate metabolism. To prove this, I decided to remove the vagus influence by atropin sulphate, and accordingly, took  $\frac{1}{100}$  grain (0.00065 gm.) of atropin sulphate hypodermically, ten minutes after ingestion of 120 gm. of carbohydrate. Hourly urine specimens for three hours failed to reveal any glucose. These experiments were repeated on seven successive days with diets ranging from 120 to 500 gm. of carbohydrate, and the results were identical. Moreover, I found that if I took the atropin later than ten minutes after carbohydrate ingestion glycosuria would invariably follow. In other words, the atropin sulphate had much the effect of exercise. Experiments with various doses of atropin sulphate proved that  $\frac{1}{100}$  grain was the smallest dose necessary to inhibit glycosuria. Blood sugar examination following ingestion of atropin failed to reveal any increase.

The peculiar similarity of action between atropin sulphate and exercise suggested that there was something common to atropin and exercise that inhibited glycosuria. Atropin and exercise had to be taken immediately after a carbohydrate meal; both had to be of definite quantities to produce the inhibitory effect.

The next interesting question was: What was the exact mechanism by which exercise produced the same effect as atropin sulphate? The fact that exercise was ineffective if taken one-half hour after carbohydrate intake led me to believe that it was not the burning of the glucose by the muscles during exercise that was responsible for the inhibitory effect on glycosuria, but probably the greater intake of oxygen during exercise. If exercise prevented glycosuria by a direct burning of glucose, as suggested by Allen,<sup>3</sup> why didn't exercise have the same effect, if taken one half hour instead of ten minutes after a carbohydrate meal?

2. Sluder, Greenfield: Some Clinical Observations on the Lingual Tonsil Concerning Goitre, Glossadymia and Local Infections, *Am. J. M. Sc.* 156: 248 (Aug.) 1918.

3. Allen: Diabetes Mellitus, Nelson Loose-Leaf Living Medicine 3: 99.



In other words, it seemed that there was something in the exercise that had to be supplied to the organs of carbohydrate metabolism before the glucose left the intestines and entered the portal circulation. To prove that this substance was oxygen, I performed the following experiments: Five minutes after a meal consisting of 300 gm. of carbohydrate, Dr. Ralph Duncan administered pure oxygen by the Barach method. Hourly urine examinations for three hours failed to show any glucose. A similar experiment performed twenty minutes after carbohydrate intake, instead of five minutes, resulted in the excretion of 0.44 per cent. glucose. The oxygen, then, behaved exactly like exercise. Both had to be taken right after a carbohydrate meal, and both had to be taken for a certain length of time. The evidence obtained from the foregoing experiments, then, is sufficient to convince one that exercise inhibited glycosuria by causing a greater intake of oxygen, and not by a direct burning of glucose.

## COMMENT

The relation between the focal infection in the tonsils and the symptomless glycosuria is evident. The various processes involved in bringing about the glycosuria need further explanation. The rapidity with which glucose appeared in the urine, twenty minutes after carbohydrate intake, suggests that the glucose on reaching the liver met with some interference and passed through the latter without absorption. The fact that exercise right after carbohydrate intake absolutely prevented glycosuria suggests that exercise removed something that was depressing the liver cells. Exercise or oxygen if taken later than twenty minutes after carbohydrate intake failed to prevent glycosuria, suggesting that the glucose reaching the liver would be turned down, as it were, before the inhibition from the liver was removed. The fact that atropin sulphate invariably prevented glycosuria and that this drug has a selective depressing effect on the vagus endings would further suggest that the depression in the liver cells was due to some vagus disturbance.

In view of the fact that the splanchnics, on stimulation, cause a conversion of glycogen into glucose and greater discharge of the latter into the blood, it is possible that the vagi have the opposite effect; namely, on stimulation they inhibit the conversion of glucose into glycogen. From the negative results obtained with epinephrin chlorid, the effect of the splanchnics can be excluded in this case.

The absence of glycosuria in the morning in spite of the ingestion of 500 gm. of carbohydrate, and the appearance of glycosuria in the afternoon on 120 gm. of carbohydrate, is further evidence of a disturbance of glycogenesis. In the morning, following a night's fast, the liver, being depleted of its glycogen, would assimilate all the glucose brought to it; whereas, in the afternoon, having stored up enough glucose from the morning meal, it would be unable to assimilate more than 100 gm., sending the rest to the kidneys for elimination.

If we assume the foregoing hypothesis of stimulation of the vagi inhibiting glycogenesis, it is easy to conceive how the toxins from the infected tonsils could stimulate the glossopharyngeal nerves of the pharynx and, reflexly, the vagi. That the vagi can be reflexly stimulated by stimulation of the nasopharyngeal nerves has been shown by Auer,<sup>4</sup> who produced gastric inhibition by chemical and mechanical stimulation of the nasopharynx; and recently by Carlson and his associates.<sup>5</sup> The latter by stimulating the tongue and

pharyngeal muscosa caused contractions of the cardia and lower esophagus in cats. These results were also obtained by tetanization of the central endings of the glossopharyngeal nerves.

The next interesting question is, Why should the kidneys excrete glucose, when it is at a normal level in the blood? If we admit the foregoing hypothesis of the toxins from the infected tonsils reflexly stimulating the vagi and thus inhibiting the conversion of glucose into glycogen in the liver cells, it is possible that the same toxins might stimulate the nerve endings in the cells of the kidney tubules, either reflexly or directly, in the process of their excretion from the kidney. This stimulation by increasing the excretory function of the epithelial cells causes a more rapid elimination of the glucose.

Whether or not this hypothesis explains the processes involved in the production of renal glycosuria, the facts brought out in this case are sufficient to throw some doubt on the existing theory of a lowering of the kidney threshold and an increased renal epithelium permeability as the cause of renal glycosuria. While I do not wish to convey the idea that infected tonsils are the cause of renal glycosuria, yet the fact that in none of the reported renal glycosuria cases is there any reference to an examination of lingual tonsils, and only such reference to examination of the faucial tonsils as "tonsils, negative," with no statement as to whether an attempt was made to express or aspirate the tonsillar contents, it is possible that some of the other reported cases have a similar focus of infection somewhere in the nasopharynx. A history of repeated attacks of tonsillitis, as my case demonstrates, is not at all necessary to justify a suspicion of chronically infected tonsils. In spite of only one attack of acute follicular tonsillitis, and a complete absence of symptoms from the lingual tonsils, there was enough infection in the tonsils to cause the symptomless glycosuria.

It is also possible that toxins from sources other than the nasopharynx might stimulate the vagus endings in the liver as well as the nerve endings in the epithelial cells of the kidneys, and cause symptomless glycosuria. It is quite likely that the glycosuria of pregnancy, having all the ear-marks of renal glycosuria and disappearing with the termination of pregnancy, is caused by the placental toxins, which, as is well known, have a special predilection for the liver and kidneys.

In view of the inhibitory effect of cold weather on my glycosuria, which is probably due to a greater intake of oxygen resulting from an increased metabolism, I have had to postpone further experimentation till next spring. In reporting the case in the meantime, I am hoping that those who have cases of renal glycosuria under observation may try the foregoing experiments, and thus determine whether the observations hold good for other cases of renal glycosuria.

## SUMMARY AND CONCLUSION

1. The case here reported presents a glycosuria of six years' duration, since the first discovery of glucose, and without symptoms of diabetes mellitus.
2. It presents a glycosuria with normal blood sugar, but clearing up on ingestion of small quantities of carbohydrate, or with carbohydrate-free diets.
3. Exercise, if taken immediately after carbohydrate intake, and continued for not less than twenty minutes, absolutely prevented glycosuria, in spite of the most liberal carbohydrate intake.

4. Auer: *Am. J. Physiol.* **18**: 347, 1907; **25**: 334, 1910.

5. Carlson, A. J.; Boyd, T. E., and Percy, J. F.: Studies on the Visceral Sensory Nervous System, XIV, The Reflex Control of the Cardia and Lower End of Esophagus in Mammals, *Am. J. Physiol.* **61**: 14 (June) 1922.



4. Exercise would fail to prevent glycosuria, if taken fifteen minutes after carbohydrate intake.

5. The removal of infected faucial tonsils raised the carbohydrate tolerance to 90 gm.; whereas, the removal of infected lingual tonsils brought the carbohydrate tolerance up to normal and caused a complete disappearance of the glycosuria for nearly two years.

6. The reappearance of glycosuria was observed following reinfection of a remaining piece of lingual tonsil, following, however, intake of 120 gm. of carbohydrate, instead of 30 gm., as before the tonsillectomies.

7. There was an absence of glycosuria in the morning after intake of 500 gm. of carbohydrate and the reappearance of glycosuria after 120 gm. of carbohydrate in the afternoon.

8. Glycosuria would disappear in cold weather in spite of the most liberal amounts of carbohydrate, and reappear in warm weather on intake of 120 gm.

9. Exercise, oxygen or atropin sulphate, if taken immediately after carbohydrate intake, would absolutely prevent glycosuria, regardless of the amount of carbohydrate ingested.

It is suggested that renal glycosuria may be due to an inhibition of glycogenesis, caused by a reflex stimulation of the vagi. The inhibition of the vagi may be of various degrees. In cases with complete vagus inhibition, glycosuria occurs even on carbohydrate-free diets; whereas, in cases with partial vagus inhibition, glycosuria clears up on intake of small amounts of carbohydrate. The appearance of glucose in the urine in spite of a normal blood sugar may be explained by an increase in the excretory function of the kidney cells, caused by a stimulation of the nerve endings of the latter by the same stimulants that act on the vagi.

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## SOME RECENT ADVANCES IN THE TREATMENT OF HEART DISEASE

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During recent years, our conception of heart disease has been rapidly advanced by the new knowledge gathered by two precise graphic methods: the polygraph, for which Mackenzie and his co-workers are responsible, and the electrocardiograph, perfected by Einthoven, with which most of the pioneer work has been done by Thomas Lewis. The information given us by these two methods has radically revised our knowledge of heart failure, and has profoundly altered our conceptions of prognosis and treatment. Although much of this newer knowledge is based on the results obtained by workers with these instruments of precision, after one has mastered the information taught, the use of them is not necessary for ordinary clinical work, and no less an authority than Thomas Lewis says:

While the pursuit of graphic work by those who possess the special aptitude and a developing interest in the method is decidedly to be encouraged, yet it is clear that a universal adoption of the graphic method is neither to be anticipated nor advocated. This conclusion is largely dictated by the belief that most of the every-day disturbances of the heart beat may now be identified by relatively simple means. If

this is possible to a practitioner, then it is also possible for him to grasp the new general conceptions and to apply them to his daily work.

I will therefore discuss some of the newer knowledge of heart disease as it aids us in the prevention and treatment of cardiac failure. Another factor is the ever increasing importance attached to infection as a cause of cardiac failure, as opposed to the old and generally accepted theory of back pressure.

I consider the subject also especially timely because of the increased interest in it as a result of the recent rise in the prevalence and mortality from these diseases. Recent statistics show that the number of deaths from diseases of the heart is now twice as great as that from tuberculosis, pneumonia or cancer. A more widespread knowledge of recent advances in the prevention and treatment of this group of diseases is the most important factor in combating this condition.

I shall discuss six forms of cardiac arrhythmia: (1) sinus arrhythmia; (2) heart block; (3) premature contractions; (4) paroxysmal tachycardia; (5) auricular flutter, and (6) auricular fibrillation. I shall also discuss the treatment of cardiac diseases as influenced by the presence of one or more of these conditions. In addition, I shall also refer to the treatment of functional disturbances of the heart, including effort syndrome.

### SINUS ARRYTHMIA

Irregularities of the heart produced by interference with the origin of rhythmic impulses at the sinus are termed sinus arrhythmia. As these irregularities are usually not associated with any organic disease of the heart, and are usually but an exaggeration of a normal phenomenon due to respiration, occurring in children and in young adults, they neither should suggest nor require special treatment. It is very important, therefore, to recognize this type of irregularity, as failure to do so has frequently resulted in much unnecessary treatment, and has been the cause of much worry to patient and parent.

### HEART BLOCK

Heart block is an abnormal heart mechanism in which there is a delay in, or absence of, ventricular responses to auricular impulses. There is no specific treatment for this condition, but the underlying associated cardiovascular disease should be treated. As this is frequently a manifestation of infection, the use of salicylates is indicated. Attention to the hygiene of the mouth and throat as a possible source of focal infection should be considered in every case. Syphilis, alcoholism and arteriosclerosis should be treated when present.

In cases of complete heart block, the occurrence of fits and their danger in causing accidents must be borne in mind. Gastro-intestinal disturbances should receive appropriate treatment. Digitalis, although an important cause of this condition, may be used if indicated by associated pathologic conditions. Heart block in itself should not be considered a cause for limiting the activities of the patient. Hypodermic injection of 10 minims (0.6 c.c.) of 1:1,000 solution of epinephrin chlorid has been recommended and more recently advocated by Parkinson and Phear.<sup>1</sup>

### PREMATURE CONTRACTIONS, OR EXTRASYSTOLES

Premature contractions, or extrasystoles, are contractions of the heart that disturb the rhythmic sequence by appearing early and in response to impulses newly

1. Parkinson, J., and Phear, A. G.: *Lancet* 1: 933 (May 13) 1922.



formed in the myocardium. As in the case of heart block, we have no specific treatment for this condition when present, and the treatment should be directed toward the underlying pathologic condition. Here, again, it must be remembered that large doses of digitalis sometimes cause premature contractions; but digitalis is not necessarily contraindicated because of their presence.

Premature contractions are frequently present without evidence of serious organic disease, such as is manifested by signs of cardiac enlargement, and symptoms of cardiac embarrassment. In such cases, they are not in themselves evidences of serious disease, and do not call for any specific treatment. We often see this present in pregnant women, and in persons suffering with nervous conditions and many gastro-intestinal disturbances, especially those associated with flatulence.

#### PAROXYSMAL TACHYCARDIA

The term paroxysmal tachycardia is applied to several phenomena all characterized by rapid beating of the heart, usually ranging between 120 and 300 beats a minute, starting and ending quite abruptly. Some of these are cases of auricular fibrillation, some auricular flutter, and some simple paroxysms of tachycardia. The treatment of this condition consists of those measures intended to cut short the paroxysm during the attack, and those measures intended to prevent the paroxysms between attacks.

(a) *During Attack*.—There is no known specific remedy that is invariably valuable, and it is very difficult to estimate correctly the value of the various measures recommended, as the attacks are usually self-limited in duration. However, many remedies are found valuable for these attacks and should be tried. These are: changing posture, tight binder to the abdomen, ice bag to the precordium, and emetic drugs. The intravenous injection of  $\frac{1}{100}$  grain of digitalin or  $\frac{1}{250}$  grain of strophanthin is useful in some cases. Pressure on the vagus as it lies in the carotid sheath or over the supra-orbital nerve as it emerges from the supra-orbital foramen frequently gives almost miraculous relief. During prolonged attacks the diet should be bland and easily digestible, the bowels should be kept open, and cardiac failure, if present, should be appropriately treated by the usual means. Quinidin, which will be more fully discussed later, is valuable in cases of paroxysmal auricular fibrillation. The pain and insomnia, when present, should be controlled by morphin or chloral.

(b) *Between the Attacks*.—A careful search should be made for the etiologic factor, and, when present, it should be treated. The general health of the patient should be improved, and infections, especially of a rheumatic character, carefully treated. Foci of infection in the mouth, tonsils and abdomen should be carefully looked for. Digestive disturbances, especially those associated with flatulence, should be appropriately treated. The wearing of an abdominal belt has proved of great value in preventing these attacks. Pregnancy and general anesthetics are not necessarily contraindicated, nor should the activities of the patient be restricted unless serious disease of the heart is evident by other signs and symptoms.

#### AURICULAR FLUTTER

Auricular flutter is a condition in which the auricles beat at a very rapid rate, usually from 240 to 360 a minute. The paroxysms of auricular flutter should be

treated along the same lines as those laid down for paroxysmal tachycardia. Auricular flutter, however, even if long continued, responds very successfully to digitalis therapy. Digitalis, given in full doses, practically always reduces the ventricular rate. As auricular flutter is due to circulating and never ending contraction waves in the auricle, digitalis creates a block in the auricles by obstructing the path of this circulating wave. Usually, it is found that full doses of digitalis convert the flutter into a fibrillation; and, when the digitalis is withdrawn, the fibrillation soon vanishes, and the normal rhythm is resumed. The corresponding improvement in the general condition of the patient occurs promptly with the restoration of the normal rhythm.

#### AURICULAR FIBRILLATION

In auricular fibrillation, the regular auricular contractions cease, and are replaced by fibrillatory twitchings of the auricular musculature. The normal impulses to the ventricle, being absent, are replaced by rapid and irregular ones, and the resultant ventricular contractions are very rapid and irregular as to strength and interval between beats. As this condition is present in the vast majority of cases of heart failure, its treatment is of great importance, and the reputation of the digitalis preparations in the successful treatment of heart failure is due to the favorable influence it has on the auricular fibrillation. Although the usual rules for the treatment of heart failure, such as rest, elimination and diet, must be instituted in every case, digitalis has an almost specific action in improving the condition of the patient. It acts by producing a partial heart block, in the bundle of His, abolishing most of the fine irregular impulses coming from the auricle, and reducing thereby the number of ventricular contractions. As the ventricular contractions become less frequent, each systole gains in strength, and the ideal condition is obtained when the ventricular rate approaches the normal of 72 a minute. (In counting ventricular systoles, it is important to listen over the heart as well as to palpate the radial pulse, as in this condition a pulse deficit at the radial is frequent.) This can be accomplished by the appropriate use of digitalis, if one understands its action and correct dosage. Although many preparations of the digitalis group have been used, I find that the tincture and the powdered leaf of digitalis are the most reliable, and will give satisfaction in practically all cases. It has been determined that full digitalization is accomplished by from 6 to 8 drams (22.5 to 30 c.c.) of the tincture, or from 36 to 48 grains (2.3 to 3 gm.) of the powdered leaf in the average adult weighing 150 pounds (68 kg.). The usual dose is from 20 to 30 minims (1.25 to 1.9 c.c.) of the tincture, or from 2 to 3 grains (0.13 to 0.195 gm.) of the powder given four times a day. Digitalization is completed in from four to six days.

In 1915, Eggleston<sup>2</sup> recommended the determination of the physiologic dose required, and advised giving the full dose in a very short time. I now give 1 dram (3.75 c.c.) of the tincture or 6 grains (0.4 gm.) of the powder four times a day for one or two days until the full physiologic effect is obtained. Symptoms of overdigitalization must always be watched for, the three most reliable ones being nausea and vomiting, slowing of the pulse below 70, and the developing of coupling beats. When any of these symptoms are present, the drug must be immediately stopped. After digitalization is obtained,

2. Eggleston, Cary: Digitalis Dosage, Arch. Int. Med. 16:1 (July) 1915.



most cases require the saturation to be continued. This can be accomplished by administering the amount eliminated, which has been determined to be the equivalent of 2 grains (0.13 gm.) of powdered leaf, or 20 minims (1.25 c.c.) of the tincture daily. In cases in which the heart failure is extreme, and more rapid action of the drug is necessary,  $\frac{1}{250}$  grain of strophanthin may be administered intravenously, and repeated every two hours for three doses. This, however, should be used only in those cases in which no digitalis has been previously administered.

De Meyer<sup>3</sup> recommended the intravenous administration of 1.5 mg. of physostigmin in tachycardia and auricular fibrillation. Enough work, however, has not been done with this remedy to warrant an opinion at the present time.

In 1914, Wenckebach<sup>4</sup> reported the results of treating a case of malaria in a Dutch merchant with quinin; an associated auricular fibrillation disappeared. In 1918, Frey<sup>5</sup> recommended quinidin sulphate for the treatment of auricular fibrillation, quinidin being the least toxic of the quinin derivatives. He reports favorable results in several cases. Since then, this drug has been used by clinicians in this country and in Europe, who report favorable results in more than 50 per cent. of the cases in which the normal rhythm is restored. In its action this drug differs from that of digitalis in that, whereas digitalis produces its favorable effect by reducing the number of ventricular contractions and does not influence the auricular fibrillation, quinidin, when successful, restores the normal rhythm. My own experience with about twenty cases in the last two years is even better than the average reported, as I have been able to obtain the normal rhythm in about two thirds of the cases. This drug, however, shows its greatest value in the more recent cases, as in the old and very seriously diseased hearts the normal rhythm, even when restored, did not continue very long. The usual dose is 5 grains (0.324 gm.) three or four times a day, which, when successful, will restore the normal rhythm in from four to six days, although in one of my cases it was restored after two doses, while in another, it took two weeks. In the severer cases, I continue the saturation with quinidin by administering 2 grains (0.13 gm.) three times a day for several weeks after the normal rhythm has been restored. As some patients have an idiosyncrasy against this drug, it is recommended that 2 grains be given three times a day for the first day, and then the regular doses be followed, if no untoward symptoms are manifested.

#### HEART FAILURE

There remains, however, a group of cases of heart failure not associated with auricular fibrillation, the treatment of which, therefore, is less satisfactory. Those due to syphilis should receive intensive anti-syphilis treatment, although vascular syphilis responds less than that of other parts of the body. The goiter heart can be radically treated only by the removal of the toxic goiter. The digitalis preparations do not seem to influence these cases very much. The arteriosclerotic and hypertensive hearts must be treated by correcting and eliminating the factors of deleterious habits and mode of life which are responsible for most of these cases. In the primary endocardial cases which are usually rheumatic, the result of streptococcus infection,

foci of infection must be carefully sought for and appropriately treated. These are usually to be found in the teeth, tonsils, accessory sinuses, pleura, gall-bladder or appendix.

In all cases of cardiac failure, infection plays a much greater rôle than is generally recognized, and is the real cause of the dilatation rather than the back pressure or cardiac strain. This has been proved by carefully watching of the temperature during the failure when a slight and sometimes moderate rise has been found in many cases. The presence of a streptococcus bacteremia has been found by many who have taken cultures in cases of heart failure, and, at the Mount Sinai Hospital, since we have instituted routine blood culture in all these cases, we are finding viridant and hemolytic streptococci in many of our cases. This has great practical importance in treatment, leading to the paying of less attention to the element of strain and more to the treatment of foci of infection. On that basis, we are now using the salicylates and sodium cacodylate in all cases of cardiac failure associated with infection.

Pfalz,<sup>6</sup> stimulated by the work of Büdingen, recommended the use of glucose in the treatment of heart disease. Glucose being one of the most important sources of energy for the proper activities of the cardiac muscles, he recommends the infusion of 200 c.c. of 15 per cent. glucose daily.

Although digitalis is the ideal remedy in auricular fibrillation, it can be given also in heart failure with marked edema, and is not necessarily contraindicated in cases of aortic regurgitation, and high blood pressure.

#### FUNCTIONAL CONDITIONS OF THE HEART

There is also a group of cases generally classed as heart disease because of the presence of one or more symptoms or physical signs of heart disease. These cases are termed functional conditions of the heart because, as far as we know, they are not associated with pathologic conditions of the cardiac structure. It is of great importance to differentiate these from diseased hearts in order that the activities of these patients may not be restricted and that the treatment of these cases may be directed to the underlying or associated condition and not to the heart. I refer, particularly, to those in whom a systolic murmur or an abnormal rhythm is found as an isolated symptom.

#### EFFORT SYNDROME

Another class of cases closely allied to these are those known as soldiers' heart, irritable heart, neuro-circulatory asthenia or effort syndrome. Warfield and Smith<sup>7</sup> reviewed 275 cases with symptoms of irritable heart, consisting of breathlessness, exhaustion, giddiness, faintness, palpitation, headache, lassitude and irritability. A careful investigation of these cases disclosed seventy-eight cases of hyperthyroidism; ninety-four of tuberculosis; thirty-three, normal; forty-one, bronchial asthma; four, cirrhosis of the liver, and four, irritable heart. In the treatment of these cases the constitutional defect and the psychoneurotic tendencies must be corrected.

#### SUMMARY

1. The newer knowledge of the mechanisms of the cardiac rhythm, particularly as disclosed by researches

3. De Meyer: Tr. French Congress of Medicine, 1920.

4. Wenckebach: Berl. klin. Wehnschr., 1914.

5. Frey, W.: Berl. klin. Wehnschr. 55: 849, 1918.

6. Pfalz: Deutsch. med. Wehnschr., Oct. 23, 1913.

7. Warfield, L. M., and Smith, F. M.: J. Lab. & Clin. Med. 5: 75 (Nov.) 1919.



with the electrocardiograph and polygraph, enables us to treat heart conditions more efficiently.

2. Cardiac failure is usually associated with auricular fibrillation, which, when present, responds very satisfactorily to digitalis medication. Proper dosage of digitalis is necessary. The method of large dosage is advocated.

3. Quinidin has proved successful in more than 50 per cent. of the cases of auricular fibrillation in restoring the normal rhythm.

4. The importance of infection as a factor in cardiac failure is too frequently overlooked, and the generally accepted theory of back pressure and cardiac strain should be abandoned in most cases.

5. Functional cardiac disturbances must be differentiated from serious organic disease, and treated accordingly.

6. Effort syndrome is usually not a cardiac disease, and the true diagnosis should be determined for its successful treatment.

104 South Michigan Avenue.

INFLUENCE OF VARIOUS SYMPTOMS  
IN THE PROGNOSIS OF PULMO-  
NARY TUBERCULOSIS

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In two previous communications<sup>1</sup> I have attempted to analyze the relative resultant effect of the presence, absence and location of râles, together with the importance during treatment of their increase and decrease, in the prognosis of pulmonary tuberculosis.

My purpose here is to determine the comparative value of certain symptoms in aiding us to predict for our patients something of their ultimate chances of recovery. This analysis, as in the two previous communications, is based on a study of one thousand consecutive admissions to the Trudeau Sanatorium during the years from 1907 to 1913. As twenty of these cases for one reason or another have not been included in these statistics, the tabulations are based on 980 cases. As a result of the follow up system employed at the sanatorium, we are able to tell the present condition, or, to be more exact, the condition in 1918, of all but less than 2 per cent. of these 980 patients.

The terms "well," "living," "dead" and "unknown" have been used to describe the state of health of these 980 patients in 1918, or from five to eleven years after discharge, "well" referring to those patients who have been apparently well and working for a period of at least two years, and "living" including either those who have relapsed or those of whom we can give no further information except the fact that they are still alive.

MODE OF ONSET

The first point to be considered is the mode of onset of the disease in these 980 cases, and the significance of its various types as regards prognosis. In considering the five most common types of onset, namely, the catarrhal, the insidious, the pleuritic, the hemoptysic and the febrile, we note from Table 1 that the way the disease began plays little or no part in determining its

future course. In the five types of onset mentioned above, the "wells" vary only from 58 to 68 per cent., while the deaths vary from 20 to 27 per cent.

TABLE 1.—ONSET AND COURSE

Type	No.	%	Condition in 1918							
			Well		Living		Dead		Unknown	
			No.	%	No.	%	No.	%	No.	%
Catarrhal.....	473	48.26	289	61	70	15	110	23	4	1
Insidious, gradual	350	35.73	237	68	38	11	70	20	5	1
Pleuritic.....	72	7.34	42	58	14	19	15	21	1	2
Hemoptysic.....	50	5.1	33	66	5	10	12	24	—	—
Febrile.....	15	1.53	9	60	2	13	4	27	—	—
Gastric, dispeptic, indigestion.....	8	0.82	7	88	—	—	—	—	1	12
Glandular.....	5	0.51	3	60	1	20	1	20	—	—
Family history + t'b'r'n+.....	3	0.3	1	33	1	33	1	33	—	—
Fistula in ano.....	2	0.2	2	100	—	—	—	—	—	—
Pneumonia.....	2	0.2	1	50	—	—	1	50	—	—
Total.....	980	100	624		131		214		11	

SPUTUM

Among our 980 patients, 591, or 60 per cent., showed tubercle bacilli in the sputum, 464 of these while in the sanatorium and 127 before coming.

The grave importance of these findings as regards prognosis is clearly shown when we realize that only 53 per cent. of these patients whose sputum was positive are well and working, as contrasted with 79 per cent. among the negative cases, while the mortality among the positive cases, from five to eleven years after discharge, is 32 per cent., as compared to only 6 per cent. in the negative cases.

TABLE 2.—RELATION OF SPUTUM TO PROGNOSIS

Type	No.	%	Condition in 1918							
			Well		Living		Dead		Unknown	
			No.	%	No.	%	No.	%	No.	%
Negative.....	389	39.7	307	79	51	13	24	6	7	2
Positive.....	591	60.3	318	53	79	14	190	32	4	1
Total.....	980	100	625		130		214		11	

HEMOPTYSIS

Under the head of hemoptysis we have arbitrarily set the amount of one teaspoonful or more of blood as constituting a definite hemorrhage. Doubtless most of us are apt to consider the symptom as being of rather grave prognostic value in comparison to the absence of hemoptysis. The figures in Table 3 are surprising, for 61 per cent. of the hemoptysic patients are well and working, as compared to 65 per cent. of our non-bleeding patients, while the death rate is practically the same for the two types of cases; namely, 23 and 22 per cent.

TABLE 3.—PROGNOSTIC VALUE OF HEMOPTYSIS

Type	No.	%	Condition in 1918							
			Well		Living		Dead		Unknown	
			No.	%	No.	%	No.	%	No.	%
Negative.....	636	64.9	415	65	77	12	136	22	8	1
Positive.....	344	35.1	210	61	53	15	78	23	3	1
Total.....	980	100	625		130		214		11	

WEIGHT

Table 4 will illustrate the beneficial importance of a gain in weight among our tuberculous patients. More than 67 per cent. of these showed a gain in weight averaging 8½ pounds (4 kg.), as contrasted

1. Trudeau, F. B.: Importance of Physical Signs in the Prognosis of Pulmonary Tuberculosis, *Am. Rev. Tuberc.* 4: 518 (Sept.) 1920; Presence, Absence and Location of Râles in the Prognosis of Pulmonary Tuberculosis, *J. A. M. A.* 77: 1326 (Oct. 22) 1921.



to only 28 per cent. who lost weight, and approximately 5 per cent. whose weight remained stationary. Among those who gained, the figures for the "wells" and "deads" are 67 and 20 per cent., respectively, contrasted with 57 and 27 per cent. of those who lost weight. The forty-seven patients whose weight remained stationary did practically no better than those who showed a loss of weight.

TABLE 4.—SIGNIFICANCE OF GAIN IN WEIGHT

Type	No.	%	Condition in 1918							
			Well		Living		Dead		Unknown	
			No.	%	No.	%	No.	%	No.	%
Gain.....	657	67.04	441	67	81	12	127	20	8	1
Loss.....	276	28.16	157	57	42	15	75	27	2	1
Stationary.....	47	4.79	27	57	7	15	12	26	1	2
Total.....	980	100	625		130		214		11	

## PULSE

The symptomatic importance in prognosis of the pulse is emphasized by Table 5. Cases are rated as "pulse positive" in this series in which a pulse rate of 90 or over persists for five consecutive days and diagnosis fails to reveal any other cause than tuberculosis. Sixty-nine per cent. of the negative pulse patients are well and working, as compared to only 49 per cent. of those having tachycardia, while only 16 per cent. of the former class are dead, as compared to 38 per cent. of the latter. The grave prognostic significance of rapid pulse is undoubtedly due largely to the fact that it is often accompanied by fever, which, as we shall see in Table 6, is the gravest of all symptoms that we have studied.

TABLE 5.—IMPORTANCE OF PULSE

Type	No.	%	Condition in 1918							
			Well		Living		Dead		Unknown	
			No.	%	No.	%	No.	%	No.	%
Negative.....	717	73.1	496	69	97	14	114	16	10	1
Positive.....	263	26.9	129	49	33	13	100	38	1	—
Total.....	980	100	625		130		214		11	

## FEVER

Cases are here classified as "fever positive" when the patient's temperature was 99.5 F. or over for five consecutive days, which could not be explained by any other cause than tuberculosis. By reference to the figures in Table 6 it will be noted that the percentage of "deads" among our febrile patients is nearly as great as the percentage of "wells"; namely, 43 and 45 per cent., respectively, while of our afebrile patients 68 per cent. were well and working from five to eleven years after discharge, and only 17 per cent. had died.

TABLE 6.—SIGNIFICANCE OF FEVER

Type	No.	%	Condition in 1918							
			Well		Living		Dead		Unknown	
			No.	%	No.	%	No.	%	No.	%
Negative.....	809	82.6	548	68	110	14	141	17	10	1
Positive.....	171	17.4	77	45	20	12	73	43	1	—
Total.....	980	100	625		130		214		11	

SEX, FAMILY HISTORY AND STAGE OF DISEASE  
ON ADMITTANCE

Although not strictly classified as symptoms according to the title of this paper, it might be of interest to consider from a prognostic standpoint the influence of

sex, family history and the stage of the disease on admittance to the institution.

Table 7 discloses that the proportion of males to females entering the institution is very nearly equal, as is the percentage of "wells" among the two sexes,

TABLE 7.—INFLUENCE OF SEX

Type	No.	%	Condition in 1918							
			Well		Living		Dead		Unknown	
			No.	%	No.	%	No.	%	No.	%
Male.....	522	53.27	329	63	55	11	133	25	5	1
Female.....	458	46.73	297	65	75	16	80	18	6	1
Total.....	980	100	626		130		213		11	

namely, 63 and 65 per cent., respectively; the males, however, have slightly the higher death rate in our series, with 25 per cent., as compared to 18 per cent. of the females.

In considering family history in this paper we have reference only to the immediate family; namely, father, mother, brothers or sisters. It is of interest to note that 30 per cent. of our cases have a positive family history, yet this fact seems not to have any prognostic

TABLE 8.—INFLUENCE OF FAMILY HISTORY

Type	No.	%	Condition in 1918							
			Well		Living		Dead		Unknown	
			No.	%	No.	%	No.	%	No.	%
Negative.....	690	70.4	441	64	90	13	153	22	6	1
Positive.....	290	29.6	184	63	40	14	61	21	5	2
Total.....	980	100	625		130		214		11	

value, as a study of the table reveals only a small variation in outcome as between our positive and negative family history cases.

Table 9 is indeed encouraging, for more than 78 per cent. of our patients in whom the disease was incipient have resumed normal life, while less than 10 per cent. have died. Even among those whose disease was moderately advanced, more than 70 per cent. are alive,

TABLE 9.—INFLUENCE OF STAGE OF DISEASE ON  
ADMITTANCE

Type	No.	%	Condition in 1918							
			Well		Living		Dead		Unknown	
			No.	%	No.	%	No.	%	No.	%
Incipient.....	352	35.92	275	78	43	12	28	8	6	2
Moderately ad- vanced.....	612	62.45	350	57	84	14	173	28	5	1
Far advanced.....	16	1.63	4	25	3	19	9	56	—	—
Total.....	980	100	629		130		210		11	

although only 57 per cent. of these have been restored to good enough health to allow them to work. It seems, indeed, gratifying that there are 25 per cent. of "wells" among our far advanced cases.

TABLE 10.—TOTAL RESULT

	Number	Per Cent.
Well.....	625	64
Living.....	130	13
Dead.....	214	22
Unknown.....	11	1
Total.....	980	100

## CONCLUSION

It might be interesting to note the present condition of these 980 patients, regardless of any symptoms,



except the fact that they were patients in the sanatorium. Two hundred and fourteen of these are dead, and eleven unknown. Of the deaths, 180, or 84 per cent., were caused by tuberculosis, and thirty-four from other causes, so that of 980 patients whose condition has warranted their admittance to the sanatorium, more than 75 per cent. are well or living from five to eleven years after discharge, while practically two out of every three of them have been restored to earning capacity.

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## PREVENTION OF PERITONEAL CONTAMINATION IN DRAINAGE OF ABDOMINAL ABSCESES

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If, in the course of an operation for appendicitis, a well walled-off collection of pus is found, it is a common practice to enter the abscess, even if it is rather large, and remove the appendix. This is, of course, done in the hope or belief that contamination of the general peritoneal cavity will not result. Unfortunately, in mesiocolic, procecal and many retrocecal and subhepatic abscesses, it is impossible to enter the intraperitoneal abscess and remove the appendix without breaking up the protective peritoneal adhesions. Unless the abscess is large or so superficially situated as to reach the mural peritoneum, in which case the abscess cavity can be freely explored and drained without fresh soiling of uncontaminated peritoneal surfaces, it will hardly be denied that the exercise of great caution in the removal of the pus, for example, by way of an extraperitoneal canal to prevent additional peritoneal contamination, conforms to a surgical principle, the ignoring of which is fraught with danger. Therefore, if an appendical abscess can be drained without traversing a virgin peritoneal space, this should be done. In laterocolic extra-

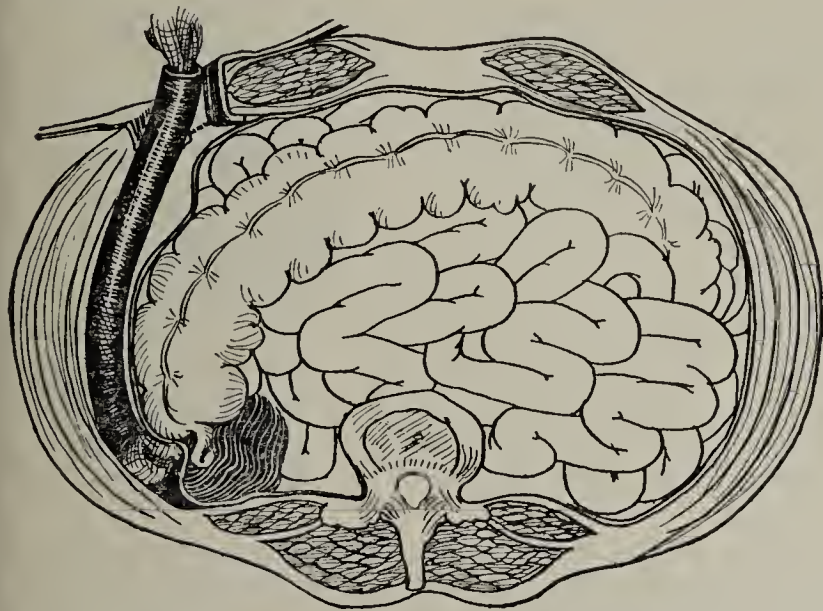


Fig. 1.—Large cigaret drain passed between mural peritoneum and abdominal musculature; tuft of gauze on inner end pressing intraperitoneally against abscess wall causes rupture and evacuation of abscess.

peritoneal abscesses and certain large intraperitoneal abscesses this will be easy of accomplishment; moreover, it can be done in retrocolic, intraperitoneal and extraperitoneal abscesses of smaller size and more sequestered location, if the correct avenue of approach is followed.

In the accompanying illustrations, two methods of safe drainage of deep seated intra-abdominal abscesses

are presented. The first of the two methods to which it is desired to call attention has been used for many years, but too infrequently used by most operators, if I have been able to judge correctly by personal discussion of the subject with colleagues and by perusal of written treatises on this subject. The plan referred to is that of approaching a laterocolic or retrocolic

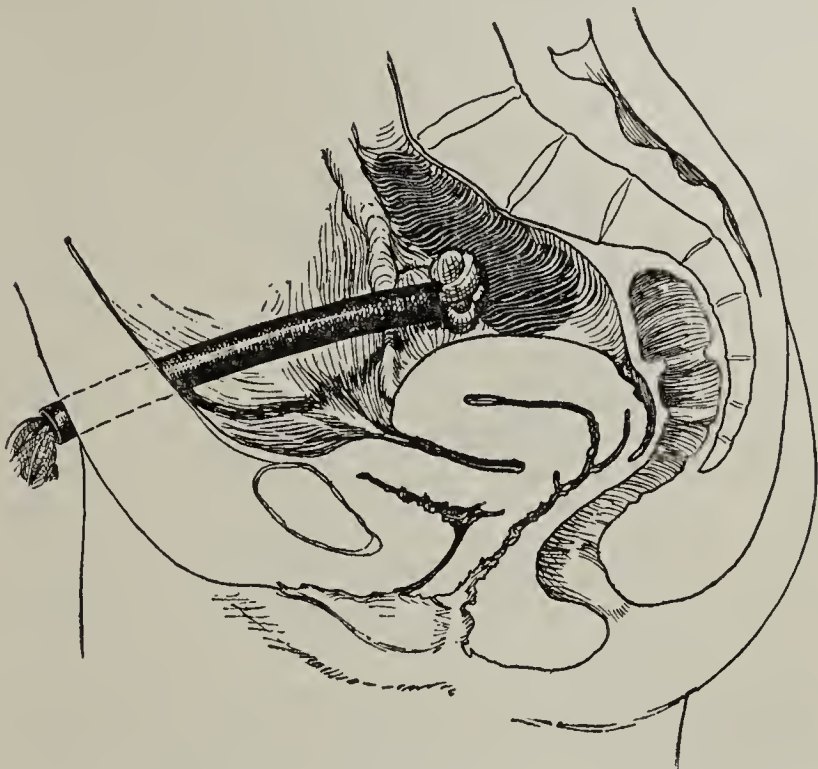


Fig. 2.—Cigaret drain passed to intra-abdominal surface of pelvic abscess; pressure of tuft of gauze may be expected to cause disintegration and spontaneous rupture of abscess wall after drainage well of adhesions has been formed.

abscess by an entirely extraperitoneal route; that is, the incision is made lateral to the classical appendix incision, and extends only to the peritoneum. The parietal peritoneum is then peeled away from the musculature of the flank, and the abscess opened bluntly at the bottom of the extraperitoneal canal thus formed.

Given a well defined retrocecal abscess as large as a hen's egg or larger, a certain mortality will follow attempt to remove the appendix and wipe out the pus through a ventral peritoneal incision. On the other hand, there should be practically no mortality following the opening of the abscess through an extraperitoneal avenue of approach. It is not, however, my object here to discuss at length any method of opening an intra-abdominal abscess at the time of operation; the foregoing reference has been made because the measure already described leads to another and more important consideration.

About fifteen years ago, in attempting to reach a retrocecal abscess as described above, it was found easily possible to peel off the peritoneum down to a position alongside the cecum; but the exploring finger found no ulcerated area through which a puncture could be made without danger of admitting virulent pus into the free peritoneal cavity. Therefore, the space alongside the cecum was loosely packed with two strands of gauze, between which a large rubber drainage tube was passed, the ends of the gauze and the drainage tube extruding at the wound in the flank. About eight hours after the operation, the abscess broke spontaneously, and a large amount of pus was discharged from the wound. The gauze was removed gradually, and the tube was taken out after ten days. There were no subsequent signs or symptoms of abscess, nor has there been any recurrence of appendi-



citis symptoms nor any intra-abdominal trouble of any kind in the years that have lapsed since the operation.

I have often dealt with abscesses consequent on appendicitis in this manner, and have been surprised to note how completely this plan of utilizing suction and chemotaxis has removed every vestige of infection in and about the appendix, and to observe how free patients thus operated on have remained, so far as any postoperative complications are concerned.

Much less frequently it has been found, after opening the abdomen and peritoneal cavity itself in the usual manner, that large appendical abscesses deeply situated could not be opened and drained safely in the ordinary transabdominal manner; that is, it could not be done without extensive contamination of the general peritoneum. Therefore, in such cases a very large cigaret drain with a protruding tuft of gauze was placed on the abscess, the abdominal wound being closed around the distal end of the tube. It has been the almost invariable rule that rupture of the abscess has occurred within forty-eight hours, but not, of course, until the canal established about the tube was sealed off by peritoneal adhesions. Thus, a transabdominal but to all purposes extraperitoneal avenue of drainage was constructed. It seems clear enough that adhesions and exudate about the inner end of the tube soften as the result of the dynamic effect of pressure, suction and chemotaxis focalizing the infection about the inner end of the tube.

In cases of acute appendicitis with a definite resisting mass in the right groin, prudence directs that the flank incision be made cautiously until the peritoneum is reached. If an abscess is opened before the peritoneum is reached, it will of course be very easy to provide ample and safe drainage. If, however, the peritoneum is found to be intact and movable over the underlying mass, the plan of peeling the peritoneum loose from

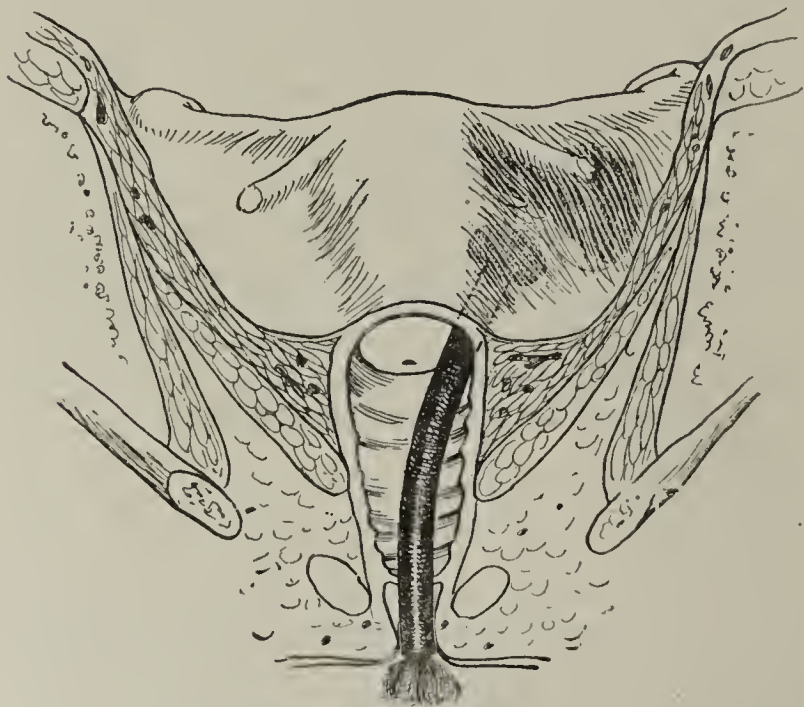


Fig. 3.—Large cigaret drain passed through incision in vaginal vault for purpose of inducing rupture of a high pelvic abscess.

the muscular abdominal wall and seeking a low point of puncture has much to recommend it. In such cases, after the peritoneum has been reached, a thorough exploration with the gloved finger should be made to determine whether a true abscess exists or whether the mass consists merely of the enlarged appendix, clumps of omentum and exudate. If no well defined fluctuating abscess is palpable through the intact peri-

toneum, the abdominal cavity should, of course, be entered and the appendix removed. If, however, an abscess is felt under the intact peritoneum, there is excellent reason for avoiding entrance into the free peritoneal cavity. In such an instance the abscess can be punctured low with the gloved finger and drained

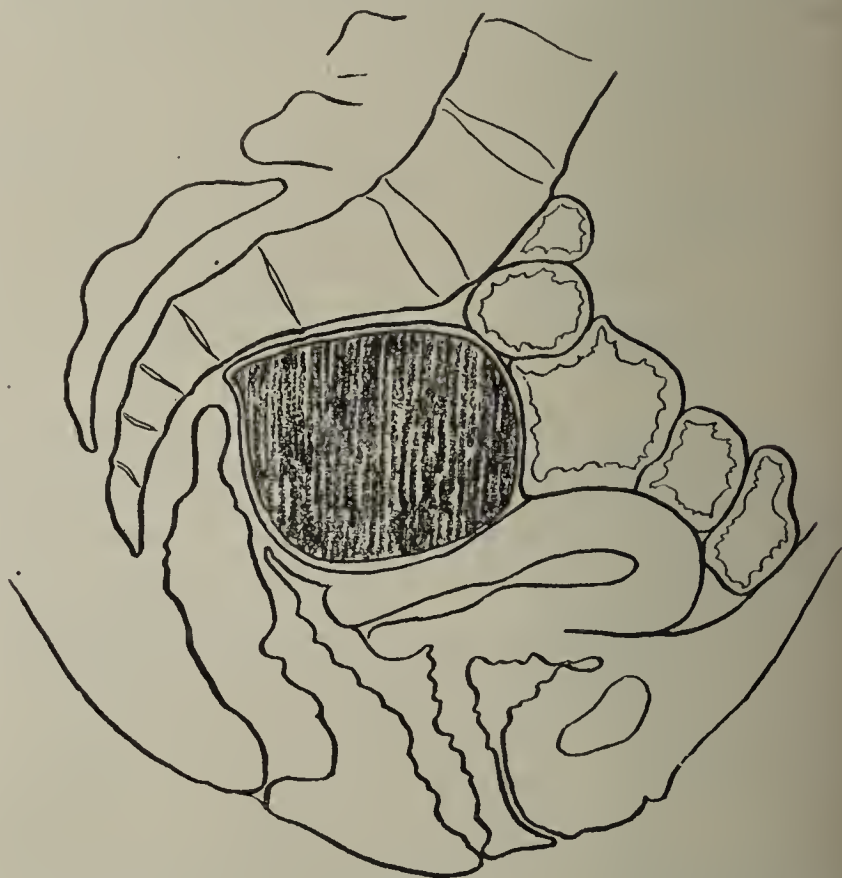


Fig. 4.—Pelvic abscess in position favorable for vaginal puncture as distinguished from abscess situated high and difficult of access, as in Figure 5.

through the space between the peritoneum and musculature. This offers an avenue of ample and safe drainage. If, however, the low puncture cannot be made without considerable risk of contamination of the general peritoneal cavity, then the tampon of gauze and the drainage tube introduced deeply alongside or under the abscess will induce spontaneous rupture with safe drainage in practically every case.

Rather extensive observation has shown, moreover, that in cases presenting difficulty in determining whether or not abscess really existed, ample seropurulent drainage has been attended or followed by disappearance of the mass and complete recovery of the patient. Therefore, in view of the relief afforded by the suction drain in such cases of doubt, the wisdom of opening up such a large mass and searching for the appendix in late acute or subacute cases may be doubted. This, however, does not imply that the appendix should not be removed in practically every case that is seen early enough.

It has transpired in my experience that the abdomen has been opened for the removal of pus tubes or confluent salpingo-oophoritis, whereas the principal seat of pus proved to be external to the peritoneum; that is, the intra-abdominal extraperitoneal pelvic abscess was situated so high up in the pelvis as not to admit of easy diagnosis by bimanual abdominal and vaginal examination. Such an abscess may occur unassociated with marked infection of the tube and ovary. An abscess so situated cannot always readily be reached through a vaginal puncture, and the folly of opening intra-abdominally such an abscess filled with hot pus at the time of the abdominal operation is, or should be, generally appreciated. The employment of the large



cigaret drain with the gauze tampon at the inner end will militate strongly on the side of safety; for, if the large rubber tube filled with gauze is placed against the intra-abdominal side of the peritoneum covering the pelvic abscess, the outer end of the tube projecting from the ventral wound, a deep well made up of protecting adhesions will quickly form about the tube, and as a rule within a day or two the abscess will rupture spontaneously and discharge through the walled off canal without contamination of the general peritoneum. It should be admitted that if the tubes and ovaries are definitely infected and are not removed at the time of the exploration because of the danger of rupture of the abscess, it may occasionally be necessary after the abscess has cleared up to reopen the abdominal wound for the removal of the infected adnexa. Certainly, this is not brilliant surgery; but brilliance in surgery may be said to belong to another day, and many good surgeons have expressed abomination of the word brilliance as applied to their work.

The procedure described may be said to make for a tedious convalescence. That is true, and a tedious convalescence is a dull affair. It is much less brilliant than a funeral, but more satisfactory to the patient and surgeon. There are, no doubt, some who will look on the proposal given as one of atrocious demerit; but among these there will hardly be any who have had extensive experience with the plan.

A few times in my experience when attempts have been made to reach a pelvic abscess through a vaginal puncture it has appeared that further dissection about the uterus might result in a perforation of the pelvic peritoneum, and in such instances the tampon tube has been passed into the pelvic cellular tissue through the wound in the vaginal vault with the view of awaiting spontaneous rupture as the result of the dynamic effect of pressure, suction and chemotaxis. The rupture has almost invariably occurred after a few hours with ample drainage and eventual complete cure, except in cases of

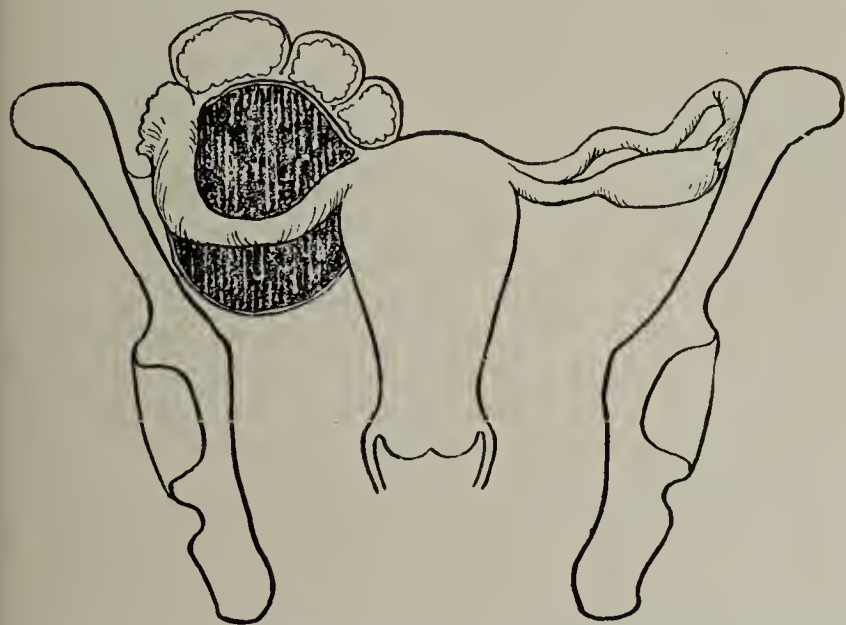


Fig. 5.—Pelvic abscess situated high up in the broad ligament; often difficult to open safely by vaginal puncture, unless quite large.

pelvic abscess attended with pyosalpinx or other associated pathologic changes, in such instances it being necessary later to remove the infected uterine adnexa through the abdomen. Perhaps many surgeons have made use of the procedure here described. They are presented for the reason that they are not generally employed in the relatively small percentage of cases suitable for their application.

In 1921, Ochsner<sup>1</sup> reported a case of abscess of the pancreas, interesting in this connection:

A woman, aged 48, with symptoms of ulcer of the greater curvature of the stomach, which later proved to be malignant, was subjected to an exploratory laparotomy which demonstrated an indurated mass 5 cm. in diameter in the posterior wall of the stomach attached to the tail of the pancreas, which was swollen to the size of an orange about 10 cm. in diameter. This swelling was congested and contained fluid. Evidently



Fig. 6.—Postponed rupture of abscess of pancreas; large cigaret drain passed down to abscess and abdomen closed; spontaneous rupture occurred a few hours later, after protective adhesions had formed about the tube. (Case of Dr. A. J. Ochsner.)

an abscess had formed in the tail of the pancreas from an infection originating in the perforated gastric ulcer.

In order to determine the condition more perfectly, an opening was torn in the transverse mesocolon, and the abscess was found strongly adherent to the posterior wall of the stomach, while the posterior wall of the pancreas was quite free. Great care was exercised in the manipulation of the pancreas not to rupture the abscess. An incision was then made in the left flank, immediately below the last rib, 5 cm. long, and a pair of forceps was passed forward, guided by one hand, in the abdominal cavity to a point behind the pancreas. The blades of the forceps were spread widely open in order to establish a broad passage. The space behind the pancreas was then loosely packed with gauze, in the middle of which was placed a large rubber drainage tube. The gauze and the drainage tube were passed out of the wound in the flank, and two cigaret drains were added and carefully placed behind the pancreas. The tear in the mesocolon was then repaired, and the abdominal wound was closed. Five days after the operation the abscess broke spontaneously, and a large amount of thick pus escaped. The gauze and the cigaret drains were removed gradually. The rubber tube was left in place for two weeks, when the discharge had been greatly reduced. The tube was then removed, and the wound healed in two more weeks.

1. Ochsner, A. J.: Paper read before American Surgical Association, Toronto, 1921.

**Ossification of Arteries.**—Ossification of the arteries probably occurs in about 6 per cent. of the vessels of the extremities which show severe arterial degeneration. It is more than twice as frequent in these vessels as in the aorta and cardiac valves. Ossification of the arteries takes place usually in the medial coat, though occasionally in the intima also. It follows medial calcification with or without endarteritis, but is most common where the two are combined. It is usually not associated with cartilage, but is the result of metaplasia of fibroblasts of the adjacent granulations as they impinge on the calcific plaques.—L. C. Knox, *Proc. New York Path. Soc.* 22:115 (Jan.-May) 1922.



# CLINICAL EXPERIENCE WITH KOLMER COMPLEMENT FIXATION TEST FOR SYPHILIS\*

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AND

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More than fifteen years has elapsed since Wassermann and his collaborators first published their epochal work on the complement fixation test; since then no biologic test has received a more searching analysis. Aside from the volumes written on its original technic, numerous attempts at its refinement, with varying success, have been made (Noguchi, Hecht-Weinberg, Bauer modifications, etc.). Today no one questions the value of its aid in the diagnosis of syphilis. However, a considerable percentage of physicians still continue to regard this test with some degree of suspicion, and perhaps properly so, since reports on the same serum, when examined in different laboratories, are very often contradictory. This discrepancy may result from the carelessness or inexperience of the serologist, or it may be due to the fact that almost every serologist has introduced into the technic minor changes of his own. This has led to a marked diversity of opinion on almost every step of the test, a fact well known and deplored by all syphilologists. Because of this, the need for a standardized technic becomes at once apparent. With a standardized technic that is both specific and more sensitive than the older tests, we would possess a more reliable aid, not only in the diagnosis but likewise in the treatment of syphilis. A complement fixation test that would give no false positives, and fewer false negatives, would be a decided step forward.

With this end in view, Kolmer began an intensive study of every phase of the complement fixation test, requiring almost six years to complete. In January, 1922, he<sup>1</sup> published his final results, claiming for his new technic practical specificity, increased sensitiveness and, from the laboratory point of view economy, accuracy and simplicity of performance. Almost three years has elapsed since Kolmer's technic was introduced into our clinic. Its merits from a clinical point of view were discussed by Schamberg and Klauder<sup>2</sup> in a previous paper from this clinic and from private practice.

Since this publication, four other papers on the Kolmer test have appeared, and there has been a remarkable concordance of opinion among all of the writers. It is a significant fact that although all of them credit the new test with being distinctly more sensitive than the older methods, not a single instance of a false positive has been observed by any of them.

Shivers<sup>3</sup> employed the Kolmer test in 320 cases, and expressed the opinion that "the new method marks a distinct and valuable advance in the serum diagnosis of syphilis, being much more sensitive and at the same time yielding no falsely positive reactions."

Harper and Curtis<sup>4</sup> tried the Kolmer test in 120 cases, and they fully corroborate the clinical findings of

Schamberg and Klauder. They write: "We regard the Kolmer modification of the Wassermann test as a most important advance, and one calculated to shed added light on the detection of obscure syphilis and in the ultimate determination of the factors of treatment."

Kilduffe<sup>5</sup> reports the results of a comparative study of 1,014 serums with the Kolmer test and the older routine method, and concludes that the Kolmer method possesses greater delicacy, flexibility and elasticity, and permits of quantitative reading. He did not observe any nonspecific reactions. Kilduffe concludes that Kolmer's method presents by far the most acceptable technic yet proposed for adoption as a standard method.

Palmer and Gibb<sup>6</sup> report on the use of Kolmer's test in 329 patients, strongly commend it, and conclude that it shows greater sensitivity and specificity and gives fewer anticomplimentary reactions.

The opinions hereafter expressed are based on a study of the histories of more than 400 syphilitic patients on whom more than 4,000 tests were performed.

From the standpoint of the syphilologist, the value of a complement fixation test depends, in the main, on two factors: (1) specificity (specific in the sense that it must indicate the presence or absence of syphilis, since it is not a specific test in the biologic sense), which is of primary importance, and (2) sensitiveness. The latter is particularly of value for the aid it may give in the early diagnosis of a chancre, in endosyphilis and in the control of treatment, as it is on this test alone that the syphilologist must later depend for his information as to the efficacy of treatment.

## SPECIFICITY

The recognition of the specificity of a test for syphilis depends, on the one hand, on a positive outcome in the presence of the disease, (corroboration by the finding of *Spirochaeta pallida* or the presence of unquestionable clinical phenomena), and, on the other hand, on its negative outcome in the absence of the disease in question.

It is generally known that the original Wassermann test could not be considered absolutely specific for syphilis, since positive results were obtained in certain other disease processes and that, more important still, negative results occurred in the presence of known syphilis. With the older technic, positive reactions in the presence of disease processes other than syphilis were, however, rare (less than 1 per cent.);<sup>3</sup> but with the new technic our records tend to indicate that this does not occur, and in this experience we are confirmed by other observers. With respect to this point, Case 1 is cited because one of the few conditions in which positive reactions occur with the old technic is nodular leprosy:

CASE 1.—V. C., a white woman, aged 38, born in Italy, whose condition was diagnosed as nodular leprosy, the diagnosis being confirmed by microscopic examination, was referred to the genito-urinary clinic of another hospital for antisyphilitic treatment because of a 4 plus Wassermann reaction nine months before we saw her. During that period she received eight intravenous injections of neo-arsphenamin and fourteen intramuscular injections of mercuric salicylate. The treatment had no effect on the numerous leprosy nodules or on four Wassermann tests at various times during this

\* From the Research Institute of Cutaneous Medicine, and from the Polyclinic Hospital.

1. Kolmer, J. A.: Am. J. Syph. 6: 64, 74, 82 (Jan.) 1922.

2. Schamberg, J. F., and Klauder, J. V.: M. Clinics N. America 5: 667 (Nov.) 1921.

3. Shivers, C. H. D.: The Clinical Value of the Kolmer Complement Fixation Test for Syphilis, Arch. Dermat. & Syph. 6: 344 (Sept.) 1922.

4. Harper, J., and Curtis, L. F.: The Kolmer Modification of the Wassermann Test, U. S. Naval M. Bull., November, 1922, p. 757.

5. Kilduffe, R. A.: The Kolmer Modification of the Wassermann Reaction, Arch. Dermat. & Syph. 6: 709 (Dec.) 1922.

6. Palmer, L. J., and Gibb, W. E.: Experience with the Kolmer Quantitative Complement Fixation Test for Syphilis, Arch. Dermat. & Syph. 6: 739 (Dec.) 1922.



treatment, which were each 4 plus. When first seen by us, in November, 1921, the patient's husband and five robust children were serologically tested, with the old technic, with negative results. A Kolmer test at this time on the patient's blood was negative. Dec. 20, 1921, the blood of the patient and of her new-born sixth child were negative with the Kolmer test.

When we come to study the question of negative reactions in known syphilitics, we find that they are fairly common, even with the most careful performance of the test. It must be recognized, of course, that all biologic tests, even when well performed, have their limitations, and the Wassermann test is no exception to the rule. Craig<sup>7</sup> agrees with most observers in estimating that fully 10 per cent. in primary, 5 per cent. in secondary and 12 per cent. in tertiary syphilis yield negative results with the Wassermann test as ordinarily performed. This may not be so important in the primary as it is in the secondary and tertiary stages, because in the first instance we possess the aid of the dark-field illuminator. These negatives are due to a lack of sensitiveness on the part of the old technic. On the other hand, the results obtained with the new technic are astonishing. In our series, eighty-four patients presented secondary, sixty-three tertiary, twenty-eight neurosyphilitic and twelve congenitally syphilitic lesions, diagnosed clinically and therapeutically; there were twelve primary lesions, the duration of each of which was more than fourteen days. All of these patients gave positive reactions by the Kolmer method.

#### SENSITIVENESS

No matter how sensitive a biologic test may be, its outcome depends on the presence of the reacting substances necessary to it. No complement fixation test can always yield positive results in the presence of the particular disease sought for, and this is just as true in syphilis as it is in tuberculosis, gonorrhea or sporotrichosis. The reason for this is that the complement fixing substance termed "reagin" by Neisser is not present at all times during the course of the infection. Furthermore, in syphilis at least, it may be present in one of the body fluids (spinal fluid) and not in another (blood). Again, as is well known, the disease may be and often is well on its way to the secondary stage before reagin apparently appears in the blood (only about 40 per cent. of the cases are positive in the first week of primary syphilis). Craig and others have likewise shown that, during the course of syphilis, reagin varies in amount from day to day in an inexplicable manner, and may even entirely disappear for from twenty-four to seventy-two hours after the ingestion of large amounts of alcohol. It is possible that this negativity may occur as a result of other as yet unknown influences. As a matter of fact, all syphilologists know that this apparent absence of reagin (which is followed by a reappearance at a variable period later) is often evident after a few treatments with antisyphilitic drugs, particularly the organic arsenicals. The latter fact should be emphasized, as an inexperienced physician may be misled into believing that cure has taken place. If all physicians would recognize that, once the Wassermann test has become positive in primary or secondary syphilitics, an adequate and fairly definite amount of treatment is required to reverse it and hold it negative for at least a two year period, then the pathologic changes of the

tertiary and endosyphilitic phases of syphilis would be largely avoided; after these changes have taken place, no amount of treatment will remove the sclerosed structures following chronic syphilitic infiltrates. It is possible that some of the negative reactions in known syphilitics are so either because there is an actual absence of reagin, or because it is present in too small a quantity to be detected by the older and less delicate method. Our studies with the new test incline us to the belief that, in most instances, the latter is the correct explanation. In virtually all cases, we have found the new test far more sensitive than the older three antigen technic.

Schamberg and Klauder, Shivers, Harper and Curtis, Kilduffe, and Palmer and Gibb have already shown that with the new technic the complement fixation reaction becomes positive earlier in primary syphilis than it does with the old test. In the present series, the number of primary lesions seen early (before the tenth day) was too small to form the basis for the expression of an opinion. However, in a number of the primary lesions, the amount of reagin detected was greater with the new technic than with the older three antigen tests. The value of this is apparent, as many primary lesions are negative to the dark-field illuminator as the result of previous local treatment which has caused destruction of the surface spirochetes, and generally negative serologically because, as has already been stated, the time of appearance of reagin in the blood varies with the individual and the sensitiveness of the test.

The quantitative character of the new test enabled us better to follow the gradual diminution in reagin over a much longer period of time during the course of treatment than has heretofore been possible. Since it is in large part on the patient's serologic status that we depend for our knowledge of the efficacy of treatment, this fact alone gives the test a value not to be underestimated. In patients whose Wassermann reaction was persistently positive with the older technic, it was likewise so with the Kolmer test and usually in higher degree; many negative reactions after treatment with the old test were still positive with the new test.

The sensitiveness of the Kolmer test was particularly of value in the patients with active tertiary lesions. In some of these, the older three antigen technic gave negative reactions, whereas, with the new test, the reaction was positive. Some of these patients had had one or more negative reports from other laboratories, with resultant improper diagnosis and treatment. Only recently, we were again enabled to confirm our clinical diagnosis in a man with a nodular syphilid about the mouth, of a year and a half's duration, who had been treated during that time with salves, caustics and the roentgen ray because his Wassermann test had been negative.

In patients with a recurrent positive Wassermann reaction after treatment, we have observed that the reappearance of reagin is detected sooner by the new quantitative test. In common with other syphilologists, we have always regarded a single report of a weakly positive reaction as inconclusive, particularly in asymptomatic cases. In many of these symptomatic and asymptomatic endosyphilitics, a higher reading with the new technic gave us greater assurance of the correctness of the diagnosis.

Space will not permit of the detailed report of many cases. A few selected from a large number will suffice to demonstrate the superior sensitiveness of the Kolmer test.

7. Craig, C. F.: Variations in the Strength of the Wassermann Reaction in Untreated Syphilitic Infections, *J. A. M. A.* 62: 1232 (April 18) 1914.



## ILLUSTRATIVE CASES

CASE 2.—R. P., a man, aged 45, contracted syphilis twenty years ago. He had inadequate and indifferent treatment. The pupils were sluggish and unequal; he was markedly nervous, and had a swelling in the metatarsal bones of one foot. He had recently had three negative blood Wassermann reactions in three different cities. As a result, no treatment was administered. A repetition of the test with the alcoholic extract of syphilitic liver, the acetone-insoluble lipoids and the cholesterolized antigen by Dr. Kolmer was likewise negative. With the Kolmer test, however, it was 4+, 2+, —, —, —, with the graded strengths of serum.

The spinal fluid was likewise negative with the old three antigen test, but with the Kolmer quantitative test it was 4+, 3+, —, —, —.

Intravenous treatment with neo-arsphenamin was carried out with the resultant disappearance of the swelling of the metatarsal bones and a general improvement in the patient's nervous and physical condition.

This case illustrates in a striking manner the importance of employing a sufficiently sensitive test.

CASE 3.—G. C., an old person with neurosyphilis, presented fixation of the pupils and a negative Wassermann reaction with the alcoholic extract of syphilitic liver and acetone-insoluble lipoids, and negative with the cholesterolized antigen, but with delayed hemolysis. The Kolmer quantitative test was 4+, 4+, 3+, —, —. The contrast here is pronounced.

CASE 4.—J. H. was an unrecognized neurosyphilitic patient with fixed pupils. The old three antigen test negative. The Kolmer test was 4+, 3+, 3+, —, —. Without the latter test, treatment might have been suspended.

## CONCLUSIONS

1. The Kolmer complement fixation test is distinctly more sensitive than the routine three antigen method.

2. With its employment, the serums of syphilitic subjects are slower in becoming negative, thus insuring more adequate treatment. The test detects relapsing positives at an earlier period than the older method.

3. The quantitative character of the test enables the physician to determine more accurately the serologic status of the patient, and to gage the influence of treatment.

4. In a fairly large experience we have never observed a false positive by the Kolmer test.

5. We regard the Kolmer test as an invaluable advance in the serologic study of syphilis.

1922 Spruce Street—1714 Pine Street.

**Vitamins.**—Have you heard the story of McCollum's calves? It reads like a fairy tale. In the year 1906, three groups of heifer calves were selected and placed on diets chemically equal: the fat, protein, and carbohydrate contents of the three were identical as were, consequently, the caloric values. One group was fed on corn, another on oats, and the third on wheat—the complete plant, stalk, leaves, and kernel being used in each case. The calves grew and thrived and only minor differences were noted until they were grown and produced young. The cows that had been fed on a wheat diet from babyhood produced calves that were born dead and weighed only 40 to 50 pounds, while a normal calf at birth weighs from 75 to 80 pounds. The oat-fed cows brought forth calves practically normal in weight, but these too were born dead. The corn-fed cows produced calves that were normal in weight and that were on their feet within a few hours. Considered from a casual point of view, these results would seem to indicate the superiority of corn above other cereals. The real point of advantage lay in the larger amount of green leaves and stalk in the corn diet, rather than in the grain itself.—Moore, *Nutrition of Mother and Child*, J. B. Lippincott Company, 1923.

## TRANSFUSION IN PURPURA HEMORRHAGICA

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During the last few months the blood service at the Boston City Hospital has dealt with a number of cases of purpura hemorrhagica of a severe and acute type. Our methods of treatment have probably been about the same as those of other clinics, but a survey of the literature would seem to indicate that our use of transfusions has been more persistent and vigorous than is common elsewhere. Certain determining factors bearing on this subject, while they are common knowledge among students of the hemorrhagic diseases, still lack the universal recognition that the urgency of the disease demands. The object of this brief report is to emphasize these facts and to illustrate their bearing on the subject of transfusion.

## DETERMINING FACTORS

1. Hemorrhagic purpura is the result of a numerical decrease of blood platelets. It makes no difference whether we are dealing with a primary or an idiopathic case, whether the condition is secondary to infection, or whether it is part of a primary general aphasia of the marrow or a replacement aplasia, as in some leukemias. If platelets are sufficiently low, the hemorrhagic symptoms will be present, intermingled with those of the causative condition, just as lack of platelets will be evident in the blood picture, however complicated it may be. There is even experimental evidence that when the platelets are overpromptly destroyed after entering the blood stream, the same phenomena will occur.<sup>1</sup> One may venture a prophecy that the name "purpura hemorrhagica" will some day disappear, or be relegated to that of a symptom-group resulting from thrombopenia.

2. The life of a platelet in the blood stream is only a few days—certainly not more than a week.

3. There is a strong tendency toward recovery, or at least toward remission. Of course, this statement does not apply to the thrombopenia of aplastic anemia or of acute leukemia, and in the secondary group of purpuras the tendency and duration are more or less dependent on the underlying infection. But most of the so-called idiopathic cases of purpura hemorrhagica do tend to recovery, although the patients are apt to suffer intermittent relapses, the later attacks being sometimes severer, but commonly milder than the earlier ones.

## OBJECTS OF TRANSFUSION

The objects of transfusion are, as in all hemorrhagic diatheses, twofold: First, to mitigate the anemia. This is not very important in the disease under consideration, except in severe and advanced cases. In straight purpura hemorrhagica there is no trouble with the red cell forming function of the marrow, and once the bleeding has ceased, recovery from anemia is usually prompt and satisfactory. The second and more important object of transfusion is to control the bleeding. This implies supplying enough platelets to permit natural hemostasis to occur.

The primary object of transfusion being to increase the number of platelets in the patient's blood, the question arises as to how largely the count is affected by this procedure. In our experience, a single transfusion

1. Lee, R. I., and Robertson, O. H.: *J. M. Res.* 33: 323 (Jan.) 1916.



seldom increases the patient's platelet count by more than 20,000. Obviously, it is desirable to give large transfusions. The patients are mostly young persons, with normal hearts, and there is little danger from overtransfusion. They can safely and advantageously receive as much blood as the donors can safely supply. We do not, therefore, advise small transfusions.

For the same reason we feel strongly that citrated blood is greatly inferior, in this disease at least, to whole, unmodified blood. In citrate transfusions, large numbers of platelets stick to the gauze filter and to the glassware, as can easily be proved by staining scrapings from the latter. To show how considerable the loss is, 0.1 per cent. of sodium citrate was added to the blood of a patient whose platelet count was 102,000. After a half hour the citrated blood contained only 18,000 platelets. The loss is very much less if paraffined tubes are used. For example, a donor's platelets were 280,000 immediately before a transfusion by Kimpton's method. A count of the platelets in a small quantity of blood left in the tube at the end of operation gave 220,000. I am aware of the paradoxical fact that, while citrate is used to prevent coagulation of blood outside the body, its action when injected is to shorten coagulation time, and that it has been used clinically for this purpose; but this has little to do with purpura hemorrhagica, in which coagulation time is not impaired. Indeed, there is reason to believe that citrate injections act by destroying platelets, thereby releasing substances that assist coagulation.<sup>2</sup> I would not go so far as to say that citrate transfusions should never be used in the disease under consideration—some good observers have had success with them. But both theory and experience seem to point unmistakably to the superiority of other methods when they are available. Perhaps direct, arm-to-arm transfusion by the original Crile technic has theoretical advantages, but for practical uses paraffined tubes are, of course, preferable. All of our transfusions have been done by the Kimpton-Brown method.

Another point is that usually more than one transfusion will be needed. Indeed, the first one may have no visible effect. A brief consideration of the facts already noted readily explains this. Hemorrhages generally begin when the platelets have fallen to some fifty or seventy-five thousand. By the time the patient comes to the table for this first transfusion, they may have fallen so far below this number that a single transfusion, however large and however efficiently performed, will not put them back to the point at which bleeding will be controlled. Several may be needed and, in view of the short life of the platelet, the intervals must be brief—not more than forty-eight hours. Even when the hemorrhages have been controlled, there is no certainty that they will not recur. If they do, transfusion should be repeated at once without reference to the presence or absence of anemia. Nothing is gained by delay, especially if the platelet count shows steady diminution; control will be more difficult each day one waits. Only boldness and persistence in transfusing will save life in severe cases. One cannot begin to feel safe until the patient has gone on without bleeding for a period considerably beyond the life of a platelet—say, ten days.

Let me add that the platelet count is not a very good criterion. Platelet counting is at best inaccurate. After cases have gone on for a month or so, they are apt not to run true to type, and we have been much

perplexed by a discrepancy between our counts and our stained smears. The former may show more than 100,000 platelets, and yet they may be almost absent from the smears. The presence or absence of bleeding from the nose and gums is a more reliable guide.

#### REPORT OF ILLUSTRATIVE CASES

CASE 1.—F. C., a man, aged 60, seen in consultation with Dr. F. H. Hubbard of Taunton, had been bleeding three weeks from the nose and gums, and the skin showed small purpuric spots and a few deeper ecchymoses. The bleeding time was fifteen minutes; no platelets were recognizable in the smears. Six days later, transfusion of 500 c.c. was done by the paraffined tube method. Next day the patient was admitted to the City Hospital, with moderate anemia and a platelet count of 44,000, still bleeding slightly from the nose. After an interval of five days, a second transfusion was done by Dr. Kimpton, again without much benefit. More or less oozing continued for a week, when a third transfusion (600 c.c.) was done. Bleeding then stopped completely, but in six days a fourth transfusion (500 c.c.) was required. The platelets fluctuated from 28,000 to 44,000 for the next fortnight, and, as might be expected, there was a little bleeding from time to time. Then the platelets began to rise steadily, and the hemorrhagic tendency ceased. Now, eleven months from the onset, the patient is apparently well. His last platelet count was 232,000, and the bleeding-time two and one-half minutes. Smears show plenty of platelets. He works steadily as a millwright, and though he often gets scratches and slight injuries, there is no tendency to abnormal bleeding.

CASE 2.—L. C., a boy, aged 8, had had nosebleed for five days. There were also skin hemorrhages of the two types almost always seen in this disease—fine, superficial, purpuric spots, and larger and deeper ecchymoses, the latter probably resulting from slight injuries. The platelets were 70,000, and there was moderately severe secondary anemia, with leukocytosis. The nosebleed stopped immediately after a transfusion of 450 c.c. by Dr. Kimpton. Two days later, with a platelet count of 76,000, there was a nosebleed, and on the fourth day another, so severe as to require a second transfusion (550 c.c.). The next day the platelet count was 240,000, though few were visible in the smears. This sudden increase, far beyond what could have resulted from transfusion, can only mean a sudden resumption of the function of platelet making by the marrow. Needless to say, there were no further hemorrhages, and he was shortly discharged with a count of 348,000, and a smear showing "loads of platelets."

CASE 3.—A. M., a girl, aged 17, had bled from the nose and gums for three weeks. The face and ankles were puffy, and there were numerous ecchymoses and purpuric spots. There was rather severe secondary anemia; the platelets numbered 58,000; the bleeding time was twenty-two minutes. Next day transfusion (600 c.c.) was done by Dr. Loder. The platelets rose to 80,000, but the bleeding continued, from the transfusion wound as well as from the nose. In forty-eight hours a second transfusion (500 c.c.) was done, with little benefit. The third and fourth transfusions, of 500 and 600 c.c., respectively, were done after intervals of three days, and the fifth (550 c.c.), after two days. Two days more and again she had a nosebleed and vomited some bright blood, the platelets being 52,000. Five days after the fifth transfusion they had fallen to 34,000, and hemorrhages of increasing severity required a sixth transfusion of 500 c.c. after an interval of ten days. The platelets then increased to 112,000, and there were no more hemorrhages. In the meantime, however, she developed acute nephritis and pericarditis with effusion. About a month after the last transfusion there was vomiting and intense abdominal pain, with tenderness and rigidity in the lower right abdomen. In view of her serious condition and the existence of hemorrhagic disease, operation was deferred and the acute symptoms soon cleared up. She continued, however, to have a septic temperature, and finally died nearly two months after the last transfusion. Necropsy showed gangrenous appendicitis, with a large abscess cavity, and fibrinopurulent pericarditis. The red marrow showed a normal number of megakaryocytes.

2. Neuhof, H., and Hirshfeld, S.: *Ann. Surg.* 76: 1 (July) 1922.



## COMMENT

These three cases have been selected because they illustrate what may be expected of bold and persistent transfusion in typical acute cases of a distinctly desperate type. Not all fall into this category. We have had one patient who recovered promptly and completely, though perhaps not permanently, after a single transfusion. Another was a chronic case, which ran quite a different course. Each transfusion sufficed to prevent bleeding for several weeks. After four or five recurrences at intervals corresponding to the menses, the tendency seemed to cease, and she was discharged apparently well. Some of these chronic and persistent cases, after a while, become quite bizarre and atypical. What, for example, can be said of a boy, aged 2, who developed perfectly typical purpura hemorrhagica while under treatment for diphtheria in the contagious department? After several transfusions his bleeding was controlled, only to relapse repeatedly. After nineteen months, during which Dr. Kimpton did twenty-eight transfusions and the family's stock of patience and money was exhausted, he died. During the greater part of his illness the platelets were above normal, sometimes over a million. The coagulation time was never more than slightly increased. Such cases are hard to explain, and leave one with the feeling that there is much to be learned about hemorrhagic diseases.

912 Beacon Street.

## PERIRENAL TUMORS

## REPORT OF CASE

ROBERT V. DAY, M.D.  
LOS ANGELES

In defining paranephritic tumors, Lecene<sup>1</sup> states that "this term applies to such retroperitoneal neoplasms as seem to have intimate anatomic relations with an otherwise normal kidney and which appear to have developed at the expense of either the fibrous capsule or the cellulo-adipose covering of the kidney."

## REPORT OF CASE

*History.*—Mrs. B. K., aged 43, admitted to Los Angeles County Hospital, Oct. 4, 1921, complained of a large tumor mass in the right kidney region, pain, constipation, slight nocturia, nausea and vomiting, and loss of weight and strength. About March 1, 1921, the patient first noticed dizzy spells and vomiting, which were severe at times. This kept up until about the first of August, when she noticed a mass forming in the right of the abdomen, which rapidly enlarged into the present large palpable tumor. The family history was irrelevant.

*Examination.*—There were no abnormalities excepting in the abdomen, the upper two thirds of the right half being filled with a firm, bulging mass, irregular in outline, extending 1 inch to the left of the umbilicus, and 2 inches below the costal margin. The mass moved on respiration, and was only slightly tender. There was no history of hematuria, infection or other urinary disturbance.

October 6, the cystoscope was introduced and both ureters were catheterized. The bladder was normal but, owing perhaps to the pernicious and constant vomiting and inability to take water, there was practically no urine. Doubtless, also, there was reflex inhibition of renal function as regards dye output, for no phenolsulphonephthalein was excreted in fifteen minutes from either side, and there was no bladder leakage.

The right pyelogram disclosed a practically normal pelvis, displaced mesially and partially overlying the spine. A good pelvic outline was obtained, and normal major and minor calices were well shown. There was no kidney outline shown on a simple film.

October 8, a combined phenolsulphonephthalein test made in the ward showed 45 per cent. in the first half hour and 20 per cent. in the second half hour. October 10, the ureters were again catheterized. The output of phenolsulphonephthalein in twenty minutes was 2.5 per cent. from the right side; there was some urine, but no phenolsulphonephthalein from the left side, and no bladder leakage of dye. The patient's urinary function was undoubtedly reflexly inhibited from the stress and discomfort of the cystoscopic procedure, since there was no dye output on the sixth and almost none on the tenth; but there was normal urine and a high output on the eighth when taken in the ward without cystoscopy.

A normal but displaced pyelogram with a tumor of such enormous size was evidence that the growth was certainly not primary in the kidney itself, as no growth of this size could possibly have its origin and principal development in the kidney substance without marked filling defect in the kidney pelvis. The diagnosis made at that time was perirenal neoplasm, but further and more specific information as to its origin from a particular organ or tissue, and what organs were involved or invaded by its growth, could not be foretold, although it was evident from its rapid growth that the tumor was malignant.

*Operation and Result.*—I felt that an operation would subject the patient to very grave immediate danger, and that the prognosis as to recurrence would be extremely bad if surgery was done, while a pancreatic or duodenal fistula was more than possible. Furthermore, nephrectomy might be necessary, and apparently the right kidney had quite as good a function as the other; so we felt that the case was inoperable. The patient, however, pleaded for an operation, and the internists who saw her thought she was entitled to her chance. She was, therefore, transferred to the general surgical ward and to the service of a member of the general surgical staff; October 22, she was operated on by Dr. A. B. Cooke, who reported that the operation presented no special difficulties. A right rectus incision was employed. When the abdomen was opened, it was apparent that the tumor was retroperitoneal. On account of its size and the dense adhesions present, the tumor was enucleated from its bed from the mesial side. The only untoward occurrence was a small injury to the vena cava at the junction of the renal vein, which was clamped and ligated in continuity. The patient left the operating room in excellent condition, only a few minutes more than one hour having been consumed in the entire procedure. Technically the operation was a transperitoneal nephrectomy.

The tumor weighed 8 pounds (3.6 kg.). The mass, when removed, resembled a kidney in outline. In order that the kidney itself might be seen, however, the mass had to be bisected, a reproduction of which is presented in the accompanying illustration. The kidney was examined by three pathologists, and proved to be a fibromyxosarcoma. At no point was the kidney, its fibrous capsule, or the ureter invaded. In addition to belonging in a rare class of neoplasms, the unique feature was the fact that the tumor was circumrenal, and the enormous mass symmetrically arranged around a normal kidney retained its typically reniform appearance.

The patient died on the twenty-second day after the operation.

*Necropsy.*—The anatomic diagnosis was: (1) compensatory hypertrophy of the left kidney; (2) dorsal decubitus of the left sacrum; (3) no metastases; (4) right suprarenal apparently not involved or invaded; (5) limited peritonitis involving the upper abdomen.

Chemical examination of the blood revealed, for each hundred cubic centimeters: sugar, 133 mg.; urea nitrogen, 17 mg.; preformed creatinin, 1.8 mg.

The specimen of the right kidney presented an oval tumor mass, 24 by 16 cm., having a slightly lobulated appearance.

1. Lecene, M. P.: *Paranephritic Tumors*, Tr. A. franç. de chir. 28: 583, 1919.



On one surface the ureter and kidney pelvis were seen. The pelvis was about normal in size and shape, was not distorted, and the calices could be traced outward. The ureter was of normal size. Section through the mass showed it to possess a distinct capsule definitely outlined. The kidney was compressed anteroposteriorly, but there was no invasion or infiltration of the tumor into the kidney. Grossly, the capsule of the kidney appeared intact and the tumor mass completely surrounded it, except over the pelvis and ureter. The cortical portion of the kidney was distinct. The tumor proper was firm and of a dense white appearance, and in areas had a mucinous appearance. One area in the periphery, which was oval-shaped—10 by 6 cm.—was encapsulated, was softer than the remainder, and was of a gray, semitranslucent, mucinous appearance, with several cysts in it. The average diameter of the cysts was 1 cm. The cut surface of the tumor showed numerous interlacing fibers coursing throughout.

Microscopic examination of a section from the peripheral portion showed numerous fibroblasts, with hyperchromatic nuclei, few mitotic figures, and a great abundance of intercellular substance. A section from the encapsulated, grayish, translucent portion showed numerous spindle-shaped cells which varied in size, but on the whole were relatively large; also numerous round cells. The nuclei were hyperchromatic, the cytoplasm acidiphilic and nongranular. There were numerous mitotic figures in all phases. There was almost complete absence of intercellular substance. There were also myxomatous areas; the intercellular substance was not typically basophilic—probably myxomatous areas of degeneration. A section including the kidney and tumor showed some compression of the tubules, but no necroses or invasion. The kidney capsule was intact and distinct. Van Gieson's stains showed the cells to be of a fibroblastic nature. The diagnosis was: large spindle-cell fibroblastic sarcoma.

## COMMENT

Garceau,<sup>2</sup> in a complete review of the hospital records—necropsies and operations—for a period of ten years at both the Massachusetts General Hospital and the Boston City Hospital, found only one perirenal tumor—sarcoma. Gurlt,<sup>3</sup> in an analysis of 14,630 tumors at Vienna, found only one paranephritic tumor—sarcoma. Albarran and Imbert<sup>4</sup> compiled seventy-two cases from the literature during the period from 1862 to 1901; none were listed as personal cases by Albarran and Imbert. In 1897, Adami<sup>5</sup> compiled forty-two cases of retroperitoneal lipoma from the literature, classified in three groups: (1) definitely perirenal; (2) of doubtful origin; (3) arising from mesenteric fat. Recent data from the Mayo Clinic<sup>6</sup> are not available. Up to July, 1912, however, operation had been performed there in only eighty-three cases of malignant tumors of the kidney. No mention is made of perirenal neoplasms. Kidney tumors themselves are not as common as is generally supposed, but occur probably fifty times as frequently as paranephritic neoplasms.

Detwiler Building.

2. Garceau, Edgar: Tumors of the Kidney, New York, D. Appleton & Co., 1910.

3. Gurlt: Lancet 1: 1275, 1909, quoted by Rolleston and Turner.

4. Albarran and Imbert: Renal Tumors, Paris, Masson & Cie, 1903.

5. Adami: Retroperitoneal and Perirenal Lipomata, Montreal M. J. 25: 529 (Jan.) 1897; 25: 620 (Feb.) 1897.

6. Braasch, W. F.: Clinical Data on Malignant Renal Tumors, J. A. M. A. 60: 274 (Jan. 25) 1913.

## Clinical Notes, Suggestions, and New Instruments

### CEREBROSPINAL RHINORRHEA: REPORT OF CASE \*

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Cerebrospinal rhinorrhea is a rare affection, characterized by the escape of cerebrospinal fluid into the nose.

#### REPORT OF CASE

A woman, aged 40, single, engaged in housework, was seen, Jan. 5, 1922, after she had been treated three months for sinusitis. She was complaining of a persistent dripping of clear fluid from the left nostril for the preceding three months. The family history was negative with the exception that obesity ran in the family. The patient had always been very stout; the present weight was 241 pounds (109 kg.); otherwise the past history was negative. There was no history of any head injury.

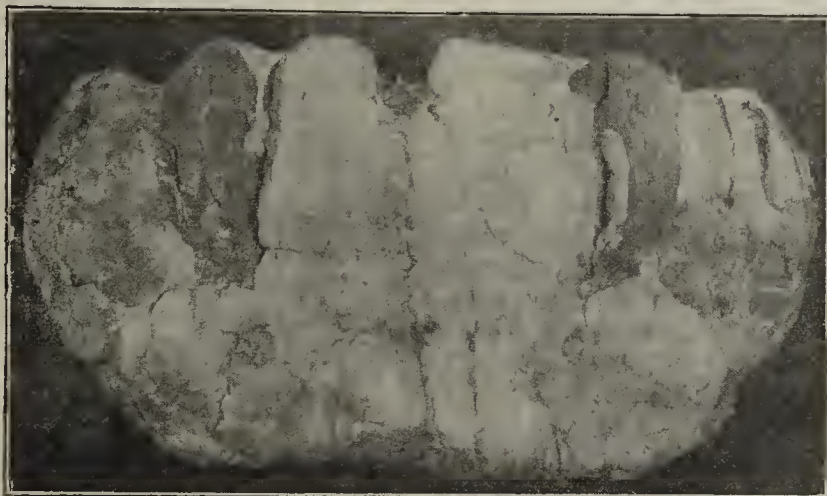
The present condition began, Oct. 23, 1921. After a very hearty laughing attack, followed by a severe sneezing, the patient was aware of a clear, limpid fluid from the left nostril; associated with this there was a severe frontal headache, which extended to the vertex. The headache had been constantly present, and diminished somewhat when the flow increased. At the time of examination there was a continuous dripping of clear, limpid fluid from the left nostril. The quantity for one hour was 1½ ounces (45 c.c.). The fluid was clear, odorless, tasteless and without sediment, and gave a slightly alkaline reaction. The flow had always come from the left nostril, with the exception that when I firmly packed the left naris, it then

came from the right side just as freely. At first the fluid would make the patient's handkerchiefs stiff on drying, but this condition lasted only during the first week. At present there was no alteration in the color or consistency of the handkerchief; when it was dried it was very soft.

The flow of fluid was greatly altered or increased by the position of the head. When the head was inclined forward, there was a marked increase in the flow; when the head was in the upright position, dropping of the fluid was less; when the head was tilted backward the fluid ran down the postnasal space into the throat, and was swallowed; from the frequent elevation of the thyroid cartilage in the act of swallowing, it would lead one to believe that the flow was profuse; when she lay in bed with the head hanging over the edge, face downward, there was a drop of fluid every two seconds. During the sleeping hours the flow continued the same as in the daytime: so much so that it necessitated the patient's either lying on her face or turning her face to one side. In the morning the pillow case was completely inundated, soft and stainless. The constant swallowing of this fluid at times had caused severe diarrhea. An unusual occurrence in this case—if the patient's statement was correct, and I think it was, in view of her intelligence—was that on three occasions, as she stated, the fluid escaped from her left ear, coming out in gushes for a short time. This occurred before she came under my care.

The flow of fluid also was increased when the patient worked hard, climbed steps and did any severe exercise, or

\* Read before the Section on Otology and Laryngology of the College of Physicians of Philadelphia, Dec. 20, 1922.



Tumor removed at operation.



when she became angered and excited. The patient carefully measured the quantity of fluid during the waking hours on several days; it amounted to 32½ ounces (960 c.c.) a day.

The external nose was straight; there was slight excoriation, and there were a few fissures about the left vestibule and the upper lip. The mucous membrane was congested in the right nasal fossa and markedly so in the left. The middle and inferior conchae in both nasal fossae were slightly hypertrophied. The nasal septum was sharply deviated to the right, and had a spur at the base anteriorly on the same side which touched the center of the concha nasalis inferioris. There was no evidence of any pus in the nasal chambers or postnasal space. The postnasal space was slightly congested, with an area of redness about the eustachian orifices; otherwise it was normal. The tonsils were of average size and were normal. Transillumination of the frontal sinuses revealed that they were rather large. The left maxillary antrums were slightly cloudy; the right sinus was normal. In carefully examining the nose on repeated occasions, I was unable to determine definitely where this fluid made its exit, but I think that it came from the posterior portion of the roof of the nose and not from the middle meatus.

The tympanic membrane of the left ear was intact, and there was apparently no opening in the superior wall of the external auditory canal.

The fluid that escaped from the left naris was clear, colorless, and without a sediment. The specific gravity was 1.006. It contained 36 cells per cubic millimeter; this number is higher than normal for spinal fluid, but the majority of the cells were epithelial cells and presumably from the nasal mucosa. The fluid contained traces of albumin and of globulin; the total was about 0.03 per cent., which is exactly the amount found in normal spinal fluid. There was a trace of dextrose, the quantity appearing to be identical with that found in normal spinal fluid. The chlorids amounted to 7.26 per cent., exactly as found in normal spinal fluid. The colloidal gold test yielded a 0000000000 reaction, as in normal spinal fluid. The quantitative Wassermann reaction was negative with serum in amounts of 0.1, 0.02, 0.004, 0.002 and 0.001 c.c. With cholesterinized antigen, alcoholic extract of syphilitic liver and acetone insoluble lipoids used as antigens, it was negative.

The general results of this analysis showed that the fluid had practically the identical composition of normal cerebrospinal fluid, and Dr. John A. Kolmer, who examined it, regarded it as such.

The patient's eyes apparently never gave her any trouble, but when first seen I referred her to Dr. L. Webster Fox for ophthalmoscopic examination. There was no prominence of the eyeballs, and no nystagmus; the pupils were normal in size and contour; they reacted to light and accommodation normally; there was no photophobia or lacrimation, and no paralysis of the ocular muscles. Jan. 9, 1922, there was a slight optic neuritis or what might be called a fulness of the optic nerve in the left eye due to a probable blocking of one of the accessory sinuses. January 10, however, there was marked improvement in the optic nerve sheath. The visual field was markedly contracted, January 9 and 10. After that date and on February 21, the fields were not pronouncedly contracted as in the preceding examinations. The distal vision was not impaired.

A thorough neurologic and mental examination was made by Dr. D. J. McCarthy, who reported no evidence of organic disease of the brain, although he was of the opinion that the headaches were suggestive of a localized low grade meningitis.

My own observation of this patient was that she was extremely nervous and easily excited to fits of anger; at times she became very morose, and confined herself to her room for indefinite periods, making her appearance only at mealtimes; she refused to speak to any one; at times when she became angered, she went into a fit of temper and became apparently violent. At all times apparently she was very much depressed. On two occasions she made a verbal threat to commit suicide. Prior to the onset of her present condition, she was a very pleasant person, worked hard at home with household duties, was very handy making miniature dolls

to represent world celebrities, and was extremely clever at embroidery. At present she refused to do any housework or cooking, and had lost her desire for doing any fancy work.

The roentgen-ray examination of the head and sinuses, made by Dr. Henry K. Pancoast, revealed the frontal sinuses negative; anterior ethmoid sinuses, clear; maxillary sinuses, clouded on the left side; septum, deviated to the right, the right side being entirely clear, and left side clear above; the lower turbinates filled the nasal cavity fairly well; sphenoid sinuses, clear; posterior ethmoid, clear; sella turcica, normal, there being some calcification in the frontal region, presumably of the meninges, over two small areas, which may not be of any significance.

The clear sphenoid and posterior ethmoid sinuses would seem to indicate that the cerebrospinal fluid did not come down in this region. The occlusion of the left side of the nose would suggest that the escape was more on that side. The significance of the clouded left antrum is uncertain.

Unfortunately, there was nothing that could be done in the way of treatment. It is not only useless, but it is harmful to check the flow of fluid. In many of the cases reported, when the flow ceased spontaneously or was checked, the patient became worse. The administration of drugs by mouth and local applications intranasally have proved useless. The latter form of treatment is positively contraindicated; such practice may cause encephalitis. Lumbar puncture has been tried and has proved unsuccessful.

The patient became so depressed that it was deemed advisable to send her to the hospital for a rest cure. After she had been in the hospital two and a half months, the flow of fluid from the left nostril entirely subsided; two weeks later she was suddenly taken with a chill, and a rise of temperature to 104, associated with numbness of the entire body and severe headache. Two days later she went into a semicomatose state with alternate periods of lucidity. The following day she developed a facial paralysis and tremors of the entire body. Two days later she developed auditory nerve deafness, and three weeks later died of acute encephalitis.

Medical Arts Building.

#### SUBSTERNAL THYROID WITH BILATERAL LARYNGEAL PARALYSIS \*

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It is now generally recognized that, in cases of thyroid disease, paresis or paralysis of the vocal cords may occur previous to an operation on the thyroid gland.

Any laryngeal impairment that is caused by an enlargement of the thyroid gland is nearly always unilateral. When a bilateral involvement exists previous to operation, it is usually caused either by some lesion in the central nervous system, such as syphilis, or by a malignant disease of the thyroid gland.<sup>1</sup>

The case here reported presents a bilateral involvement of the vocal cords, without demonstrable lesion in the central nervous system and without evidence of malignancy in the thyroid gland.

#### REPORT OF CASE

*History.*—D. G., a woman, aged 50, born in Poland, came to the Manhattan Eye, Ear and Throat Hospital, clinic of Dr. McCullagh, Jan. 7, 1922; complaining of difficulty in breathing and of choking attacks. The family history had no bearing on the trouble, with the exception that the maternal grandmother had a goiter. The patient had had pneumonia three times. Otherwise she was in good health up to eight years ago, when the menopause began. Since that time she was very nervous, had palpitation of the heart on exertion, felt very weak, and lost considerable weight. A physician of the board of health thought that she had tuberculosis of the lungs, although the sputum was negative. She was sent to

\* Read before the Section of Rhinology and Laryngology, New York Academy of Medicine, Jan. 24, 1923.

1. Crile, G. W., and Associates: *The Thyroid Gland*, Ed. 2, Philadelphia, W. B. Saunders Company, 1922, p. 58.



the Bedford Sanatorium, where she remained six months. There she had no cough, but lost more weight, altogether about 35 pounds (16 kg.). From her usual weight of 125 pounds (56.7 kg.) she was reduced to 92 pounds (41 kg.). Dr. Alfred Meyer, who examined her at the sanatorium, was convinced that she had no tuberculosis, and he advised her to go home.

The difficulty in breathing and choking attacks began in the early part of 1920. A laryngologist thought that the trouble was due to nasal obstruction, and he performed a submucous resection of the nasal septum. As the symptoms became worse, she was advised to have the tonsils removed. She then came to the Manhattan Eye, Ear and Throat Hospital. Besides the dyspnea and the choking attacks, which appeared only after exertion, she also complained of frequent colds, profuse, watery, nasal discharge, and slight hoarseness for the last two months. She had similar attacks of hoarseness in the last few years.

**Examination.**—The patient was fairly well nourished; the weight was 150 pounds (68 kg.). There was a fine tremor of the tongue and the outstretched fingers. The pulse rate was 120. The thyroid gland above the episternal notch was slightly enlarged, and the lower border of the gland could not be outlined. There was dullness on percussion over the upper part of the sternum. The left vocal cord did not move at all, and was shortened. The left arytenoid was fixed and tipped slightly forward. The right cord did not abduct, but in phonation approached the left cord. This explained the patient's fairly good voice. There was only a very small space between the vocal cords through which the patient was breathing. The left half of the larynx was completely paralyzed, and the right half presented a paralysis of abduction. Otherwise the general physical examination was practically negative.

On roentgen-ray examination, January 10, the trachea seemed to be in the median line, although there was a possible slight deviation to the left. There seemed to be a mass in the superior mediastinum which might be a thymus or a substernal thyroid. There was also some scoliosis from the second to the tenth dorsal vertebrae. After fluoroscopic examination, it was decided that the mass was a substernal thyroid.

The Wassermann reaction was negative.

**Treatment.**—The patient had four deep roentgen-ray treatments. These did not seem to do her any good subjectively. After each treatment she had to be in bed for three or four days on account of the extreme weakness, which followed the exposure to the rays. Her pulse rate and nervousness were not diminished. Objectively, the treatment seemed to have done some good, as shown by another roentgenogram, November 14. The mass seemed to be considerably diminished in size. The laryngeal picture, however, had not changed. She had no roentgen-ray treatments for about six months, as she was unwilling to have them. Since November 11, she has taken quinin hydrobromid, 5 grains (0.3 gm.), in capsules, three times a day. She now feels somewhat better, she is not so nervous, and the pulse rate is reduced to 98.

#### COMMENT

This case presents a difficult problem for proper management. I do not think that at this time an operation on the thyroid gland would do the patient any good. There is no case of complete paralysis of the vocal cords on record in which the patient recovered from the paralysis after operation on the thyroid gland. It is probable that the dyspnea which the patient suffers at times will become worse and more frequent on account of the very small breathing space between the vocal cords. It may then be necessary at any moment to do a tracheotomy. Until recently, no direct surgical attempts on the vocal cords have been made in such cases. Chevalier Jackson,<sup>2</sup> however, has performed ventriculocordectomy in a number of instances, operating by the direct laryngoscopic route. He believes that these patients regain a fairly good voice by the vicarious use of the false vocal

cords. Crile,<sup>1</sup> in one of his cases, did a submucous resection of the vocal cords through a laryngofissure, preceded by a tracheotomy. It is probable that a similar operation will have to be performed on this patient; but so long as the patient is comfortable, I feel that no operative work ought to be done.

161 East Seventy-Ninth Street.

#### A SECOND INITIAL LESION OF SYPHILIS ONE YEAR AFTER THE FIRST

WILLIAM C. NICHOLS, M.D., AND ARTHUR A. NICHOLS, M.D.,  
FARGO, N. D.

Mr. J., aged 28, a traveling salesman, consulted a physician in a neighboring city, Nov. 10, 1921, for a small sore on the glans penis. He was told that it was a simple infected herpes, and was given a jar of a blue colored ointment to apply. The lesion healed in about ten days. Jan. 4, 1922, he consulted us with a florid maculopapular eruption which was generally distributed over the forehead, face, trunk and extremities, with several mucous patches on the tongue and inside of the cheek. As the rash was typical, and there had been the history of a lesion, we did not think it necessary to make a Wassermann test.

Intravenous injections of 0.9 gm. of neo-arsphenamin were given, January 4, February 5, 12, 19 and 26, March 26, and April 2, 9 and 16. The patient refused to take mercury intramuscularly so was given a 50 per cent. ointment for inunctions. During the entire course of his treatment, up to and including August 15, the patient used only 3 ounces of this preparation, and no other form of mercury. A Wassermann test, June 25, was negative with alcoholic antigen, and positive with cholesterinized antigen.

The patient was advised to continue the inunctions and was given six more injections of neo-arsphenamin, 0.9 gm., June 28 and July 1, 5, 8, 15 and 22. He was instructed to return for a Wassermann test, October 1, but failed to do so. He came, Feb. 4, 1923, complaining of a sore on the inner surface of the upper lip, which he had noticed for about three weeks. This had been painted a few times with silver nitrate by a dentist. Examination showed a typical indurated chancre with some healing around the edges. It was about the size of a penny, with a flat, ulcerating surface. Slides stained by the Giemsa method showed many spirochetes. The Wassermann test was 4 plus. He was given 0.6 gm. of arsphenamin, February 11, and when he returned for the second treatment a week later, the sore had entirely disappeared.

This case is interesting in view of the fact that the patient was irregular in receiving the arsphenamin injections, and was very lax with the mercury inunctions, not only as to time, but also as to the quantity used throughout the period of treatment.

608 Front Street.

#### TRAUMATIC ASPHYXIA

A. H. TRAYER, M.D., ALBANY, N. Y.

C. V. M., aged 47, a farmer, who had always been in good health, was driving his automobile, weighing about 3,000 pounds, over a farm road, Aug. 7, 1922, when the car skidded and went over a bank of about 8 feet. The car tipped entirely over, resting on top of its body, with the wheels in the air. The patient was caught under the overturned car, his back on the ground and the top of the body of the car resting on the lower part of his chest. It was about twenty minutes before the car was jacked up and the patient taken out. The men who saw him thought he was dead, as his face was black. He was able to speak, and seemed conscious, but could not see. He was taken to his home, and I was called. I reached his home at 5:30 p. m., about thirty minutes after the accident.

The face and neck were black. The eyes were protruding. The conjunctiva was bulging from between the lids. Subconjunctival hemorrhages were present. He was blind, not

2. Jackson, Chevalier: Ventriculocordectomy: A New Operation for the Cure of Goitrous Paralytic Laryngeal Stenosis, Arch. Surg. 4: 257 (March) 1922.



being able to see an electric light flashed before his eyes. He was conscious. His clothes were covered with blood, apparently from the nose. The pulse could not be felt at the wrist, and the heart beats could be barely heard with the stethoscope. Morphine, strychnine and nitroglycerin were given. In about an hour the patient had improved so that it was thought safe to move him to the hospital. When he entered the hospital, the nurses thought he was a colored man. He vomited, but there was no blood in the vomitus. The urine showed no blood. During the night the abdomen became much distended; this condition was relieved by an enema. In the morning his color was the same, and the eyes were still bulging. He could see light, but was unable to recognize any one. The pulse was 110, the temperature, 99. Dr. A. J. Bedell, who examined the eyes, said that the hemorrhage was not in the eyes, and thought that the blindness was caused by the pressure of the blood on the nerve. The patient rapidly improved; August 14, the pulse was good, and the heart sounds were strong. The discoloration of the skin was less marked. He was now more the color of an Indian. The eyes were still red. He could recognize people, but could not see to read. Roentgen-ray examination showed fracture of the left transverse processes of the seventh, eighth and ninth dorsal vertebrae. The patient was taken home in an ambulance ten days after the accident. October 15, the patient said that he felt well; he had some pain in the hip. He could see fairly well with one eye, but the other was still blurred. Dr. Bedell's reports on the eyes were that at the first examination, August 8, there was marked congestion, with extreme subconjunctival hemorrhages which surrounded the cornea; the pupil reacted normally to light and accommodation; the media were clear. When last seen, November 2, the vision of the right eye was 20/15; the fundus was clear. Vision of the left eye was 10/200; the disk was white; there was a slight change in both veins and arteries. The field of vision showed decided contraction, and in the left eye there was a small central scotoma.

Little is said about this condition in the various textbooks, and different reasons are given for the symptoms.

27 Eagle Street.

**Treatment of Pneumonia.**—DR. HENRY F. STOLL, Hartford, Conn., writes: Don't think of pneumonia solely as a disease of the lungs. Heart failure is responsible for many fatalities. At the first examination and at each succeeding visit, note the position of the apex beat and observe the quality of the heart sounds; this can be done without disturbing the patient, and may enable one to detect the first signs of a failing myocardium or the beginning of pericarditis. Don't make a complete examination of the lungs every day unless you suspect pus; it exhausts the patient. Never direct a patient to "sit up" or to "roll over" if very ill, to examine his back; he may be turned on his side with little discomfort if it is done by reaching across the patient, placing one hand under the further shoulder, the other under the pelvis, and gently and slowly turning him toward you. Whenever there is a suspicion of diminished myocardial reserve, small doses of digitalis should be begun from the onset. Don't forget that an increase in restlessness and in the respiratory rate may be due to a distended bladder, and that many cases of incontinence can be cured by a catheter. Save in the very feeble, cold, fresh air is desirable—but be sure that you have a warm patient. When serum (Type I) is indicated, its curative effects are directly proportionate to the promptness of its administration. Quiet and sleep are absolutely essential, and the elimination of unnecessary exertion may be life-saving.

**Preventive Neuropsychiatry.**—One of the greatest opportunities for neuropsychiatry lies in the field of increasing interest in the study of persons who as yet have not developed actual psychoses, but who are on their way; and prevention here, as in many other fields, should constitute a more than laudable ambition.—William House, *California State J. M.* 21:29 (Jan.) 1923.

## New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

**MERCUROSAL.**—Disodiumhydroxymercurisalicyloxyacetate.— $(\text{HOHg})\cdot\text{NaOOC}\cdot\text{C}_6\text{H}_3\cdot\text{OCH}_2\text{COONa}$ . Mercurosal contains from 43.0 to 43.8 per cent. of mercury in organic combination.

**Actions and Uses.**—It is claimed that mercurosal is relatively free from irritant action, that it is eliminated without untoward effect on the kidney and that its toxicity is relatively lower than mercuric chloride and mercuric salicylate. Mercurosal is intended for the mercurial treatment of syphilis. It is administered either intramuscularly or intravenously. The Council accepted mercurosal as a comparatively non-toxic, comparatively non-irritating mercury salt which does not precipitate protein.

**Dosage.**—The usual intramuscular dose is 0.05 Gm. dissolved in 2 Cc. of sterile water every fourth or fifth day for ten or twelve doses. The usual intravenous dose is 0.1 Gm. dissolved in 5 Cc. of sterile water administered every second or third day for ten or twelve doses.

Manufactured by Parke, Davis and Co., Detroit, Mich. U. S. patent applied for; U. S. trademark No. 161254.

**Mercurosal R 1 (Intravenous).** Sealed tubes containing mercurosal 0.1 Gm.

**Mercurosal R 2 (Intramuscular).** Sealed tubes containing mercurosal 0.05 Gm.

Mercurosal is a white, amorphous powder. It is soluble in about 10 parts of water, insoluble in the usual organic solvents. Dilute aqueous solutions of mercurosal are quite stable when protected from air, but on prolonged standing may give rise to an insoluble compound. Mercurosal is decomposed by acids, strong reducing agents; salts of heavy metals, such as silver or lead, yield insoluble precipitates. From a 1 to 2 per cent. aqueous solution of mercurosal, calcium chloride precipitates a calcium salt which dissolves on subsequent dilution with water.

Mercurosal is faintly alkaline to phenolphthalein solution. When an aqueous solution of mercurosal is treated with an alkali hydroxide, a clear solution results. No precipitate is produced when an aqueous solution of mercurosal is saturated with carbon dioxide. When an aqueous solution of mercurosal is acidified with acetic acid or with mineral acids, a white precipitate is produced.

Heat mercurosal, 1 Gm., with hydrochloric acid (1:1), 25 Cc. until decomposition has taken place, cool and collect the precipitate; dissolve the precipitate in alkali; filter, reprecipitate, and crystallize from water; these crystals melt at 192 C (*salicylacetic acid*). Treat an aqueous solution of mercurosal with iodine solution, acidify with hydrochloric acid and collect the precipitate; after drying, the precipitate melts at 217 C. Saturate an aqueous solution of mercurosal with hydrogen sulphide; no precipitate is produced (*absence of "inorganic" mercury*).

Dry mercurosal at 100 C. for one hour; the loss does not exceed 1 per cent. Dissolve about 0.4 Gm. of dried mercurosal, accurately weighed, in water 5 Cc.; add concentrated hydrochloric acid, 5 Cc.; cover the beaker and digest on a steam bath until solution takes place; dilute to from 100 to 125 Cc. with water and saturate with hydrogen sulphide; collect the precipitate in a tared Gooch crucible; wash successively with water, alcohol and ether; dry to constant weight at 100 C.; the weight of mercuric sulphide corresponds to from 43 to 43.8 per cent. of mercury.

A physiologic test is made which shows the comparative shock which is caused by large doses of 2 per cent. solution when given intravenously. The immediate lethal dose per kilogram body weight of rabbit, practically identical with the dose causing shock of this animal, is determined by a series of experiments with a 2 per cent. solution of each lot of mercurosal. Carefully selected rabbits weighing from 2 to 4 kg. are injected intravenously. Death must take place in from 7 to 15 minutes. The average dose of mercurosal immediately lethal and causing shock is 0.025 gram per kilogram of body weight.

**PNEUMOCOCCUS ANTIBODY SOLUTION, TYPES I, II AND III COMBINED.**—An aqueous solution of specific pneumococcus antibodies, Types I, II and III in equal proportions, approximately free from the proteins of horse serum. The vaccine is prepared by adding to the serum from horses immunized by repeated injections of pneumococci, Types I, II and III, a heavy emulsion of equal proportions of pneumococci, Types I, II and III. The mixture is heated to kill the germs, centrifuged and washed with salt solution to rid it from horse serum. The washed sediment is emulsified in physiological solution of sodium chloride containing 0.25 per



cent. of sodium bicarbonate and then heated at 55 C. for from thirty minutes to one hour to cause dissociation of the antigen and the antibody. The mixture is centrifuged; the supernatant liquid removed, chilled, recentrifuged and filtered through a filter candle. The final product contains 0.035 Mg. of nitrogen per cubic centimeter.

*Actions and Uses.*—There is some evidence that this antibody solution is of value in the treatment of lobar pneumonia.

H. K. Mulford Company, Philadelphia.

*Pneumococcus Antibody Solution, Types I, II and III Combined-Mulford.*—Marketed in packages (M 48-010) of one 50 Cc. double-ended vials with one complete intravenous outfit, and in packages (M 48-160) of one 50 Cc. double-ended vials.

## Special Article

### THE CARE AND FEEDING OF INFANTS

(Continued from page 773)

[NOTE.—This is the twelfth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—Ed.]

#### WHOLE MILK DILUTIONS WITH CARBOHYDRATE ADDITIONS

In applying the rules for the feeding of normal, healthy infants it must be remembered, as previously emphasized, that each infant must be fed to meet its individual requirements. Therefore the rules must be so modified as to meet the individual demands. If milk dilutions with the addition of carbohydrates are used, the simplest and most natural standard is that which tells us how much milk and carbohydrates the baby should get per pound or per kilogram of body weight.

*To be exact, we should express, or at least be aware of, the number of grams of proteins, fat, carbohydrates, salts and water that the infant is receiving for each pound of its body weight.*

*If statistics on infant feeding were collected on this basis rather than on percentages of the ingredients in the milk mixtures (the total mixtures used by different physicians being of such variable quantity), the collected data would be far more valuable as a basis for future work in infant feeding.*

*In every instance the general health of the infant is of the greatest importance in estimating its capacity for assimilating the diet.*

*To meet the minimal per pound body weight protein (1.5 gm.), fat (1.8 gm.), and calcium oxid (0.08 gm.) requirements, the average normal infant will require each day a minimum of 1½ ounces (45 c.c.) of cow's milk. For each kilogram of body weight, 3.5 gm. of protein and 4.0 gm. of fat will be required. These will be furnished by 100 c.c. of cow's milk.*

*For normal full weight infants, the addition of one-tenth ounce (3 gm.) by weight of sugar to the milk mixtures will be required for each pound of body weight (6.6 gm. per kilogram).*

Water equal to 3 ounces per pound, or one-fifth the body weight, will meet the day's requirements for young infants, and amounts approximating 2½ ounces per pound, or one-sixth the body weight, will answer for older infants. The difference between the total day's fluid requirement and the milk in the mixture

can be added as boiled water or cereal water or a portion of it may be fed between meals.

Cereals in the form of thin gruels may be added to the milk mixtures in quantities varying from one-sixtieth to one-thirtieth ounce (0.5 to 1 gm.) for each pound of the body weight after the first or second month of life.

A mixture formulated to include these recommended amounts of food ingredients will average about 45 calories for each pound of body weight (Table 19).

Practical clinical experience has taught us that infants fed on cow's milk mixtures will frequently require approximately 2 ounces (60 c.c.) of cow's milk per pound of body weight, except during the first few weeks of life, when smaller quantities of whole or skim milk are indicated. Such mixtures will average approximately 55 calories for each pound of body weight.

In beginning feeding with cow's milk, mixtures must always be started as weak formulas, more often only 1 ounce (30 c.c.) of cow's milk being used to a pound of body weight, the strength being gradually increased to meet the infant's needs.

Underweight infants should be fed according to their weight at the initiation of feeding, the strength of the mixture being increased gradually but rapidly as the baby shows ability to handle the food, thus approximating the needs of a full-weight baby of the same age, in milk, sugar and water. These babies will frequently, therefore, require 2 ounces (60 c.c.) or more of milk per pound of body weight, and carbohydrates must added in proportion.

TABLE 19.—MIXTURE CONTAINING RECOMMENDED AMOUNTS OF FOOD INGREDIENTS

Milk, 1½ ounces	=	30 calories
Sugar, ¼ ounce	=	12 calories
Starch, ⅓ ounce	=	3 calories
		45

With the institution of a mixed diet, the infant thrives with less milk per pound of body weight.

In preparing to feed an infant these general rules should be followed:

The baby should be weighed, and one should determine whether or not its weight is within normal limits.

The amount of cow's milk necessary in the preparation of the mixture should be determined. One and a half ounces of cow's milk per pound of normal body weight at the baby's age is a safe minimum for a healthy infant. It should be remembered that normal infants may require as much as 2 ounces per pound of body weight.

The total daily quantity of water required should be determined, 3 ounces per pound (one-fifth the body weight) during the first six months and somewhat less, 2½ ounces per pound (one-sixth the body weight) after this period. Sufficient water (or cereal water) should be added to the milk to bring the total quantity of mixture up to the day's requirements in fluids.

Three grams of sugar, and later an additional 0.5 to 1 gram of starch should be added for each pound of body weight.

The curd should be made more digestible either by boiling, adding cereal water, or alkalizing the mixture.

#### MIXTURES ESTIMATED ON THE BASIS OF CALORIC REQUIREMENTS

The caloric needs of infants can be made the basis for formulating the constituents of their diet.



The protein, fat, salts and carbohydrates must be so combined as to meet the infant's needs in each of these elements.

Forty-five calories per pound, or 100 per kilogram, may be considered as meeting the minimal daily requirement of the average normal infant. Thin infants will require from 50 to 70 calories per pound (110 to 150 per kilogram).

The protein content should be supplied first; next the needs in fat, and last the carbohydrates.

*Protein.*—The normal infant will require a minimum of 1.5 gm., which provides 6 calories per pound; this is furnished by the protein contained in 1½ ounces of cow's milk. Per kilogram, 3.5 gm. provide 14.3 calories, furnished by 100 c.c. of milk.

*Fat.*—The needs in fat, 1.8 gm., or 16.5 calories, per pound, will, for most infants, be provided for by 1½ ounces of milk. Per kilogram, 4 gm., which provides 37.2 calories, will be furnished by 100 c.c. of milk.

TABLE 20.—AMOUNTS REQUIRED FOR AN INFANT WEIGHING TEN POUNDS

	Ounces	Calories
Milk .....	15	315
Sugar .....	1⅞	135
Water .....	15	...
Total .....		450

TABLE 21.—AMOUNTS REQUIRED FOR AN INFANT WEIGHING FIVE KILOGRAMS

	Gm. or C.c.	Calories
Milk .....	500	350
Sugar .....	37.5	150
Water .....	500	...
Total .....		500

*Carbohydrates.*—The sugar required in excess of the 2 gm. (8.2 calories) provided by the milk, when 1½ ounces is fed per pound, will amount to 3 gm., or one-tenth ounce, for each pound of body weight. This will furnish 12.3 calories, or a total of 20.5 calories inclusive of the sugar in the milk. Per kilogram, 6.6 gm. of sugar must be added to the 4.5 gm. that is contained in 100 c.c. of milk. The infant will therefore receive 11 gm. of sugar per kilogram, which provides 45.5 calories. Therefore, in feeding 1½ ounces of milk, plus one-tenth ounce of sugar, the following calories will be provided: protein, 6; fat, 16.5, and sugar, 20.5, or a total of approximately 43 calories for each pound of body weight. This requires considerable calculation in estimating the proper proportion of the ingredients and even more so if a second carbohydrate as starch is added.

In feeding 100 c.c. of milk <sup>41</sup> with 6.6 gm. of sugar added, the infant will receive, for each kilogram: protein, 14.3 calories; fat, 37.2, and carbohydrates, 45.5, a total of 97 calories. We will therefore make use of the enumerated facts for calculating the initial diet of a normal infant as follows: An infant weighing 10 pounds will require 15 ounces of milk. Calculating his caloric needs at 45 per pound, his diet should contain a total of 450 calories. Of this 315 calories will be furnished by his milk. The remaining 135 are to be supplied by carbohydrates, sugar or sugar and starch. If sugar is used, 1⅞ ounces will be required. Estimating 3 ounces of total fluids per pound of body

weight, 15 ounces of water will be added as a diluent. The total formula will therefore be constituted as in Table 20.

If estimated by the metric system, an infant weighing 5 kg. requires 500 calories, and should receive the amounts given in Table 21.

*While in the case of average normal full-weight infants this method of calculating the diet works out satisfactorily, when underweight infants are to be fed, the estimation of needed ingredients is less simple. It becomes even more complicated when cereals and other foods are added to the diet.*

This method is also more complicated than the one previously recommended for analyzing diets that infants are taking. In comparing the two methods of estimating the needed ingredients for the infant's diet, the first is based on the amounts of each of the ingredients needed, and the second on the calories required.

It is to be remembered that the quantities recommended under the heading Milk Dilutions with Added Carbohydrates, in the amounts suggested as minimums, furnish approximately 45 calories per pound, or 100 per kilogram, of body weight—the proportions needed by the infant. In the feeding of underweight infants, the amounts ultimately needed are calculated on the basis of the estimated weight of the normal infant of the same age and development.

UNDILUTED WHOLE MILK WITH CARBOHYDRATES

While undiluted milk has been used with varying degrees of success by some of the continental pediatricians, on the whole it is not well borne before the fourth month of life. When undiluted whole milk is to be fed to a young infant, it should first be boiled in order to change the protein so that it will be precipitated in the infant's stomach as a fine curd. Alkalizing the milk by the addition of sodium citrate or sodium bicarbonate also results in the formation of fine curds. If undiluted milk is used in the feeding of the very young infant, the size of the individual meal must of necessity be reduced under that recommended for diluted mixtures, or fewer meals must be given. Otherwise the caloric requirements of the infant will be exceeded. Water must be administered between feedings to meet the infant's needs for fluids.

While, as a routine measure of feeding, undiluted whole milk cannot be recommended, in some forms of vomiting and when gastric dilatation is present, small quantities of a concentrated food can often be fed to better advantage than larger quantities of milk dilutions. When carbohydrates are added, they should be in such amounts as are indicated by the infant's weight and age.

TOP-MILK DILUTIONS

By this method a definite number of ounces of the upper part of milk which has stood for a number of hours is used as a basis for preparing the mixture.

TABLE 22.—FAT PERCENTAGES

	Per Cent.
Upper 16 ounces.....	7
Upper 20 ounces.....	6
Upper 24 ounces.....	5

To carry out top-milk feeding successfully, the percentages of fat must be known which occur at various levels in 32 ounces (1 quart) of milk (containing 4 per cent. of fat) which has stood for six hours or longer.

41. Milk calculated as containing percentages as follows: protein, 3.5; fat, 4; sugar, 4.5.



This method endeavors to provide ample calories, and in this respect may be considered as successful. The chief advantages are that high fat and low casein mixtures can easily be prepared by the use of various dilutions of different layers of top-milk. With these mixtures there is the danger of feeding dilutions containing an excess of fat, not uncommonly reaching 5 or 6 per cent. when the upper layers are used. Such high fat mixtures not uncommonly result in fat indigestion. The early advocates of this method recommended it on the basis of the low protein content of the mixture, believing that a high casein content frequently caused acute intestinal disturbances. In the light of our present knowledge, however, we know that the casein of milk boiled or alkalized, or mechanically divided by the addition of cereals, is easily digested and causes nutritional disturbances only in exceptional cases. Owing to the tendency to use high dilutions, the sugar and salt content, more especially the latter, may be insufficient. This method of feeding has many advocates, and has given good results when its shortcomings are recognized and the diets properly balanced.

It will be of advantage to use the upper 16 ounces of the quart of milk (which will have a content of 7 per cent. fat and 3.5 per cent. protein), in feeding certain selected infants who are not making satisfactory progress on the whole milk dilutions. When desirable, the 7 per cent. top-milk may be used in the mixture in amounts of 1½ ounces per pound, or 100 c.c. per kilogram, as an alternative for whole milk. Such mixtures will average about 3 gm. of fat per pound, or 6.6 gm. per kilogram of body weight.

While this amount of fat is in excess of the amount needed, only in exceptional cases will a healthy infant be upset by it.

High fat mixtures are contraindicated in most infants with disturbed digestion, except those in which it is due to carbohydrate intolerance or protein sensitization. In these instances the fat will often replace, in part at least, the insufficiency of carbohydrate and protein.

CREAM AND SKIMMED MILK MIXTURES

By the use of 16 per cent. cream and skimmed milk as the basis for various milk modifications, a wide range of combinations of the various food elements may be obtained. By the use of cream and skimmed milk, an additional factor is added for calculating the percentage content of the dilutions. *This is, however, not a great objection. The fact should be recognized that most physicians think of mixtures in terms of percentages without recognizing the possibility that one set of infants may receive large quantities of these dilutions in their day's feedings, while another group, under different care, may receive much smaller quantities and fewer feedings of the same quality of mixture.* If we accustom ourselves to think of the number of grams of fat, protein, carbohydrate and salts per kilogram or pound of body weight, it will in all probability offer the greatest possibilities of all the methods so far advocated.

For feeding purposes, gravity cream (of which about 6 ounces or somewhat less may be obtained from a quart of a good quality of milk) contains fat, 16; protein, 3.5, and carbohydrate, 4.5 per cent. The skimmed milk may be obtained by carefully pouring or dipping off the cream. It should contain fat, 0; protein, 3.5, and carbohydrate, 4.5 per cent.

The average infant should receive: fat, from 1.5 to 2 gm.; protein, 1.5 gm., and as a minimum of added

carbohydrate, 3 gm. (above that contained in the cream and skimmed milk), per pound of body weight. These will be obtained by the use of cream (16 per cent.), skimmed milk and sugar, the contents of which are given in Table 23.

TABLE 23.—CONTENTS OF CREAM, SKIMMED MILK AND SUGAR

Cream (16 per cent. fat).....	in 1 oz.	5 gm. fat
Skimmed milk (3.5 per cent. protein).....	in 1 oz.	1 gm. protein
Sugar (100 per cent. carbohydrate).....	in 1 oz.	30 gm. carbohydrate

The amounts needed are given in Table 24.

TABLE 24.—AMOUNTS NEEDED

For each gram of fat .....	2/10 oz., or	6 c.c. of cream
For each gram of protein .....	1 oz., or	30 c.c. of skimmed milk
For each gram of carbohydrate ....	1/30 oz., or	1 gm. of sugar

In the mixture, the ingredients will be used in the amounts, *per pound of body weight*, given in Table 25.

TABLE 25.—AMOUNTS FOR EACH POUND OF BODY WEIGHT

Cream.....	3/10 to 4/10 oz. (fat, from 1.5 to 2 gm.)
Skimmed milk.....	1½ oz. (protein, 1.5 gm.)
Sugar.....	1/10 oz. (carbohydrate, 3 gm.)

In the mixture, the ingredients will be combined in the amounts, *per kilogram of body weight*, given in Table 26.

TABLE 26.—AMOUNTS FOR EACH KILOGRAM OF BODY WEIGHT

Cream.....	20-27 c.c. (fat, from 3.3 to 4.4 gm.)
Skimmed milk.....	100 c.c. (protein, 3.5 gm.)
Sugar.....	6.6 gm. (carbohydrates, 6.6 gm.)

In underweight infants, the amounts would be calculated on the basis of initial weight at the beginning of feeding, but these would be increased gradually to the amounts necessary for a normal weight infant of the same age.

Example: It is desired to feed a 10-pound baby, fat, 20 gm.; protein, 15 gm., and carbohydrate, 30 gm., the amount required for one day's food. These quantities would be supplied by cream, 4 ounces; skimmed milk, 15 ounces; sugar, 1 ounce, and water, 11 ounces, bringing the total fluid to 3 ounces for each pound. The small excess of protein in the cream may be considered negligible.

It will be noted that by considering the needs of the infant in terms of weight and forgetting the percentage content of the variable mixture, the danger of error is removed and the variation due to the individual physician is done away with. At the same time this method of feeding becomes much simplified and retains all of its flexibility.

There can be no doubt as to the accuracy of the modifications that can be obtained by this method of feeding. It has the disadvantage of requiring more calculation. In actual experience, the disadvantage to healthy infants of a possible relative excess of protein in mixtures made with simple dilutions of whole milk has been exaggerated. Practical experience presents convincing evidence that far more infants develop gastro-intestinal disturbance from feeding excessively rich cream mixtures. The greatest objection to high milk feeding is the resultant high protein constipated stool, which can be obviated by adding more sugar.

(To be continued)



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SATURDAY, MARCH 24, 1923

## DIET DEFICIENCIES AND IMMUNITY

Although the existence of deficiency diseases has become well established in recent years and has been exemplified with scientific precision in the case of at least scurvy and beriberi, the precise processes whereby the characteristic pathologic conditions arise are far from being solved. The instances mentioned represent clinically recognized maladies. It is more than likely, however, that less well defined symptoms have thus far escaped detection in the syndrome of effects attributable to faulty nutrition. The physiologists have demonstrated that when the diet is deprived partially or completely of an essential constituent, animals under experiment soon manifest the deficiency by a retarded rate or cessation of growth, by restricted propagation and by a general unhealthy appearance, so that if some indispensable food factor is withheld for a prolonged period, organic changes of a marked character may ensue.

It is quite possible, as Zilva<sup>1</sup> has specially emphasized, that, besides the more radical changes produced by deficient nutrition, decided modifications may take place in the body tissues and fluids which are not discernible macroscopically or microscopically, but which may nevertheless restrict physiologically the functions of the organism. In this connection arises the interesting problem whether the resistance to disease of the animal is in any way influenced by deficient nutrition. Zilva reminds us of the widespread belief that underfed persons are more susceptible to infection than well fed persons, and that when the former contract a disease they show less resistance and are more prone to succumb to it. But, he adds, terms like "malnutrition" or "underfed" are vague expressions and lack scientific definition. There is also no definite scientific evidence, even of a general character, to support this belief, in spite of its probability. If, however, there is a connection between imperfect nutrition and susceptibility to

disease, Zilva maintains that the subject becomes one of the utmost theoretical and practical importance.

When Zilva examined the possible effects of a series of diets, each of which was specifically deficient, no inequalities in the content of the agglutinins and amboceptors in the blood could be recorded in most cases. Thus, guinea-pigs fed on an unrestricted mixed diet, quantitatively restricted mixed diet and a scorbutic diet, respectively, showed no differentiation in the amboceptor and agglutinin titers, and in the complement activity of the blood. And now these studies at the Lister Institute in London have been supplemented by the investigations of Findlay and Mackenzie<sup>2</sup> at the Royal College of Physicians' Laboratory in Edinburgh. They failed to find any decrease in the opsonic activity of the blood serum in animals receiving diets evidently deficient in respect to vitamins A, B or C. Furthermore, there was no evidence to suggest any decrease in the phagocytic activity of the polymorphonuclear leukocytes as the result of a diet deficient in vitamin C. These results harmonize with the contention of Bordet and others that the phagocytic power of the body appears, after all, to be a relatively stable function, and one not easily influenced by conditions that profoundly affect other vital activities.

## THE TEST OF HYPERTHYROIDISM

The limitations of the so-called Goetsch test as an index of hyperthyroidism have already been pointed out in THE JOURNAL.<sup>3</sup> This reaction consists in the response of patients to subcutaneous injections of small doses of epinephrin, a positive result being manifested by an increase in pulse rate and rise of blood pressure, exaggeration of tremor, palpitation and nervousness, appearing within a short time after the injection. The epinephrin was at first believed to produce sensitization of the organism so that a synergistic action of the thyroid secretion would manifest itself by pressor effects. Although Goetsch originally thought that the phenomenon might be of value in the diagnosis of thyroid disease by allowing a surplus output of thyroid hormone to manifest itself more readily, he later pointed out that the reaction, after all, is indicative only of alterations in the sympathetic system; that is, it becomes an index of sympathetic overstimulation.

In recent studies at the Department of Pharmacology at Columbia University, Lieb and Hyman<sup>4</sup> have demonstrated anew that the reaction to epinephrin measured in the response of blood pressure varies

2. Findlay, G. M., and Mackenzie, R.: Opsonins and Diets Deficient in Vitamins, *Biochem. J.* **16**: 574, 1922.

3. The Goetsch Test in Healthy Persons, editorial, *J. A. M. A.* **79**: 136 (July 8) 1922.

4. Lieb, C. C., and Hyman, H. T.: Studies of Graves' Syndrome and the Involuntary Nervous System, IV, The Vascular Response of the Pithed Cat to Single Intravenous Injections of Adrenalin, *Am. J. Physiol.* **63**: 60 (Dec.) 1922; V, The Vascular Responses of the Pithed Cat to Repeated Intravenous Injections of Equal Doses of Adrenalin, *ibid.*, p. 68; VI, Attempts to Alter the Vascular Response of the Pithed Cat to Repeated Injections of Similar Doses of Adrenalin, *ibid.*, p. 83; VII, On the Mechanism of Sensitization to Subcutaneous Injections of Adrenalin, *ibid.*, p. 88.

1. Zilva, S. S.: The Influence of Deficient Nutrition on the Production of Agglutinins, Complement and Amboceptor, *Biochem. J.* **13**: 172 (July) 1919.



widely with the condition of the subject. This is contrary to the widespread belief that the circulatory system will respond with the accuracy of a chemical balance to any dose of epinephrin.<sup>5</sup> These studies point to the frequency of "variables" in the involuntary nervous system not due to sensitization. They are frequently present when evidences of "tire" are present, and are definitely not associated with hypertonicity of the portion of the nervous system referred to.

Of foremost importance is the observation that the apparent "sensitization" by epinephrin may develop or persist even in the complete absence of thyroid glands. This fact at once indicates that the reaction is due to alterations in the peripheral structures of the involuntary nervous system rather than to changes in the thyroid. The demonstration that the involuntary nervous system is not a "constant" in its responses, and that the variations need not be due to sensitization by some artificially introduced variables such as the thyroid hormone, removes a fundamental postulate of the Goetsch test. It also jeopardizes the validity of the theory which holds that exophthalmic goiter is due to a synergism between the suprarenal medulla and the thyroid gland. As usual, the conflict of opinion is with theories of pathogenesis, not with the facts of direct observation.

#### THE BACTERIAL ACTION OF ULTRAVIOLET LIGHT

It has long been appreciated that light has potencies for good or harm, but it is only in comparatively recent times that the details of its effects have begun to receive serious scientific consideration. This awakening of interest has been due in part to the growing knowledge of various manifestations of radiant energy, and their application in various fields of human experience. A recent reviewer<sup>6</sup> has remarked that although the physiologic effect of sunlight seems at first sight indefinite and of dubious importance, the action of far ultraviolet light on normal tissue, and the action of near ultraviolet and visible light under certain pathologic conditions, has been investigated enough to show that there are well-defined effects due to light, closely related to the physiologic results of exposure to radium and the roentgen rays. These results, she adds, are gradually assuming considerable importance in clinical medicine, and present theoretically an interesting but illusive problem in physiology.

Nearly half a century has elapsed since Downes and Blunt, in 1877, showed for the first time that sunlight retards the growth of bacteria, and proved that this was not due to heat, since the same result was obtained with tubes cooled in ice. Much emphasis has been placed, in a popular way, on the bactericidal action of light.

In their natural environment, micro-organisms may be temporarily but are not usually exposed to ordinary light. Some of them will at best only occasionally come into contact with the direct rays of the sun; for this reason it becomes all the more desirable to learn how these living forms react to the various sorts of artificial irradiation to which they can be exposed at the will of the observer. A recent investigation by Bayne-Jones and Van der Lingen<sup>7</sup> at the Johns Hopkins University indicates that the bactericidal action of light is confined to the ultraviolet region of the spectrum. An increase in hydrogen-ion concentration of the fluids in which the micro-organisms were suspended during their exposure to irradiation with ultraviolet rays increased the velocity of the bactericidal action. However, neither temperature nor the hydrogen-ion concentration rendered bacteria sensitive to the longer wave-lengths of light. As the invisible roentgen rays and radium rays are known to destroy living tissues by long exposures, micro-organisms cannot be considered less resistant, although the bactericidal effect of such short rays as radium affords is still somewhat debated. The next step will be to learn more precisely to what degree and how ultraviolet irradiation may be employed to replace chemical antiseptics.

#### THE CARDIAC FEATURES OF VOMITING

A student beginning the study of medicine must marvel at the lack of knowledge that still attaches to some of the most common experiences in the routine of the physician. Vomiting affords an illustration in this connection. The symptoms have been known since physical manifestations were made the subject of medical observation; and emetics are among the oldest drugs to be employed by the physician. Although nausea and vomiting can be produced without any immediate contact of the emetic agent with the alimentary tract, physiologists have been slow to admit that the latter plays no part in the reception of the stimuli which bring about the act. It has been assumed, for example, that when substances taken in some way other than orally produce vomiting they do so by being excreted into the alimentary canal, and thus in ultimate analysis really act by producing local irritation there. Only in comparatively recent years has the existence of a true vomiting center in the neighborhood of the respiratory center of the medulla been more generally accepted.

The stimulation of the medullary center either directly or reflexly leads to nausea and vomiting.<sup>8</sup> Apomorphin stimulates it directly, and consequently brings about emesis even after subcutaneous dosage. It is widely supposed that the substances which act

7. Bayne-Jones, S., and Van der Lingen, J. S.: The Bactericidal Action of Ultraviolet Light, *Bull. Johns Hopkins Hosp.* 34: 11 (Jan.) 1923.

8. A good outline of the subject will be found in Hatcher, R. A., and Wilbert, M. I.: *Pharmacology of Useful Drugs*, Chicago, American Medical Association, 1915, p. 308.

5. Elliott: *J. Physiol.* 44: 374, 1912.

6. Clark, Janet H.: The Physiological Action of Light, *Physiol. Rev.* 2: 277 (April) 1922.



reflexly to produce vomiting do so by irritating the alimentary mucosa. This is, of course, one of the ways in which emesis results. But Hatcher and Weiss<sup>9</sup> have shown that intravenous injection of digitalis preparations produces vomiting in animals even when the entire gastro-enteric tract has been removed, but that the drug does not act emetically like apomorphin when applied directly to the vomiting center. Digitalis substances, therefore, do not exert their emetic action by direct stimulation of the center or through gastrointestinal irritation, but reflexly by the stimulation of sensory fibers in the heart. Severance of all nervous connections between the heart and the medulla stops the vomiting caused by digitalis products.

Similarly, Weiss and Hatcher<sup>10</sup> have more recently demonstrated that the heart is the seat of reflex vomiting following the intravenous injection of tartar emetic. After gastro-intestinal administration, the path taken by afferent emetic impulses depends on the innervation of the organ concerned, passing sometimes by the vagus and sometimes by the sympathetic system. The coincidence of cardiac and emetic action in numerous drugs has thus served to direct attention to the heart as the probable seat of the emetic action of various substances. Consequently, drugs that block the impulses from the heart may often stop or greatly ameliorate existing emetic reactions.

## Current Comment

### THE SPLEEN AND RED BLOOD CORPUSCLES

The fact that splenectomy, either in youth or in adult life, is followed by few detectable changes in the physiologic reactions of the organism affected by the operation adds to the difficulty of deciding what the use of the spleen may be. It no longer satisfies the critical student to read that this organ is "the great blood filter purifying the blood in its passage by taking up the particles of foreign matter and effete red corpuscles." If there is normally a more or less continuous formation of red blood cells, a corresponding disintegration must be going on, so that no accumulation of erythrocytes ensues. Long ago it was maintained, by Hunter, for example, that the spleen is concerned with this work of destruction. Lately this view has acquired a new popularity, and found application in the treatment of certain types of anemia in which splenectomy is reported to have been beneficial by averting continued undue destruction of the red cells. Evidence for the destructive function is further acclaimed in the familiar appearance of fragments of erythrocytes in the spleen pulp. The destructive action of the spleen is further implicated in the studies of Pearce, indicating an increased resistance of the corpuscles to hemolysis after splenectomy. A special

instance has been described by Kolmer in their behavior toward venom which ordinarily easily hemolyzes the red cells. In the physiologic laboratory of the University at Groningen, Bolt and Heeres<sup>1</sup> compared the behavior of blood before and after contact with the spleen, under otherwise comparable conditions, to hypotonic salt solutions which would tend to lacerate the red corpuscles. The results show that the organ has the power of diminishing the osmotic resistance of the erythrocytes. These are prepared for hemolysis, which takes place partially in the spleen itself. According to the Dutch investigators, the point of attack of the hemolytic power of the spleen lies in the surface layers of the erythrocytes where the lipoids are concentrated.

### THE COMPARATIVE ELIMINATION OF INORGANIC COMPONENTS FROM THE BLOOD

The application of chemical analysis to the examination of the blood has served to elucidate what the excretory functions actually accomplish for the body. As the circulating medium is the carrier of waste products to the organs of elimination, it became apparent long ago that inability to excrete them properly should result in changes in the composition of the blood. There is a growing realization that not all waste constituents in the blood are excreted with equal ease. For example, in 1916, Myers, Fine and Lough called attention to the fact that very high figures for uric acid may be noted, not only in cases of advanced interstitial nephritis, but also in the very early stages of the disease, before a retention of either the urea or the creatinin had taken place. It was suggested that, when symptoms of gout were absent, a high blood uric acid might be a valuable early diagnostic sign of nephritis, possibly earlier evidence of renal impairment of an interstitial type than the classic tests of proteinuria and cylindruria. What has proved to be true regarding a sort of selective capacity for the elimination of certain common organic constituents of the blood by the renal epithelium appears to apply somewhat similarly to some of the inorganic components that normally find their way into the urine. At any rate, Denis and Hobson,<sup>2</sup> in studying the various inorganic ions in the blood serum of patients with nephritis and cardiorenal disease, have noted an unmistakable tendency toward increased values for phosphate and sulphate, in contrast with sodium and chlorin. The latter two are excreted with great ease, and, even in the case of the badly damaged kidney, retention of these elements seldom occurs; in this respect they may be said to resemble creatinin. On the other hand, the sulphate ion is apparently excreted with difficulty, so that in kidney insufficiency the concentration of this fraction may increase enormously, in some cases to 3,000 per cent. above the normal value; in this respect the sulphate ion may be likened to the uric acid fraction, although the percentage increases observed are far above any concentrations of uric acid so far reported. Hence Denis and Hobson incline to believe that the evidence that has been accu-

9. Hatcher, R. A., and Weiss, Soma: The Seat of Emetic Action of the Digitalis Bodies, *Arch. Int. Med.* **29**: 690 (May) 1922.

10. Weiss, Soma, and Hatcher, R. A.: The Mechanism of the Vomiting Induced by Antimony and Potassium Tartrate (Tartar Emetic), *J. Exper. Med.* **37**: 97 (Jan.) 1923.

1. Bolt, N. A., and Heeres, P. A.: On the Influence of the Spleen on Red Blood Corpuscles, *Biochem. J.* **16**: 754, 1922.

2. Denis, W., and Hobson, S.: A Study of the Inorganic Constituents of the Blood Serum in Nephritis, *J. Biol. Chem.* **55**: 183 (Feb.) 1923.



mulating for some years would make the hypothesis of a selective activity on the part of the kidney for the inorganic constituents of the blood seem to rest on a relatively sure foundation.

#### THE STORAGE OF VITAMIN A IN THE BODY

Among the various features of physiologic interest in connection with the modern study of the vitamins, the problem of their occurrence in milk has been outstanding. Scarcely more than a decade has passed since the existence of specific potencies indispensable to well-being was first recognized to exist in the secretion of the mammary gland. Meanwhile, it has become clear that the content of milk in some of the vitamins at least may vary widely. For the B factor the evidence is still somewhat conflicting, American investigators in general following the lead of Osborne and Mendel in being more skeptical than the English observers as to the occasional occurrence of marked enrichment of milk in this vitamin. With respect to vitamins A and C, however, it is generally accepted that the feed of the lactating animal may play an important part in modifying their presence in milk. Thus, in general, summer milk derived from cows in pasture tends to be superior in antiscorbutic potency to winter milk derived from animals living on air-dried roughages and grains that are poorer in vitamin C than are the fresh green feeds. The content of fat-soluble vitamin A in milk is also markedly influenced by the diet of the cows. Lately, Sherman and Kramer<sup>1</sup> of Columbia University have found that the storage of vitamin A in the body is markedly affected by previous conditions of the diet. Even at weaning time, young animals may already have a considerable store of vitamin A in the body, and thus be able to continue to grow for some time on a diet carefully freed from vitamin A but adequate in all other respects. The body can also store vitamin A at later ages. Sherman and Kramer remark that the differing stores of vitamin A in the bodies of experimental animals, even at early ages, has undoubtedly been a large factor, not fully appreciated, in previous experiments dealing with this vitamin, and in attempts to determine the vitamin A content of different foods. In the domain of infant feeding, it has a special bearing in relation to the transition periods when the young are being weaned to the artificial foods of later life. Some of the commonest of these, as the cereals, which often enter largely into the dietary of the very young, are comparatively poor in vitamin A. It is a great advantage to the young, therefore, to have a liberal factor of safety in a store of vitamin A in their own bodies. And here, in turn, the importance of a suitable diet of the mother during the period of lactation cannot be overlooked. The richness or paucity of her food in vitamins may have a cumulative significance for weal or for woe to the nursing offspring.

1. Sherman, H. C., and Kramer, M. M.: Experiments on Vitamin A, *Proc. Soc. Exper. Biol. & Med.* 20: 201 (Jan. 17) 1923.

**Telescopes.**—Galileo's first telescope collected about eighty-one times as much light as the human eye. The Mount Wilson telescope, the largest in the world today, collects 160,000 times as much light as the human eye.

## Association News

### THE SAN FRANCISCO SESSION

#### Invitation from the Oregon State Medical Society

The board of councilors and members of the Oregon State Medical Society, through the secretary, Dr. Otis B. Wight, extend a cordial invitation to Fellows and members of the American Medical Association who go to San Francisco on special trains to stop at Portland and be the guests of the Oregon State Medical Society during a day's excursion up the Columbia River Highway. The trip will require at least three hours each way, allowing time for dinner. Special trains arriving in Portland in the morning or by early afternoon will be met by members of the Oregon State Medical Society, and automobiles will be available for their accommodation. The return to the trains will be in time for their departure at any time in the evening after 10:30.

#### No More Accommodations Available on New York Special

The train for the special twenty-five day tour from New York City to the meeting of the American Medical Association in San Francisco arranged for under the auspices of the Medical Society of the State of New York is already completely filled. Another train will be arranged for if 125 more subscribers can be secured. It will be necessary for applications for accommodations to be in not later than April 15. Applications should be sent to Mr. J. S. McAndrew, Tour Manager, Lifsey Tours, Inc., 1472 Broadway, New York, N. Y.

EDWARD LIVINGSTON HUNT,  
Secretary, Medical Society of  
the State of New York.

#### Post Convention Tour to Hawaii

In connection with the telegraphic invitation extended by Hon. Wallace R. Farrington, governor of Hawaii, as published in *THE JOURNAL*, March 10, the following comprehensive tour has been arranged:

Leaving San Francisco, night of June 29, the party will sail from Los Angeles, June 30, on the *Calawaii*. Visit to live volcano at Kilauea. Automobile drives round Honolulu and the island of Oahu. Reception by Governor Farrington. Visits to Kalihi leper receiving station and hospitals. Returning, arrive at Los Angeles, July 21. Total inclusive cost from Los Angeles back to Los Angeles, \$415. Reservations and booklets may be obtained from Fred. J. Halton, 714 Marquette Building, Chicago, former Secretary, Hawaii Tourist Bureau, who will personally escort the party to Hawaii.

### ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 5, 6 and 7, 1923

(Continued from page 779)

#### MEDICAL EDUCATION

##### MARCH 5—MORNING (Continued)

#### Preliminary Report of the Committee on Trained Nursing to the Council on Medical Education and Hospitals of the American Medical Association

DR. ROBERT W. LOVETT, Boston: The growth of the profession of trained nursing has been so rapid and so extensive that it is impossible that its educational side could have kept pace with its numerical growth. In 1880 there were fifteen training schools for nurses in the United States, with 323 pupils; in 1920 there were 1,755 schools, with 55,000 pupils. The number of schools increased 116 times over, and the number of pupils 170 times over between 1880 and 1920. Nor has the number of women applying for admission to training schools shown any signs of falling off, if one may generalize from the figures of the number of credentials presented for



entrance to the training schools of the state of New York for the three years ending July 31, 1920, 1921 and 1922.

The educational training of the nurse as it at present exists in the United States is not standardized, systematic or uniform in the matter of requirements for entrance, length of the course, and methods of teaching. Those persons who live in the medical centers and who come in contact only with schools connected with the great modern hospitals can hardly form an idea of the conditions existing in the country in general away from medical centers.

#### DEFECTS IN TRAINING SCHOOLS

There are five defects in the training schools of today:

1. The course, on the whole, is unsystematized, unstandardized, and far from uniform in the different schools.
2. There is in general thought to be too little systematic instruction in practical work in most courses, and too much theory; and whether or not this is true, there is certainly a lack of correlation between the two elements.
3. Many of the teachers in these schools are poorly equipped.
4. There is a waste of time of pupil nurses in uneducational routine work.
5. Many schools are connected with hospitals where clinical facilities are utterly inadequate.

#### CORRECTION OF DEFECTS

The correction of the defects may be approached by one of three ways: 1. We may strive to raise the upper level of the profession by means of the development and extension of the university school of nursing. 2. We may attempt to define the lower level of what may be considered as the education of a bedside nurse, to attempt after defining it to raise this level and to prevent so-called training schools from continuing as such when they do not conform to reasonable prescribed standards. 3. We may attempt to do both—to define and raise the lower level by a standard minimum curriculum with measures for its enforcement, and develop the university school of nursing to educate more and better teachers to help in carrying this out, and to assist in graduate teaching.

In approaching this matter by any one of these ways, it becomes necessary to consider the following remedial suggestions: (a) the desirable length of course for the bedside nurse of private practice; (b) supplementary graduate instruction for advanced or special nurses; (c) instruction to provide for subsidiary nursing service. It is the opinion of the committee that any proper nursing education should be based on the completion of a four years' course in a high school. In only six states is this a legal requirement at present, whereas in twenty states one year in the high school or its equivalent is considered sufficient. In five states, a grammar school education is all that is required.

#### MECHANISM FOR CARRYING OUT RECOMMENDATIONS

A committee of this sort which suggests a scheme of improvement, and leaves the matter there, fails partly in its purpose unless it recommends at the same time a mechanism by which recommendations, if adopted, may be carried out. The committee is of the opinion that:

1. The primary requirement of the present situation is the formulation and adoption of a standard minimum curriculum for the training of the bedside nurse of private practice; that this should be formulated with great care, be absolutely definite and simple, prescribe the percentage of time to be allotted to each subject, the character and sequence of the instruction, and provide for practical experience as well as theoretical instruction. This curriculum should be such that it could be carried out by relatively small hospitals and hospitals away from medical centers. If too elaborate, it will be useless.

2. A committee for this most important and responsible work should be appointed, containing in its membership physicians who are competent clinical teachers, representative nurses, and at least one educator, neither a physician nor a nurse. This committee should be arranged for by the American Medical Association in conjunction with the National League of Nursing Education, each having equal representation and appointing its own representatives. The

educator should be selected by the other members of the committee when appointed.

3. After a proper time, training schools which do not conform to the scheme outlined by such a committee should be classed and published as schools not accepted by whatever body or committee or organization is made responsible for the matter.

4. The educational requirement for admission to the training school shall as soon as possible be made four years in high school.

5. The course for the bedside nurse of private practice should be made two years and four months.

6. Necessary changes in legislation should be advocated in those states requiring the three year course.

7. Subsidiary nursing should be favored and adopted, and be subject to the same committee or organization recommended (in paragraphs 2 and 3, page 29), which should formulate for it a standard minimum course, of the same simple character as the one described for the training of the bedside nurse.

8. Postgraduate facilities should be provided for the nurse who has graduated from the two year and four months' course, and who desires to qualify herself for special nursing or for teaching, and the university school of nursing can be of much help in raising the standard of teaching.

9. The nurse's training must be regarded as a serious educational problem requiring more of her time for educational work, with some reduction in the waste of her time in noneducational ward routine.

10. Better standards of teaching will be required in the improved schools from both physicians and nurses.

11. The last two mentioned needs will mean increased expenses to hospitals maintaining training schools, but in the end more serious results and greater expense will accrue to these hospitals unless something is done to remedy the present and increasingly chaotic conditions dealt with in this report.

#### Minority Report of Committee on Trained Nursing

DR. RICHARD OLDING BEARD, Minneapolis: The proposal of the majority of your committee that the American Medical Association should, at this late day, initiate a new movement of its own for the futile repetition of an already fulfilled purpose, the formulation of a model curriculum, will be unwelcome to the profession of nursing. Even were it a necessary or a desirable thing to do, the work to be studied is nursing and not medicine, and concerning the greatly major part of it medical opinion would obviously be of little service. It is neither necessary nor desirable. About the last thing that nursing education needs is the multiplication of model curriculums. What it does need is a broad, educational policy which may be brought to bear on the schools of nursing through the mechanism of their classification, to the higher levels of which they will then strive, in the interests of their own survival, to reach. The majority's proposal to preempt an equal representation with the nursing profession on a working committee is doubtfully politic. The medical profession of today must realize that it may fitly offer, while the profession of nursing may fitly accept, its friendly counsel in matters of nursing education, but it is no longer in a position, if it ever possessed the right, to dictate its conditions or to determine its limits. Its assumption of that right cannot fail of resistance from the profession of nursing. The horoscope of the nurse's training has permanently shifted. Its ideals have come under educational inspiration and control. Naturally, a claim that is based solely on a tradition of the past and has too often served as the excuse for the exploitation of nursing students must necessarily, under these new conditions, be denied; and it is a strictly ethical denial.

The minority of your committee desires further to recommend the suspension at this time of any action looking to the training and legalization of subsidiary nurses. Arguments for this recommendation may be briefly stated: The argument of public interest is paramount. An inferior type of semi-educated nurse may not be offered to large classes of people who are normally self-dependent, but are economically disabled by sickness, without incurring a sense of social



injustice they will resent. That resentment will be reinforced by the fact that the indigent sick receive, by grace of public taxation, a better type of nursing service than these people may command. The corollary of the proposal would lie in the offer of a second hand doctor at a diminished fee. The one suggestion leads straight in the direction of state nursing, the other in the way of "state medicine." Let us not tempt either. Social machinery may be directed by which, through better hospital service, through systems of hourly nursing, through nursing bureaus publicly maintained, efficient nursing at graduates fees may be secured. Cooperation of the nursing profession to this end is to be expected, but responsibility for these measures should not be left to it alone. It is not in the interest of the public that inadequately trained nurses be placed in charge of convalescence and chronic cases. Too many sources of danger arise during convalescence; while the chronic patient usually presents a most difficult problem for the best educated nurse.

The major consideration on which the proposal of the subsidiary nurse has been based is an economic one. The majority report of your committee and the findings of the Rockefeller survey alike suggest that legislation to control the name, the training, the practice and the wage of the subsidiary nurse will be indispensable. The theory of the law and the results of practical experience go to show that no constitutional measure can be devised that will efficiently tag the subnurse; that will determine her degree of education, more or less; that will keep her where she belongs in service, or will prevent her demand for wages as high as the graduate nurse gets. The legislative committee of the Minnesota legislature now in session has refused to provide for the registration of "subnurses" and it is quite clear that public sentiment is not back of the project.

The place of training of the subsidiary nurse is an unknown quantity. Her training in the same hospital with the regular nurses is impracticable. The proposal to train her in inferior hospitals, unfit to educate graduate nurses, will be unacceptable because it will mean the self-acknowledgment of their inferiority and will react on their supply of patients. It is a significant thing that at the last annual meeting of the American Hospital Association a number of hospital administrators supported the subsidiary nurse in theory, but that all of them sidestepped the responsibility of her training. They are not to be blamed. It would be an expensive and unrewarding task. The ethical error of the proposal of the "subnurse" lies not alone at the point of nursing service; it lies at the heart of nursing education. The women are not to be found who, in any number or with any permanent purpose, will be content with a reparation and a position inferior to that which another group of nurses receives and occupies. The minority of your committee recommends then that the proposal be disapproved by the Council.

#### DISCUSSION ON PAPER OF DR. RYERSON

DR. C. R. BARDEEN, Madison, Wis.: The student should have some kind of bird's eye view of the human being as a whole. He needs to have more than a knowledge of anatomy, physiology, chemistry and pathology as early as possible because, he is dealing with individuals, and not wholly with systems of organs. I should like to see the experiment suggested by Dr. Ryerson tried out. Something along the line we have been giving is better than a purely vertical scheme, although it is well to study the true association of the essentials with what are not essentials for practitioners of medicine, and try to stick to essentials and not lead the student astray by too many details that are not essential. There should be something to stimulate the student's understanding from the beginning that he is not to study anatomy so many hours a week and physiology so many hours a week, but that he is studying the human organization as a whole in relation to health and disease.

DR. G. CANBY ROBINSON, Baltimore: Correlation of the work in the various departments is the dominating idea of curriculum makers at present. In the arrangement of the teaching plant we have one important factor in bringing about this desirable correlation—a point I am going to discuss tomorrow. Another point of considerable importance is the

type of training and interest which teachers in the clinical departments have in the fundamental departments. It will not make much difference if we have correlation of the physical plant, unless the teachers of the fundamental and clinical subjects have a real interest in each other. We are urging that the laboratory men have an interest in the work of the clinics, and I feel that those who are teaching clinical subjects should have an equally clear understanding of the problems and progress of the work in the laboratory; so, after all, what we want is intellectual correlation. That can be brought about fairly satisfactorily with the present type of curriculum, and it might be ideally done with the type of curriculum presented today; but I feel that there should be an effort to bring about more intellectual correlation of the different departments than we have at present, so that a back and forth flow of ideas will be definitely and conscientiously presented to the students as they go through the courses.

DR. WALTER L. BIERRING, Des Moines, Iowa: While the plan presented by Dr. Ryerson appears to be novel to our American system of education, it is distinctly an English method and has not only been adopted by English schools but is now being required by the General Medical Council of Great Britain. The council makes a definite requirement that there shall be a distinct correlation between the fundamental sciences and the clinical branches. For instance, in the third year it requires one hour a week in each of the three subjects, anatomy, physiology and pathology, and while it does not require that there shall be the same number of hours during the fourth and fifth years, it suggests that there shall. It especially suggests the introduction of clinical courses in the second year. In the examinations at Edinburgh last summer and in the examinations of the triple qualification board of Scotland, which is conducted in medicine and surgery, definite examinations in applied anatomy, applied physiology and applied pharmacology as well as surgical pathology are also required. The candidate is required to outline in the examination in clinical medicine the heart, the lungs, the liver, the spleen and various other anatomic areas. The same thing is required in surgery. The National Board of Medical Examiners in this country has been trying to copy the same method by having in its examinations applied anatomy, applied physiology, applied pharmacology and surgical pathology.

DR. ALEXANDER PRIMROSE, Toronto: Most schools today attempt to teach the primary subjects early in the course, and in the final years to apply them. The thing now suggested is to teach the clinical years in correlation with the primary departments. Dr. Ryerson has spent much time and labor on this subject, and his colleagues are sympathetic; but we have not as yet attempted to adopt this method. I do not think it could succeed unless a large number of medical faculties of this country should agree to adopt a similar scheme. I hope this subject will be seriously considered and be brought to an issue as to the determination on the part of medical faculties to accept the principle or not.

DR. J. PARSONS SCHAEFFER, Philadelphia: It seems unfortunate that the terms "preclinical" and "clinical" ever came into being. I want to emphasize what Dr. Bardeen has pointed out, that certain things must be done first. We cannot do everything at the same time, and I believe that anatomy of the human body should antedate everything else, particularly an analysis of it. Granting that this may be true and correct, it would then follow that we should do something to bring home at once to the students the why of everything, and for that reason certain clinical subjects should be taught in the freshman year. It must be done to create interest and not have the students study anatomy merely to complete the course, to pass an examination and then to forget it. I know of no better way to correlate the subjects than for the surgeon and the internist to present their cases from the point of view of anatomy and physiology, and the particular thing they have in mind. At present it is not so presented. An internist or a surgeon jumps good and hard on a student if he does not know his anatomy. An ophthalmologist may strike a student good and hard on some detail of anatomy which we are unable to give in the limited number of hours at our disposal. The solution of teaching these subjects is



to bring something into the freshman year that will create interest and show the why and wherefore.

DR. VICTOR C. VAUGHAN, Chicago: Some one spoke about giving lectures on diabetes to freshmen students. How can you give such lectures with any degree of satisfaction when a student has never seen the pancreas and does not know where it is located? He has no idea of the histology of the pancreas. It is perfectly absurd to talk about the islands of Langerhans to a freshman who has never made an observation, and who does not know which end of the microscope to look through. Medicine, as I have defined it several times, consists of those facts culled from the various sciences which can be used in the prevention or cure of disease. The medical student does not know the fundamental sciences. It may be I am an old fogey, but I would prefer to see the system that has been outlined tried in some school in which I am not interested.

DR. LOUIS F. GERMAIN, Milwaukee: I think we all agree that anatomy, physiology and chemistry should be taught during the entire medical course. The question is how to do it. There is a great deal of anatomy, physiology and chemistry which is only of academic rather than practical value, but it must be taught. It is not that we do not teach anatomy, physiology and chemistry right, but that we do not continue teaching these branches through the entire medical course. It is up to the clinician to continue teaching applied anatomy and applied physiology during the entire medical course. A student who comes to us at the end of the fourth year has generally forgotten his anatomy and physiology. Who is to blame for it? Not the anatomist or physiologist, but the clinician. He has not kept up with the teaching of these subjects.

DR. HENRY PAGE, Cincinnati: To lay down a curriculum with 4,000 hours, as suggested in the Toronto scheme, however admirable it may be in some respects, is going too far in the way of rigidity from which we have been trying to escape. One reason why the clinician has not kept up with teaching in anatomy is that the machinery does not exist to do it. We know that the amount of anatomy which remains with a student after the first year, much less the second and third years, is practically a negligible quantity. When he comes to applied science he has lost or forgotten all his anatomy, and has to learn it over again or never does learn. To correct that, the student should apply his anatomy as a subject relating to medicine.

We have introduced into our school a course in anatomy called the anatomy of physical diagnosis, a rather strange title, but in that course the student is brought in contact with the clinician, and we have been trying to get the best clinician possible to teach that course. Our full-time professor of medicine (Dr. Roger Morris) thinks the course so important to the students that he himself is teaching it.

DR. A. C. ABBOTT, Philadelphia: I am profoundly grateful to Dr. Ryerson for the concrete scheme he has brought before us. As has been voiced here during the last two years, many are dissatisfied with the experiment that has been in progress for fifteen years, although they are just starting it in France as a new thing. It is essentially what we started when I began teaching, and has gone from bad to worse and we are hoping to get rid of it. I refer to the detached teaching of the sciences separate from their clinical application. Any plan is wrong that does not constantly convince the student that he is studying medicine. I can understand the fascination, interest, and pleasure that the various special branches give to him; but if he is permitted to study them in a detached way, he does not get a comprehensive view of medicine and does not leave school a competent practitioner of medicine—the purpose for which medical schools are organized.

DR. GEORGE E. DE SCHWEINITZ, Philadelphia: We are all agreed that, good as it has been, and excellent as the teaching is, the medical curriculum must be improved. An investigation similar to that referred to by the chairman, made with medical students in the school in which I have the honor to teach, brought out the following objections to the present curriculum: (a) Lack of correlation between one subject and another; (b) inability to understand why certain things are taught; (c) inability to understand why so much of certain

branches is taught. The only way these doubts can be overcome is by better cooperation between the teachers of the various branches. No single branch should be considered as finished and then locked off, but should be carried on through the entire curriculum by the men most interested, whether it be medicine, surgery, or the special branches. Take my own branch, ophthalmology. It is impossible to turn out a medical student as a specialist. It is wrong. We can more easily make the student understand why any subject is a part of the curriculum, if there is a close cooperation of the fundamental and the clinical branches. We are all anxious to improve the curriculum and to meet it in all the ways suggested here, but I am reminded of what a distinguished educator in this country said not long ago: "It is about time we take up the teachers and straighten them out." There are lots of teachers in medical schools, admirable men, wise, well instructed, excellent, but they do not teach students to the best advantage. Being a pioneer myself in that respect, I speak with authority. Teaching is a very important part of our business today, and while we are anxious to improve the curriculum, we must also try to improve the methods whereby that curriculum is interpreted to the students who wish to go out as the finished product of our efforts, and that, after all, is what we are trying to do.

DR. E. STANLEY RYERSON, Toronto: Preventive medicine was purposely introduced into the first year to show the student at the beginning of his course that the prevention of disease is just as important as its cure. If he acquires this idea at the beginning and continues it throughout the course, he is going to have an enormous influence, when he enters practice, in forwarding all the various public health movements. In working out the details of a revised curriculum, it would be most essential to have the intellectual correlation between the teachers of the various departments as spoken of by Dr. Robinson.

(To be continued)

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**Oil Donated for Mosquito Eradication.**—The Standard Oil Company has donated 1,000 gallons of oil for use in the mosquito eradication campaign that will be conducted by the state department of health of Alabama this spring. Other oil companies have indicated that they will donate oil for the same purpose.

**Chiropractor Convicted.**—Reports state that P. R. Ritchie, a chiropractor of Mobile, was convicted in the circuit court by a jury, February 21, of practicing medicine without a license, and was fined \$50 and costs. In default of payment of the fine, the defendant was sent to the county jail for twenty days.

### ARIZONA

**Maricopa County Medical Society Aids "Hygeia."**—The Maricopa County Medical Society with headquarters at Phoenix, has sent in 120 subscriptions to *Hygeia*, including hotels, clubs, schools, colleges, ministers, physicians and laymen interested in public health.

### ARKANSAS

**Catholic Hospital for Eldorado.**—A new Catholic hospital will be erected at Eldorado at a cost of \$40,000, it is announced. The building will contain a charity ward for the housing of oil field workers who may be injured in the course of their work.

**Insane Persons to Be Kept in Jails.**—Dr. C. C. Kirk, superintendent of the State Hospital for Nervous Diseases, Little Rock, has requested the county judge and sheriff to commit all mentally deficient persons in their jurisdiction to the county jail in future, instead of making application for their



admission to the state institution, because of the overcrowded condition of the hospital. Dr. Kirk states that the institution now is taxed beyond its capacity, with a total of 2,036 inmates. The normal capacity is 1,850.

**Medical School Bill Indefinitely Postponed.**—The Arkansas senate, February 28, postponed indefinitely a bill creating a board of five physicians to administer the affairs of the University of Arkansas Medical Department, Little Rock. It was charged that the bill was intended to transfer control of the school from its present dean to another physician. Following this action, the appropriation bill for the school was called up, and Senator Norfleet sought to amend the appropriations by reducing the salary items from \$36,500 to \$15,000. The motion was lost, and the body, sitting as a committee, recommended the passage of the appropriation bill as it stood.

#### CALIFORNIA

**Extension of County Health Service.**—A new branch health unit has recently been opened by the Los Angeles County Health Department to serve Alhambra, San Gabriel and El Monte. Dr. A. S. Baker, formerly of Seattle, has been appointed health officer for that district. A model hygienic laboratory is being installed which will make the usual health department laboratory tests for physicians and the general public. Plans are now under way for the establishment of a community health center for Alhambra, San Gabriel and El Monte, in connection with the new office. A dental clinic and a babies' clinic will be established in the new unit.

**Hospital News.**—The Sante Fe Railroad will erect a hospital at Needles as part of its \$5,000,000 development program in southern California. Because practically the entire population of Needles is dependent on the railway, the hospital will serve the city virtually as a public institution.—Ground was broken, March 1, for the new \$600,000 Mater Misericordiae Hospital to be erected in Sacramento to replace the present wooden structure on R Street. The new hospital, which will be six stories high, will be in the form of an X. The site comprises 8 acres.—Excavation work on the hospital to be erected at Bakersfield for Kern County, at a cost of \$450,000 was started the first week in February.—Work on a new 200-bed hospital, to be erected in San Diego by the Sisters of St. Joseph, on a new site on Fifth Street, will start in April. The present hospital site on University Avenue will be sold.

#### CANAL ZONE

**Motion Pictures for Lepers.**—Thomas Meighan, a motion picture actor, has donated a projecting machine for the lepers in the colony on Canilos Island, off the coast of Panama. The Paramount Company will supply films at intervals.

#### CONNECTICUT

**Personal.**—Dr. Edwards A. Park, professor of pediatrics at the School of Medicine of Yale University, addressed the New England Pediatric Society at the Boston Medical Library, Boston, March 9, on "Special Roentgen-Ray Diagnosis of Rickets, Syphilis and Scurvy." Dr. Park addressed the New York Society of Orthodontists at Vanderbilt Hospital, New York, March 10, on "Facts About Children of Practical Importance to the Orthodontists."

**Yale University News.**—The Sterling Chemistry Laboratory, a new \$2,000,000 structure, will be formally dedicated, April 4, on which day in 1804, Benjamin Silliman, the first professor of chemistry at Yale, delivered his first lecture. English, Scotch, French, Italian, Dutch and Canadian universities will be represented by delegates. The dedication will take place during the annual session of the American Chemical Society in New Haven. The Sterling Hall of Medicine, the next unit to be completed under the fund made available by the bequest of John W. Sterling, is progressing steadily.—Cheney Brothers, silk manufacturers of South Manchester, have offered the sum of \$1,000 yearly to Yale University for two years, the money to be used for a fellowship in organic chemistry in the graduate school. This fellowship will be known as the Cheney Fellowship in Organic Chemistry, and will be awarded to a graduate student who has demonstrated the ability to pursue work leading to the degree of doctor of philosophy.

#### DISTRICT OF COLUMBIA

**Smithsonian Institution.**—Mr. Henry White has been reappointed regent of the Smithsonian Institution, Washington; Frederick A. Delano has been appointed to succeed the late John B. Henderson, and Irwin B. Laughlin to succeed the late Alexander Graham Bell.

#### ILLINOIS

**Physician Fined for Violating Harrison Narcotic Law.**—According to reports, Dr. David H. Worthington, Aurora, aged 71, was found guilty of violating the Harrison Narcotic Law, in the federal court, Chicago, March 9, and fined \$100.

**Hospital News.**—A fifty-bed hospital is being erected by the Ingalls-Shepard Forging Company for the city of Harvey. The institution will cost \$250,000. Lodges, fraternities and social societies will raise \$20,000 for the furnishings and equipment.—St. Mary's Infirmary, Cairo, has recently added an annex for tuberculous patients, a nurses' home and a new wing to the main hospital building at a total cost of \$225,000.—A new three-story addition will be erected at St. Vincent's Hospital, Taylorville, at a cost of \$75,000.

**Schick Test for Inmates of State Institutions.**—Under a cooperative arrangement between the state departments of public health and welfare, a campaign is on foot for applying the Schick test to inmates of state institutions. The work will be carried out under the direction of the health department, which will also furnish toxin-antitoxin for the immunization of all those giving positive reactions. The boys' school at St. Charles carried out the plan some time ago, and all new-comers are now tested on arrival, and immunized when nonimmune to diphtheria. During the week of March 11-17, the 2,000 inmates of the Lincoln State School and Colony were Schick tested, and follow-up work will proceed immediately. Other state institutions in which danger from diphtheria exists will be treated in like manner.

**Tuberculosis Sanatorium Survey.**—A field physician from the state department of public health has recently completed a survey of the eight county tuberculosis sanatoriums now in operation in Illinois. The findings show a maximum capacity of 306 beds. The average number of patients cared for in the eight institutions is 251, while the average cost of maintenance each month for all the sanatoriums is \$19,200, or slightly more than \$76 a month for each patient. The survey showed further that three of the sanatoriums hold diagnostic clinics; all but one conduct dispensary service, and all but two carry on, in some measure at least, county tuberculosis and public health work. The lowest appropriation for any of the sanatoriums for 1923 is \$10,000, but the total amount available in that instance is nearly \$30,000, a contract with the U. S. government with reference to tuberculous ex-service men making up the difference. All the seven other sanatoriums have appropriations for 1923 ranging from \$25,000 to \$40,800 for maintenance, and in two cases extra appropriations for building.

#### Chicago

**Illegal Practitioner Fined.**—It is reported that "Prof." J. B. Cottaze, who maintained an office on West Madison Street, was fined \$25 and costs for practicing medicine without a license, by Judge Adams in the municipal court, March 13. Cottaze, it is alleged, collected thousands of dollars from his patients. The judge ordered the "professor" to leave the city.

**Personal.**—Dr. Frank Smithies has resigned as gastroenterologist and attending physician to the Augustana Hospital, to assume the duties of physician-in-chief and head of the department of internal medicine at St. Elizabeth's Hospital.—Dr. Alfred A. Strauss addressed the Vermilion County Medical Society at Danville, March 6, on the subject of "The Surgical Treatment of Gastric Ulcers."

**Medical Student Arrested.**—Reports state that "Dr." Thomas B. Bondus, with offices in the Kesner Building, was arrested, March 2, on charges of practicing medicine without a license. Bondus is said to be an osteopath, who claims he is studying medicine. According to records, Bondus studied medicine at the Hahnemann Medical College and Hospital, Chicago, as a third-year student, 1921-1922, but never graduated.

**Society News.**—At a meeting of the Laboratory of Surgical Technique of Chicago, March 22, Dr. Leon Asher, professor of physiology at the University of Bern, Switzerland, spoke on "The Physiology of the Thyroid Gland from the Clinical Standpoint." Dr. A. J. Ochsner, presided.—At the fifty-sixth regular meeting of the Chicago Society of Internal Medicine, March 26, Dr. J. Curtis Lyter, St. Louis, will speak on "The Pathways of the Mediastinum, Lungs and Pleura."

**Conference on Hospital Service.**—At a meeting of the American Conference on Hospital Service, held in Chicago, March 5, the following officers were elected for the ensuing year: president, Dr. Frank Billings, Chicago; vice presidents, Drs. Andrew R. Warner, Chicago, and Linsly R. Williams,



New York, and treasurer, Dr. Harry E. Mock, Chicago. Dr. Fred C. Zapffe, Dr. Linsly R. Williams and Miss Sarah B. Place, R.N., Chicago, were elected to the board of trustees (term expires 1926).

**Joint Clinical Meeting.**—The Chicago Ophthalmological Society and the Chicago Laryngological Society will hold a joint clinical meeting, April 16-17, under the presidency of Dr. Robert von der Heydt. The first day will be devoted to clinical presentations at the various ophthalmic clinics, and the second day to work at the otolaryngologic clinics. A banquet will be given at the Hotel Sherman, April 16, to which all ophthalmologists and laryngologists are invited. Dr. William Lemuel Benedict, Rochester, Minn., will address the meeting.

**City to Recognize Service of Physicians.**—The city finance committee, March 15, approved recommendations of Dr. Herman Bundesen, health commissioner, that "as an act of courtesy" physicians who are aiding the health department as a consulting staff be placed on the city pay roll at \$1 a year. Dr. Bundesen stated that these men are giving their time free in the interests of public health, and their services could not be bought by the city. There are 100 on the list, among them being Drs. Louis E. Schmidt, Joseph B. DeLee, David S. Hillis, Isaac A. Abt, Arthur I. Kendall, Ludvig Hektoen, William A. Evans, John Dill Robertson and Julius H. Hess.

#### IOWA

**Des Moines Subscription to "Hygeia."**—The city of Des Moines has sent in 166 subscriptions to *Hygeia*, including physicians, ministers, teachers and laymen in the community.

**Hospital Plans.**—A campaign to collect \$150,000 has been inaugurated to erect a new building at St. Luke's Hospital, Macon City. Ground for the new institution will be broken, April 8. The entire cost of the structure is estimated at \$600,000.—The contract has been let for the new \$275,000 addition to the Mercy Hospital, Cedar Rapids.

#### MARYLAND

**Maryland Psychiatric Society Plans Clinic.**—At a special meeting of the Maryland Psychiatric Society held at Athol Sanitarium, March 13, announcement was made of the opening of a mental hygiene clinic about April 1, at the University of Maryland. It was also decided at this meeting to bring to the attention of the next general assembly, the importance of establishing a city psychopathic pavilion in Baltimore at a cost of about \$300,000; until such provision is made by the legislature, advice regarding treatment to early mental cases will be given at the proposed mental hygiene clinic. The following program was presented: "A Mental Health Clinic," by Dr. Arthur P. Herring, commissioner of mental hygiene of Maryland; "Medical Aspects of a Mental Health Clinic," by Dr. Ross McC. Chapman, superintendent of Sheppard and Enoch Pratt Hospital.

**Children's Clinics for Baltimore City.**—Mrs. Henry Barton Jacobs has turned over to Baltimore and Dr. William S. Baer, for child welfare work, the Robert Garrett Hospital for Children, which has been closed since the death of Dr. Walter B. Platt, formerly physician in charge. Dr. C. Hampson Jones, commissioner of health, will establish there six free clinics—tuberculosis, dental, eye and ear, nose and throat, child welfare and a Schick, or antidiphtheria, clinic. Dr. Baer will maintain beds for the preliminary examination and treatment of children in connection with his orthopedic work. He will work independently, but there will be at all times cooperation between him and the Baltimore Health Department. Mrs. Jacobs will maintain the hospitals at her own expense, and the city will provide the health department with funds for the employment of three physicians at \$1,000 each, and for such equipment as may be necessary. The clinics will be open by May 1. Dr. John E. O'Neill will have general charge of the tuberculosis clinic, with a specialist assigned to assist him. The other appointments have not been made.

#### MICHIGAN

**Midwives in Detroit.**—The Detroit Department of Health states that during the last three years permits have been refused or revoked for about 300 midwives. Nearly 180 midwives were at work in Detroit, a few years ago. Following strict examination and inspection by the health department, there are only forty midwives with permits now practicing.

#### MINNESOTA

**Liquor Permits Revoked.**—According to reports, twenty-five physicians in Minnesota have had their permits to prescribe liquor revoked for abuse of the privilege. It is stated that, of nearly 5,000 prescriptions filled in Minneapolis, 50 per cent. were issued to fictitious names.

#### MONTANA

**Sterilization Bill Signed.**—Governor Dixon, March 15, signed the eugenic sterilization bill, passed by the legislature recently. This bill provides for the sterilization of all idiots, feeble-minded persons and epileptics confined in institutions, on consent of the guardian or custodian.

**Conference on Rocky Mountain Spotted Fever.**—Dr. W. F. Cogswell, secretary of the Montana State Board of Health, has issued invitations to the health officials of the Rocky Mountain states, for a conference on the control of Rocky Mountain spotted fever, which is most virulent in the Bitter Root Valley, Montana. The disease, however, has been reported also in Wyoming, Utah, Idaho, California, Oregon and Washington.

#### NEBRASKA

**Physicians' Licenses in Peril.**—It has been discovered that every license issued since the passage of the Code bill, in 1919, may be declared illegal should the issue be carried to court, it is reported. Governor Bryan found that the Code Law nullified the act creating the state medical advisory board which has been issuing medical licenses for nearly four years without legal authority. When the board is again legalized by an act to be presented at the present session of the state legislature, it is planned to issue a blanket order affirming the legality of all physicians' and surgeons' licenses issued within the last three and one half years.

#### NEW MEXICO

**Personal.**—Dr. Eugene William Fiske, Santa Fe, has resigned as penitentiary physician following four years of service.—Dr. William M. Lancaster, Clovis, has been appointed health officer of Curry County, to succeed Dr. George K. Maynard.

#### NEW YORK

**State Society Opposes Antiheroin Bill.**—The Medical Society of the State of New York has announced its opposition to the bill introduced by Senator Bloch prohibiting the sale or manufacture of heroin in the state of New York. Dr. James N. Vander Veer, chairman of the legislative committee of the society, informed Assemblyman Duke, chairman of the Assembly Codes Committee, that the Medical Society of the State of New York wishes to be heard on this measure.

**Antivivisection Bills Killed.**—The Assembly Codes Committee, March 14, voted unanimously to kill the Cutillo-Leininger antivivisection bills. One bill purposed to prevent "experimentation" on children, and the other would have prevented experiments on dogs. Among those at the hearing who opposed the antivivisection bills, March 13, were Drs. Simon Flexner, William H. Park and Frank D. Jennings, representing the Medical Society of the State of New York.

**New Chiropractor Bill.**—A bill aimed at chiropractors was introduced into the legislature, March 9, by Assemblyman Dr. H. W. Lattin of Orleans County. It amends the public health law by providing that a person convicted of practicing medicine illegally may be punished by a fine of \$50 or imprisonment of not more than six months, or both. He is also liable for an additional penalty of \$500 for each offense, to be recovered by an action brought by the attorney general.

**Professor Frankl Lectures.**—Dr. Oskar Frankl, professor of pathology, the University of Vienna, delivered the first of the spring series of ten practical lectures given under the auspices of the Kings County Medical Society, at Brooklyn, March 9. Dr. Frankl's subject was "The Endocrines." Beginning March 12, he will lecture in the Hoagland Laboratory, Brooklyn, from 4 to 6 o'clock daily until the end of the month. A similar course at Cornell University Medical College in Manhattan will be conducted simultaneously. During April and May, Dr. Frankl will conduct courses in St. Louis and Chicago.

**Plan to Improve Outpatient Service in Pediatrics.**—The section on pediatrics of the Associated Out-Patient Clinics of New York has, through its executive committee, been working out plans for improving outpatient service in pedi-



atrics. The children's medical division of Bellevue Hospital was chosen as an institution in which to demonstrate a well-rounded pediatric service, and the demonstration was begun, February 1. Unity between the inpatient and outpatient service will be possible by the transfer of records between ward and outpatient department. A plan for the study of results in pediatric outpatient service is also being tried out. Reports of the demonstration at Bellevue and the plan for studying results will be published for the benefit of those interested in pediatric outpatient service.

**Bill to Extend Workmen's Compensation.**—A bill has been introduced into the legislature which aims to bring all individuals or firms employing two or more persons under the workmen's compensation insurance act. The measure has been endorsed by the state federation of labor and the American Association of Labor Legislation. Under the proposed bill, physicians, lawyers and any other person employing two or more stenographers would be compelled to take out workmen's compensation insurance. The sponsors of the bill call attention to the fact that in many instances the courts have awarded heavy damages, which the small employer of labor has had to meet. There are several other measures proposing changes in the workmen's compensation law before the legislature. One bill, known as the Lacey O'Conner measure, greatly increases the awards that can be made for permanent or partial disability sustained in industrial plants. Another bill increases the waiting period for filing claims from seven to fourteen days, and it is contended that this will increase claims by 17 per cent. A third bill reduces the noncompensated waiting period in industrial accidents from fourteen to seven days, and provides for compensation from the date of the accident, if the period of disability extends over twenty-six days instead of forty-nine days.

**Proposed Amendment to Public Health Law.**—A bill entitled "An Act to Amend the Public Health Law in Relation to the Conduct of Medical Examinations" provides that the state board of medical examiners shall consist of nine or more members, one third to be annually appointed by the board of regents. It raises the fee for examination to \$35, and provides that the candidate must be a citizen of the United States. It lengthens "a satisfactory course" to eight months. It further provides that, in lieu of the first two years of the medical course, the regents may accept evidence of graduation with the degree of bachelor or doctor of dental surgery from a registered dental school, if the requirements are essentially those of the first two years in medical school. The subjects of hygiene and sanitation are omitted from the list of subjects in which the regents may make conditional admissions to examination. The act would admit to examination a candidate who has received the degree of bachelor of medicine from a recognized school of medicine in this country or in Canada or from a medical school in a foreign country maintaining a standard not lower than that prescribed for medical schools in this state. The examination, according to this amendment, will be held three times annually, and the regents may accept, in lieu of their examination, the certificate of the National Board of Medical Examiners. Other portions of the bill have been left intact.

#### New York City

**Harvey Society Lecture.**—The ninth Harvey Society lecture will be delivered by Dr. John Howland, professor of pediatrics, Johns Hopkins University, Baltimore, at the New York Academy of Medicine, March 31. His subject will be "Rickets."

**Personal.**—Milton C. Whitaker, for six years professor of chemical engineering at Columbia University, has been awarded the Perkin medal presented annually for the most notable achievement in applied chemistry. The award was made in recognition of a series of achievements in the continuous production of ethyl acetate made by Dr. Whitaker and a corps of research chemists working under his direction. —Dr. Charlton Wallace has resigned as surgeon in charge of the Reconstruction Hospital, Central Park West. —The Brooklyn Chapter of Hadassah gave a reception for Dr. I. M. Rubinow, who has just returned from Palestine, where he was for four years director of the Hadassah medical organization. The occasion marked the opening of the Hadassah campaign to raise \$100,000 for nonsectarian medical work in the Holy Land. —Dr. Bronson Grothers of Harvard University read a paper on "The Intracranial Mechanism of Labor and Its Relation to Later Disabilities in the Child," before a joint meeting of the section of obstetrics and gynecology and the section of pediatrics of the New York Academy of Medicine, March 8.

#### OHIO

**Muskingum County Academy of Medicine Aids "Hygeia."**—The secretary of the Muskingum County Academy of Medicine has forwarded eighteen subscriptions to *Hygeia* as representing a special subscription by that society.

**Chiropractors Fined.**—Peter Boike, Madisonville, and Adolph Stoerker, Norwood, chiropractors, were fined \$50 and \$25, respectively, by Judge Dumont in St. Barnard, March 7, it is reported, for practicing medicine without a license. Both men decided to serve a prison sentence in preference to paying the fine.

**Workmen's Compensation Law.**—The Supreme Court recently decided that the term "injury" in the Ohio Workmen's Compensation Law does not include diseases contracted in the course of employment, and accordingly holds that death from typhoid fever is not compensable. In the case of *Industrial Commission v. Cross* the judgment of the Ohio Court of Appeals was reversed.

**Columbus Academy of Medicine.**—At a dinner given by the academy at the Chittenden Hotel, February 26, Dr. Paul Roth of Battle Creek Sanatorium, Battle Creek, Mich., gave an address on "The Respiratory Exchange in Relation to Clinical Diagnosis." Dr. Charles E. Roderick, also of the Battle Creek Sanatorium, presented interesting data on the possibility of spreading respiratory infection by means of the apparatus for the determination of basal metabolism.

#### OKLAHOMA

**Hospital News.**—The deal tentatively made with members of the Bryan County Medical Society regarding the Durant Memorial Hospital (*THE JOURNAL*, March 10, p. 704) was not consummated. The institution has been purchased by two local physicians and is now open to all medical practitioners who wish to take advantage of its facilities.

**Medical Board Bill Goes to Third Reading.**—The senate bill creating a state board of medical examiners, with an amendment excepting Christian scientists from certain of its provisions, was passed to engrossment and the third reading by the upper house, February 28. This act creates a board of seven members, appointed by the governor, who shall be graduates from recognized medical colleges and who have been legal and active practitioners of medicine in Oklahoma for at least five years prior to their appointment.

**Health Commissioner Asks Physicians' Support.**—Dr. E. A. Davenport, recently elected state health commissioner, has sent letters to all the physicians of the state asking that medical forces rally to support the department of health in securing appropriations totaling \$208,670 for each of the next two years. Three large departments have been added to those under control of the board; the bureau of control of epidemics, for which \$15,000 is asked; a venereal disease department, for which \$20,000 is asked, for upkeep, and a bureau of maternity and infant welfare, to support which \$21,370 is asked.

#### PENNSYLVANIA

**Graduate Course for General Practitioners.**—A graduate course of three weeks' duration will be given at the University of Pittsburgh School of Medicine, beginning May 31. This course will be devoted to the interests of the general practitioner. Instruction will be by lecture, clinic and demonstration, at the school of medicine and the large hospitals of the city.

#### Philadelphia

**Dr. Deaver Made Professor Emeritus.**—Dr. John B. Deaver, who having reached the age limit, retired as John Rhea Barton professor of surgery at the University of Pennsylvania Medical School, Philadelphia, June, 1922, has been named emeritus professor of surgery in the university.

#### UTAH

**National Association to Be Entertained.**—Dr. F. A. Goeltz, president of the Salt Lake County Medical Society, has appointed a committee to carry out plans for the entertainment of the physicians who will pass through Salt Lake City in June en route to, and returning from, the annual session of the American Medical Association in San Francisco. The medical society will have a reception committee at the depots to meet every delegation, and each party will be consulted as to its wishes with regard to recreation while in the city.



## WASHINGTON

**Tacoma Subscriptions to "Hygeia."**—Pierce County Medical Society with headquarters at Tacoma has sent in 199 subscriptions to *Hygeia*, the new journal of individual and community health, published by the American Medical Association.

## CANADA

**Social Hygiene Campaign.**—A social hygiene campaign was inaugurated in January by the Canadian Social Hygiene Council, under the auspices of the department of health of the province of New Brunswick. Dr. John J. Heagerty of the federal health department, Dr. Gordon A. Bates of the Canadian Social Hygiene Council, and Dr. John A. McCarthy of the health department traveled almost continuously for two weeks conducting public lectures in every part of the province.

**Personal.**—Dr. Norman H. Sutton, Peterborough, has been appointed district health officer of District No. 4 under the Ontario Provincial Board of Health, to succeed Dr. George Clinton.—R. B. McCauley, Sault Ste. Marie, has been appointed sanitary inspector of the board of health of the Province of Ontario, to succeed the late James Taylor.—It is announced that legislation is now under way in Ontario to reward Dr. Frederick Banting of Toronto for his discovery of insulin.—Dr. A. E. Webb-Johnson, D.S.O., of London, England, recently addressed an assemblage of physicians and medical students at the Toronto Academy of Medicine.

## GENERAL

**Committee on Narcotics Completes Report.**—Dr. Rupert Blue, U. S. Public Health Service, who has been representative of the United States at Geneva during the deliberations of the League of Nations committee on narcotics, advised the State Department this week that the committee had completed its task, and copies of the report agreed on by the various national representatives were being forwarded to Washington. Dr. Blue was assigned to the committee at the request of the league.

**First Aid Manual for Postal Employees.**—Just before his transfer from his position as head of the Postoffice Department to the position of Secretary of the Interior, Dr. Hubert Work issued a manual, entitled "First Aid for Postal Employees." The book was prepared through cooperation with the U. S. Public Health Service, under the supervision of P. A. Surg. R. C. Williams. The manual has twenty-four pages. It is pocket size, and is one of the safest booklets of its kind thus far prepared for the public. The advice is invariably simple, cautious and limited to such measures as the ordinary person of average intelligence might very well understand. In addition, every postoffice throughout the United States has been furnished with a first-aid emergency chest, 115 large outfits going to the larger postoffices and 2,000 smaller outfits to the smaller offices and railway terminals.

**Psychiatric Social Work.**—Announcement is made of the organization of a section on psychiatric social work as a special section of the American Association of Hospital Social Workers. Graduates of recognized courses in psychiatric social work are eligible for membership after being employed for one year in social work in a hospital or dispensary. Without such special training, two years' service in psychiatric social work is required. The entrance requirement for the special courses at Smith College and the New York School of Social Work is education of college rank. The special course covers about two years and includes practical training in the field for at least nine months. It is hoped that these standards will be maintained. A curriculum was recommended by a committee, which worked during the year 1921-1922. The objects of the section are: (1) to promote association of psychiatric social workers, and (2) to promote standards of psychiatric social work. The next meeting will be held in conjunction with the Conference on Social Work in Washington, D. C., May 16-23. The officers of the section are: Mary C. Jarrett, Boston, president; Mary Ferguson, Philadelphia, vice president; Maida H. Solomon, Boston, secretary-treasurer. Inquiries should be addressed to Mrs. H. C. Solomon, 74 Fenwood Road, Boston.

**The American Child Health Association.**—The important personnel of the American Relief Administration have joined in a consolidation of the American Child Hygiene Association, and the Child Health Organization of America, in the formulation of a new voluntary agency for the advancement

of child life, called the American Child Health Association. The American Relief Administration has volunteered to guide the executive effort of the new organization in its endeavor to provide funds to carry on its work. The officers of the new organization are Herbert Hoover, president; L. Emmet Holt, first vice president; Livingston Farrand, second vice president; Thomas D. Wood, third vice president, and Philip Van Ingen, secretary. The headquarters are at 532 Seventeenth Street N.W., Washington, D. C., and the administrative office at 370 Seventh Avenue, New York. The object of the organization is to use the great experience of the American Relief Administration in saving children to the advantage of American children, and to translate into facts the "Bill of Rights," stated by Mr. Hoover, its president: There should be no child in America who is not born under proper conditions; does not live in hygienic surroundings; ever suffers from malnutrition; does not have prompt and efficient medical inspection and attention, and does not receive primary instruction in the elements of hygiene and health.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

University of Cincinnati College of Medicine and the Hospital of the Protestant Episcopal Church for Children, Cincinnati, each \$250,000, under the will of Mrs. H. H. Taylor.

The residuary estate of Margaret Jeager, valued at approximately \$100,000, to be divided among the following institutions: St. Vincent's Hospital, New York; Lenox Hill Hospital, St. Joseph's Home for the Aged, St. Joseph's Hospital for Consumptives, Lebanon Hospital, Wyckoff Heights Hospital, Brooklyn, Isabella Home, New York Foundling Hospital, Association for Improving the Condition of the Poor and the Society for the Relief of Ruptured and Crippled.

Epileptic Hospital, Oakbourne, Pa., and the Rush Hospital for Consumption, Philadelphia, each \$10,000; Presbyterian Hospital, Philadelphia; \$10,000, for free beds in memory of Jacob Y. Dietz and Eugene Santee; Children's Seashore Home, Atlantic City, N. J., the American Oncologic Hospital and the Lankenau Hospital, Philadelphia, each \$5,000, under the will of Miss Mary E. Santee.

For a new hospital at Wakefield, Mass., \$50,000, by an anonymous donor.

Servants for the Relief of Incurable Cancer, New York, \$57,947, by the will of Mrs. Charles T. Klein.

Touro Infirmary, New Orleans, \$25,000, by Harmony Club members. St. Vincent's Hospital, Toledo, Ohio, \$20,000, by the Rev. J. Berthelot of Tiffin.

St. Agnes Hospital, Fond-du-Lac, Wis., \$10,000, by Dr. George W. Earle of Harmansville, Mich.

Sunset Home and Hospital, Concordia, Kan., a 160 acre farm valued at \$20,000, by Olof Anderson.

St. Francis Hospital, Santa Barbara, Calif., \$1,000, the result of a children's fete.

Burlington (N. J.) Hospital, \$500, by the will of Mary A. L. Bishop.

**Campaign to Improve Health of Indians.**—A special campaign to eradicate trachoma and reduce tuberculosis among American Indians has been inaugurated by the Office of Indian Affairs of the Department of the Interior. Special instructions were sent out to all superintendents that physicians at the agencies and schools begin at once study of the symptoms and diagnosis of these diseases and immediately give treatment in every available case. In cases of trachoma, medical personnel are instructed to conduct systematic examinations of eyelids of Indians so that there will be no delay in giving treatment to those affected. Physicians on duty among the Indians are also urged to equip themselves professionally to do the expression operation for trachoma. The crusade against tuberculosis is to be vigorously pushed by health officials in the Indian Service. Special efforts are to be devoted to an early diagnosis of this disease, after which a carefully outlined routine of living and treatment is to be enforced. The instructions sent to superintendents stated that the past high tuberculosis death rate among Indians because of racial predisposition would no longer be considered a satisfactory explanation for increased morbidity from this source. A survey of the existence of simple and toxic goiter among the Indians of the United States has been started by the Department of the Interior. The census will be completed by the end of the month. Its purpose is to obtain data of historic and medical value, and Indian schools and agencies have been instructed to give early records regarding individual cases of goiter found among the various tribes.

**The Standardization of Biologic Stains.**—It is not generally realized that dyes used for biologic stains, in order to give constant results, must be of precise chemical composition, and that it is difficult for the chemist or biologist to control their composition. Before the war, all stains were imported from a single German firm, which did not manufacture stains, but bought textile dyes, and after preliminary testing bottled them and sold them under its own name to laboratories. The war deprived American laboratories of this source of stains, and after prewar stocks had given out, it was difficult to get stains of good quality. A cooperative investigation of American made dyes was arranged through the National Research



Council, among the members of several national societies. That work has been organized now under a special commission independent of the research council, but still representing the different national societies that were cooperating in the earlier work. At the meeting of the executive committee of this commission in New York, March 2, it was shown that stains available in America now are in practically all cases as good and sometimes better than the best of the pre-war stains. The most important fact brought out at this meeting was that prewar stains were standardized only in an empiric way by the purchase of large quantities without knowledge of the exact composition of the dye, but they are now standardized on the basis of pure chemicals. In some cases, the impurities present in prewar stains were necessary. These impurities were other dyes and sometimes supposedly inert materials, such as dextrin. The task before the commission was to find what the impurity was that was responsible for the good staining qualities of the impure product, and then to demand that these impurities be present, as intentionally added ingredients. When this has been done, and the products are labeled, American stains will in truth become standardized. The commission will soon issue certifications of batches of stain that it has found satisfactory. These stains will be put on the market under a special label, bearing the name of the commission.

**Peace Time Health Program of American Red Cross.**—A health advisory committee of the American Red Cross, consisting of Drs. William H. Welch, Baltimore; Herman M. Biggs, New York; Thomas S. Cullen, Baltimore; Hugh S. Cumming, Washington, D. C.; Livingston Farrand, Ithaca, N. Y.; Franklin H. Martin, Chicago; Fred B. Lund, Boston; George M. Piersol, Philadelphia; John H. J. Upham, Columbus, Ohio, and C. E. A. Winslow, New Haven, Conn., was appointed in October, 1922. Its report was recently submitted to and approved by the Red Cross. The following policies concerning a peace time health program were endorsed by the committee:

1. The organization of classes in home hygiene and the care of the sick.
2. The organization of classes in nutrition.
3. The organization of classes in first aid and life saving.
4. The health phases of the Junior Red Cross program, such as (a) the development of personal health habits; (b) participation in a school health program, and (c) participation in community health programs.
5. The enrolment of properly qualified nurses under the division of nursing service.
6. The organized development of public health nursing in rural and semi-rural districts, through the activity of the division of public health nursing.
7. Assistance in the development and standardization of the training of public health nurses through loans, scholarships, subsidies and the like.
8. The development of machinery for the coordination at one central point of the work of various local health agencies.
9. Cooperation on a national scale with such organizations as the National Health Council for the purpose of furthering the coordination of voluntary public health activities.

The committee recommended that the home hygiene and nutrition work be extended by the organization of a health study group—for the consideration, first, of the principles of personal hygiene, and second, of local community health conditions and health needs; that it should be regarded as an essential principle by the Red Cross that all health work undertaken should be carried on only with the knowledge and approval of the state department of health and of the locally constituted health authorities of county, city or town; that in view of the intimate contact between a public health program of any type and the work of the medical profession, chapters should ask the local medical society or the local physicians as a group to nominate a physician of their own choice to act as their representative on the chapter executive committee or the committee on nursing activities. Judge John Barton Payne, chairman of the American Red Cross, announced that a director of health service will be chosen as soon as a suitable person can be found, and the recommendations of the committee put into effect.

#### LATIN AMERICA

**Public Health Society in Brazil.**—A Brazilian public health association was recently organized. Dr. Carlos Chagas is president and Dr. J. P. Fontenelle, secretary.

**Brazilian Society Elects Officers.**—The following officers were elected by the Medical and Surgical Society of Rio Janeiro: president, Prof. Fernando Magalhaes; vice president, Prof. Miguel Osorio de Almeida; secretary, Gen. Dr. Arnaldo de Moraes; speaker, Dr. Carlos Sá; treasurer, Dr. Custodio Fernandez; librarian, Dr. F. Catao; editor, Dr. Felicio Torres; and director of museum, Dr. Mario Góes.

**Personal.**—Dr. José Arce, professor of surgery at Buenos Aires, has been elected an honorary member of the Academia

de medicina at Rome. At the same meeting, Drs. L. Lenzi and S. Marino of the Italian hospital at Buenos Aires were elected corresponding members.—Dr. S. Mazza, professor of bacteriology at Buenos Aires, has left for Europe, intending to study tropical diseases with Nicolle at Tunis, and malaria in France and Italy. He is one of the editors of the *Prensa Médica Argentina*.

**Memorial to Carrion.**—At the recent Latin American Medical Congress at Havana, a tribute was paid to Daniel A. Carrion of Lima, the young martyr to science in 1885 during research on Peruvian verruca and Oroya fever. The *Vida Nueva* endorses the suggestion made at the congress that each of the American republics should send a block of granite to Peru for a monument to Carrion, each block to be appropriately marked, and the whole to form a memorial shaft. Our exchange urges that prompt action be taken so that this commemoration will be an accomplished fact when the next Latin American congress meets in Mexico.

**Nicaragua Wants a National Pharmacopeia.**—The *Gaceta Médica de Nicaragua* contains a letter from Dr. Andrés Morin which presents data demonstrating the inconveniences and dangers of the present condition in Nicaragua without any standard pharmacopeia. The same drug purchased at different times in the same pharmacy may differ materially according as the manufacturing firms follow the French or United States or other pharmacopeia. The French Codex is the one that has been most in use, but the United States measurement by measure instead of weight is more convenient. The recent Latin American Medical Congress at Havana discussed the necessity for a Latin American pharmacopeia.

#### FOREIGN

**New Spanish Journal.**—Under the title *Clinica y Laboratorio*, a new monthly journal has begun publication at Saragossa, Spain. The editor is Dr. R. Horno Alcorta. The new journal is octavo size and contains an average of 100 pages and six original articles, with illustrations. The subscription price is 40 pesetas a year.

**Medical Fees Increase in Portugal.**—The Portuguese Medical Association, on account of the continuous increase in the cost of necessities, has decided to raise its fee scale. In view of the fluctuations of Portuguese money, fees will be based on the 1914 prices of necessities plus the proportional increase in these since that time.

**Gift for Research Work.**—Sir Alfred Yarrow of London has donated nearly \$500,000 to the Royal Society for research work. The fund may be administered at the society's discretion, but Sir Alfred said: "I should prefer that the money be used to aid scientific workers by adequate payment, and by the supply of apparatus or other facilities rather than to erect costly buildings."

**Italian Fund for Medal in Chemistry.**—A committee has been appointed by the Italian Association of General and Applied Chemistry to arrange a celebration in honor of the seventy-fifth anniversary of Professor and Senator E. Paternó. The "Paternó medal" will be conferred annually to the author of the most important contribution to chemistry, regardless of nationality. Contributions to a fund for this purpose are welcome from the chemists of the world.

**Institute for Medical Research of the Federated Malay States.**—The *British Medical Journal* announces receipt of the annual report of the institute, compiled by Dr. William Felcher, acting director of the government laboratories, in which it is stated that a special inquiry was made in cases of malaria described as "quinin resistant." Of forty-four such cases investigated, in only one was the condition uninfluenced by quinin. In one other case described as "relatively resistant," parasites persisted for a long time in spite of treatment.

**Protection Against Injury from Roentgen Rays.**—A conference was recently held at Berlin to discuss ways and means for better protection of roentgenologists and for workmen making the apparatus which they use. Professor Bumm presided, and a number of specialists and labor leaders joined in the discussion. It was unanimously decided that there is no necessity for legislative action in the matter, but a collective inquiry is planned. Questionnaires are to be sent to all the university clinics and large hospitals and to certain roentgenologists to collect data on the subject.

**Rockefeller Mission Retires from Tuberculosis Work in France.**—The *Presse médicale* relates that the Rockefeller Mission has completed five years of its active and *souveraine*-



*ment bienfaisante* propaganda against tuberculosis in France, and has handed over its services and its activities to the Comité national de défense contre la tuberculose. The seat of this is 66 rue Notre-Dame-des-Champs, Paris. It is in charge of M. Léon Bourgeois and of Professors Calmette and L. Bernard, and the work is to be carried on in the same way by lectures, motion pictures and other means.

**New Medical Museum Journal.**—The *Journal of Technical Methods* has recently been issued by the International Association of Medical Museums, replacing the series of bulletins, of which seven had been published. The first number is a memorial to Sir William Osler. It also contains articles on histologic technic used in pathology, and on preserving fluids for gross pathologic specimens, and a discussion on photomicrography. A function of the association is the establishment of an international system of exchange of museum specimens and pathologic material for microscopic research.

**Fellowships for Research on Malaria.**—The *Annali d'igiene* gives the details for competition for the two fellowships, of 12,000 liras each, offered by the Italian government for research on malaria. Among the themes suggested for special study are the development of malaria in regions with few mosquitoes; the biology of mosquitoes; their range of flight; the incidence of malaria before the mosquito season; relations between malaria and domestic animals; the water plants which promote or check proliferation of mosquitoes; other larvacidal measures, and means to enhance immunity and protect workers in the fields.

**Good Advice for Physicians and Patients.**—Under this heading, the *Nederlandsch Tijdschrift* reproduces two articles from THE JOURNAL of Jan. 6, 1923. One was entitled "Some Sound Financial Advice for Physicians and Medical Advice for Laymen," page 53. The other was "The Problems of Personal Medical Advertising," page 56. Our Netherlands exchange comments appreciatively on both, remarking in conclusion, "It will be a difficult task for the American Medical Association to root out such inveterate and insidious evils as the trend to vulgar commercialism. The fine results of its fight against nostrums encourages the hope that it will succeed."

#### Deaths in Other Countries

Dr. Henrique Souza Lopes, formerly professor of toxicology and materia medica at Rio de Janeiro, and author of numerous works on these specialties.—Dr. L. Langieri of Buenos Aires.—Dr. H. Monnier of Montreux, aged 75.—Dr. A. Dumur of Evian, aged 70.—Dr. H. Bickel, privatdozent for neurology at Halle.—Dr. Julián Fuentes and Dr. Joaquín González Hidalgo, both of Madrid.—Dr. Georges Perrochaud, intern at Paris, succumbed to fulminating scarlet fever contracted in his hospital service.—Dr. J. Vitrac of Pau, professor emeritus of surgery at the Bordeaux medical school.—Dr. W. P. Purvis, senior surgeon to the Southampton Hospital, England.—Dr. Patrick Muldoon was shot and killed by rebels at Mohill, Ireland, March 18.

## Government Services

#### Hospital Trains Authorized

Pursuant to the instruction of the Secretary of War, the organization of the following hospital trains, organized reserves, has been authorized: Hospital Train No. 46 (Illinois); No. 63 (Arkansas); No. 10 (Illinois); No. 9 (Virginia); No. 68 (Indiana); No. 54 (Kentucky); No. 7 (Pennsylvania); No. 48 (Oklahoma); No. 66 (Arkansas); No. 40 (New Jersey); No. 17 (New York), and No. 8 (New York).

#### Hospitals Authorized

Pursuant to instructions of the Secretary of War, the organization of General Hospital No. 1 Organized Reserves (Bellevue Hospital Unit, New York City); of Evacuation Hospital No. 2 (St. Luke's Hospital Unit, New York City), and of Evacuation Hospital No. 25 (West Suburban Hospital Unit, Melrose Park, Ill.), has been authorized. Organization of the following hospitals, organized reserves, at the Western Reserve University School of Medicine, Cleveland, has been authorized: General Hospital No. 4 (Lakeside Hospital

Unit); General Hospital No. 57 (City Hospital Unit), and Surgical Hospital No. 5 (St. Vincent's Charity Hospital Unit). The organization of a veterinary convalescent hospital, organized reserves, to be known as Veterinary Convalescent Hospital No. 1 (a second corps area unit), has also been authorized.

#### Instruction in Treatment of Pulmonary Tuberculosis

Physicians in the U. S. Veterans' Bureau service who have completed the preliminary course in treatment of tuberculosis are eligible to attend the graduate course now being given, and to be repeated at intervals, at Veterans' Hospital No. 41, New Haven, Conn., and at Fitzsimons General Hospital, Denver, Colo. These schools opened March 1 and 5, respectively. The chief instructor of the New Haven school is Dr. Nathan Barlow of the U. S. Public Health Service. The Denver school is in charge of Major E. H. Bruns, M. C., U. S. Army, chief of the medical service. The instructors in the New Haven course include not only tuberculosis specialists connected with the U. S. Public Health Service and the U. S. Veterans' Bureau, but the following specialists not in the bureau service: Drs. Yandell Henderson, F. G. Blake, J. S. Ely, H. B. Ferris, H. W. Haggard, E. K. Hunt, A. M. R. Lauder, C. A. E. Winslow and M. C. Winternitz, dean, from Yale University Medical School; Col. G. E. Bushnell, Bedford, Mass.; Drs. Roy Adams, Washington, D. C.; H. K. Dunham, Cincinnati; George Fetterolf and Thomas McCrae, Philadelphia; A. K. Krause, Johns Hopkins Hospital, Baltimore; D. R. Lyman, New Haven, Conn.; Edgar Mayer, Saranac Lake, N. Y.; W. S. Miller, Madison, Wis.; E. L. Opie, Washington University, St. Louis; J. H. Pratt, Boston, and Asst. Surg.-Gen. F. C. Smith, U. S. Public Health Service, Washington, D. C.

Assistant instructors in the New Haven school from the bureau service are: Acting Asst. Surg. L. G. Beardsley, Surg. E. P. Bledsoe and P. A. Surg. Karl Schaffle.

Those not in the bureau service who will assist in the instruction at Denver are: Drs. A. M. Forster, C. F. Gardner and Gerald Webb, of Colorado Springs, Colo., and Drs. W. H. Bergtold, C. E. Edson, Leonard Freeman, J. N. Hall, C. B. Ingraham, Robert Levy, A. J. Markley and H. F. Pershing, of Denver.

These courses are thorough and will last at least two months in each school. The general supervision of both the preliminary and the graduate courses is in charge of the clinical director of tuberculosis in the central office of the bureau, Washington, D. C.

#### Successful Candidates for Navy Medical Corps

The following physicians have recently been examined and found physically and professionally qualified for appointment in the grade of assistant surgeon, rank of lieutenant (jg), in the medical corps of the Navy: J. E. Root, Jr., Temple, Texas; R. E. Avery, Barre, Vt.; J. F. Hays and J. M. Brewster, Philadelphia; E. S. McRoberts, Indianapolis, and J. J. Markey and J. D. Viecelli, Denver.

#### Internships in Army Hospitals

The medical department of the Army will accept for internship in its large general hospitals graduates of class "A" medical schools of this year's graduating class who have the endorsement of the faculty of their school for commission in the medical corps of the Regular Army, and who are physically qualified for service. There is no mental examination for these appointments. Interns who satisfactorily complete one year's internship under these conditions will be commissioned, if they so elect, without further examination, other than physical, in the medical corps of the Regular Army. The pay of an intern is \$60 a month, with rations, quarters, necessary traveling expenses and medical attendance.

United States General Hospitals at which these interns will be placed, include:

	Beds
Walter Reed General Hospital, Washington, D. C.....	1,000
Fitzsimons General Hospital, Denver.....	1,500
Beaumont General Hospital, El Paso, Texas.....	300
Letterman General Hospital, San Francisco.....	500
State Hospital, Sam Houston, San Antonio, Texas....	400



## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Feb. 26, 1923.

#### The Hunterian Oration

The hunterian oration in memory of John Hunter was delivered at the College of Surgeons, February 14, the anniversary of his birth in 1728. The college houses the hunterian collection, which under successive curators has become the greatest pathologic museum in the world, and may be regarded as a temple erected to the memory of the founder of scientific surgery. This year the oration was delivered by Sir John Bland-Sutton. The choice could have fallen to no one better fitted for the task. He alone among English surgeons has followed the hunterian tradition of studying all forms of life, normal as well as abnormal. A distinguished audience including Rudyard Kipling, listened with rapt attention to the address, "John Hunter, His Affairs, Habits and Opinions," by this master, whose enthusiasm for his subject was equaled only by his knowledge. He gave a vivid sketch of the most important events in Hunter's life, and showed the bearing of his work on many present-day questions. The oration glistened with aphorisms: "For Hunter, morphology was a gleam in the intellectual sky. We revel in the sunshine. Morphology has become the soul of anatomy. . . . The hall in the museum that enshrines Hunter's statue is a temple of pathology. . . . The essential work in Hunter's life was the useful specimens he prepared and left for successors. These specimens, safeguarded by faithful Clift, catalogued by sagacious Owen and Paget, and such able curators as Flower and Shattock, are now in the care of Keith, who lacks none of Hunter's enthusiasm, but totally eclipses him in the art of exposition."

At the banquet that followed, Kipling proposed the health of the hunterian orator in a characteristic whimsical and philosophic speech. He described man as "the hunter of truth," and exhorted his audience to "consider for a moment the poor brute's position. You all know the common formula for him: 'Born of woman, on woman designed to beget his life—the natural quarry of the seven deadly sins, but the altar of an inextinguishable hope'; or more scientifically [I regret I am not a scientific person] he might be defined as 'an imperfectly denatured animal intermittently subject to the unpredictable reactions of an unlocated spiritual area.' The priest and the law giver have probed and fished for it all through the ages; but more than any other the leech, the medicine man, the healer has been hottest on its track. In the teeth of the outrageous, the absurd disabilities imposed on him, man, the imperfectly denatured animal, who cannot trust the evidence of his own senses in the simplest matter of fact; whose evidence on the simplest matter is colored by his own iniquities; man, always the hunter, went up against the darkness that cloaked him, to find what order of created being he might be. It was the old quest under a new name. But this time the seekers, unlike the priest and the lawyer, admitted that they knew very little. Experience had taught them to be very humble. For that reason their knowledge was increased."

#### The Medical Work of the Ministry of Pensions

In reply to criticism in the House of Commons, the minister of pensions gave some particulars of the medical work. Since the armistice the ministry has spent more than \$300,000,000 on medical treatment of the sick and wounded, and on allowances for the men and their families. A large proportion of the patients have been restored to health. At present the ministry is responsible for 25,000 patients in hospital. Of

these, 12,000 are in hospitals owned, manned and managed exclusively by the ministry. A daily average of 80,000 attend as outpatients at hospitals or clinics, of whom the larger number attend clinics owned, manned and exclusively controlled by the ministry. It is the aim of the ministry's medical service to supply medical attention as long as there is the slightest chance of materially improving the men's condition. The treatment of ex-service men suffering from nerve or brain trouble is constantly under discussion between the minister and representatives of the men. The ministry has fourteen neurologic hospitals and a large number of neurologic clinics. Much criticism has been directed against the ministry for allowing men rendered insane by the war to be treated in ordinary asylums. The ministry is about to start the experiment of making separate arrangements for the treatment of cases of a hopeful type.

#### The Supply of Insulin

Insulin is now being used in London at St. Bartholomew's, Guy's, St. Thomas's, the London, and University College hospitals; in Sheffield, at the university departments of pharmacology and physiology, and at the royal infirmary, and in Edinburgh at the royal infirmary. Arrangements are being made to extend the work to other hospitals and institutions where the necessary conditions, both personal and material, can be provided. Every effort is being made to increase the supply of insulin so that it may be available in general practice. Progress toward large-scale production has been more rapid than was expected. Subject to limitations of raw material in particular districts, successful manufacture is now considered assured. But a period of some weeks must elapse before laboratory tests and clinical use under special safeguards will have made it justifiable for a supply to be issued generally for routine use under ordinary conditions of medical practice. This is a wise provision, for insulin is a powerful remedy and its use in the hands of experts has on some occasions given rise to anxiety.

#### The Sphalinger Treatment of Tuberculosis

As stated in previous letters, the ministry of health has taken up a noncommittal attitude when requested to support the Sphalinger treatment of tuberculosis. Persistent efforts are being made in the press to boom the treatment, but without success. Readers are assured on the authority of "an eminent physician" (who prefers to remain anonymous) that the treatment is valuable. "The serums and vaccines, which are the fruit of years of research, have cured even advanced cases. Three or four years are required for their preparation, and great expense is involved. Sphalinger has so impoverished himself by his magnificent work that he cannot go on without substantial help. He will not publish his formula because he knows very well that unauthorized persons would exploit it, with the result that the method would be discredited. All our present methods of inoculation will have to be revised on the basis of the principles underlying his work. To remove immediate embarrassment and establish an institute in this country, some \$500,000 is required." An appeal is being made for subscriptions, but it does not seem likely to produce much result.

#### Women Physicians Demand Equal Pay With Men

The Medical Women's Federation has sent a letter to the postmaster general asking him to consider the existing inequality of pay between men and women physicians on the staff of the general post office. At present all the women physicians receive a salary of from \$1,250 to \$2,000 with a bonus, as against from \$1,500 to \$2,500 for men. The federation lays stress on the fact that medical women receive exactly the same training as men, and also are capable of doing, and actually do, exactly similar work, and undertake



the same responsibilities. It also adds that inequality of payment will tend to prevent the better qualified and more experienced women from offering themselves for appointment.

#### Chair of Animal Pathology at Cambridge

The senate of the University of Cambridge has accepted the offer of the ministry of agriculture of \$150,000 to found a professorship of animal pathology. This is the first step toward the creation of an institute for research in the pathology of animal diseases. The first duty of the professor will be to prepare plans, and it is understood that the government departments concerned are prepared to consider schemes involving a total expenditure, on buildings, staff and upkeep of \$500,000 in the next four years. After that the financing of the institute will depend on circumstances. Headquarters will be in an extension of the school of agriculture, where the new professor will have the assistance of Prof. T. B. Wood and Prof. R. H. Biffen, among others, who will aid him in directing the work along agricultural lines. His windows will look into the new biochemical laboratory that is being built for Prof. F. G. Hopkins. A few yards away is the Molteno Institute, where Prof. F. G. Nutall pursues his studies in parasitology. The university medical school also is adjacent. The necessary paddocks, stables and animal houses will be provided at the field laboratories just outside the town. Thus, there is every facility for coordinating the new institute with all the allied departments of the university.

#### PARIS

(From Our Regular Correspondent)

Feb. 23, 1923.

#### Can Sports Regenerate the Human Race?

It has been frequently assumed that participation in sport, if it became more general, would preserve the human race from physical degeneration; but in recent examinations of draftees, those who were in the habit of engaging in sport activities were not found to be better built or more robust than the others. On the contrary, a large proportion of the devotees of sport were assigned to the deferred class, on account of poor physical development or disturbed heart action. It would seem, therefore, that we have greatly deceived ourselves, when, reacting against the gymnastics of the school and the army, we have maintained that sport and athletics would provide adequate physical training for children and adolescents. Dr. Ruffier, who has for many years studied the problems of physical education, analyzes the causes of this deception. What gives, he says, a special character to the exercise obtained in sport activities is the spirit of competition—the struggle between competitors who are endeavoring to defeat each other. This is, moreover, the view that young people take of sport. Their youthful enthusiasm, their pride, their desire to measure their strength against their fellows, lead them to take part in foot races, bicycle races, boxing matches and football, in which they find an opportunity of asserting their physical superiority. That is exactly why sport is bad for them and why its effect is absolutely nil as far as the regeneration of the race is concerned. Sport may be regarded only as a pleasing means by which those who are strong of muscle can exhibit their great physical qualities. On the other hand, sport can only be the cause of exhaustion, or at least an arrest of development, for children and weak adolescents. In order that a future champion in the Olympic contests may be discovered in a crowd of young men, just think how many must be overtrained. Another disadvantage is that many, too easily convinced of their physical inferiority, abandon exercise in all its forms. The main thing, then, is not to train weak-

lings so that they may become distinguished for their prowess in sport, but to base physical education in the schools and colleges on gymnastics tending toward an all round physical development.

#### The Abuse of Morphin in Chronic Affections

Dr. Maurice Renaud recently called the attention of the Société médicale des hôpitaux of Paris to the misuse of morphin injections in chronic diseases. Renaud is physician to the old people's home at Brévannes, where also a number of hospital patients affected with incurable chronic diseases are admitted. When Renaud took up his work in this service, he found thirty patients, to whom 250 injections of morphin were being given every day. These patients were suffering from tabes, paraplegia, diseases of the stomach, rheumatism and cancer, and their condition was extremely pitiful. Renaud soon became convinced that this abuse of morphin was to a greater extent responsible for their sad condition than was the affection on account of which they had become morphin addicts.

As he studied these morphin addicts, it became apparent that the use of morphin did not make it easier for them to bear the discomforts of chronic diseases, nor did it alleviate any of their symptoms; for, as is well known, morphin is a sovereign remedy only in acute and paroxysmal pain, and, on the other hand, suppresses the marvelous capacity of the human organism to become resigned to most abominable situations. The use of morphin in these cases, therefore, defeats its own end. Instead of producing mental repose, it creates a state of constant irritability, for the patient comes to await, in a state of constant anxiety, the next injection.

On discontinuing entirely the use of morphin, Renaud noted an improvement in all patients. Some of them who were not affected with any serious disease and whose condition had not become grave by reason of their morphinomania became normal as soon as the intoxication was suppressed.

Renaud concludes from these facts that the injection of morphin should be an exceptional form of medication, since the benefits are only transient, and deplorable symptoms result if it is prolonged more than a few days. It should be reserved for the relief of pain in crises or for the alleviation of agony.

#### Honor Loans for Students

Utilizing a gift of 100,000 francs from Mme. Nathan, a trial of the honor loan system, on a rather extensive basis, has been inaugurated by the University of Paris. In accordance with the expressed will of the donor, twenty loans of 5,000 francs each are to be allotted. During the month of January, applications from students were received and inquired into. The committee of the Société des amis of the University of Paris, which has been designated by the rector of the university as the body to decide on applications, has proceeded with the allocation of the loans, and has established the rule that they must be repaid within fifteen years.

#### An Ovation to Dr. Vaillant

The municipality of Paris recently tendered, at a special session of the municipal council, an ovation to the roentgenologist Charles Vaillant, who, after numerous partial operations on his fingers, hand and shoulder, has paid with the loss of both arms for his untiring devotion. Many distinguished persons were present at this meeting, including Hon. Myron T. Herrick, American ambassador; M. Strauss, minister of public health; Professor Roger, dean of the Faculté de médecine, and members of the Carnegie Foundation. Dr. Vaillant was requested to sign in the *Livre d'or* the official report of his reception. This was a pathetic scene; for, in order to accomplish this act, our crippled confrère had to use an apparatus fitted to the right arm



stump. Vaillant was then conducted to the reception room, where he was given a seat opposite the platform, with the American ambassador on his right and M. Paul Strauss at the left. Behind him sat his wife and daughter and Mme. Leray, widow of Dr. Leray, who was the director of the roentgenologic laboratory of the Saint-Antoine Hospital for twenty-five years, and who died in 1921, the victim of his devotion to a worthy cause.

Several addresses were delivered, paying respects to Dr. Vaillant and to the memory of Dr. Leray. The American ambassador gave an address as the representative of the Carnegie Foundation, and to Dr. Vaillant and to Mme. Leray he handed a letter of felicitation from M. Loubet, former president of the republic and head of the Carnegie Foundation in France. Dr. Vaillant replied in a few fitting words in which he spoke of the early development of roentgenology.

#### Medical Fees and the State Treasury

The finance committee of the chamber of deputies has recently passed an order requiring members of the so-called liberal professions to keep a record of payments made to them in remuneration of their services. The fees received by physicians must be recorded, together with the date of payment. On demand, this record must be placed at the disposal of the controller of direct taxes. Likewise, all those who have made the payments must make a memorandum of the fact in a special journal, which must also be open for the inspection of the controller. Aroused by this decision, a syndicate of the physicians of the department of the Seine at its last meeting adopted the following resolution:

For the reasons stated below, the syndicate protests vigorously against the lack of confidence shown in the medical profession, which has never sought to escape the obligation of paying its full amount of taxes, and against the proposed method of recording payments, to be controlled by a government official on the basis of entries made by the clients themselves:

1. This system, no matter what precautions were taken, would be sure to result in the violation of professional secrecy, which is the basis of our fundamental rights and a safeguard of the patients.

2. It would not be long before it would develop a spirit of denunciation, which is considered in France, and rightly so, as the lowest of human qualities. It would soon result in calumnious charges from which the most upright physician would not emerge unscathed.

3. It would consequently decrease the general respect in which physicians are held, and the respect of one's patients is an indispensable asset for physicians if they are to fulfil their important duties.

4. It would reduce the medical profession to a commercial calling, which is contrary to law.

#### Pensions for the War Disabled

Dr. J. Gourdon, who is in charge of industrial reeducation at the Faculté de médecine of Bordeaux and director of the Ecole normale for the industrial reeducation of cripples in the same city, presented a communication to the Academy of Medicine, in which he endeavored to show that the economic efficiency of those pensioned on account of illness is less than that of the mutilated or crippled. Of the former, there are 28 per cent. who are unable to work, while of the latter only 3 per cent. are in that category. The economic efficiency of those granted disability for illness is 75 per cent., whereas the cripples are able to earn 90 per cent. of a normal salary. In order to make up for this inequality in industrial capacity, Gourdon proposed that an increased percentage of disability be granted those ex-service men whose physical activity is seriously diminished. He recommended also that centers of industrial reeducation especially adapted for such men be established, and finally that a large number of administrative positions under the state be reserved for their benefit.

This proposal has called forth a storm of protest from a number of physicians and surgeons whose duty it is to estimate the percentage of disability of those claiming pensions,

for they have been able to show that many sick persons pensioned on account of war service were never in the army, and that their ailments (tuberculosis, deformities, eye affections, mental disorders) were in no wise due to consequences growing out of the war. For instance, Professor Jeanbrau of Montpellier says that of a hundred pensioners whom he examined, ninety-five were granted disability claims on account of illness, yet some of them never served in the army. Thousands of men, it is said, have been pensioned for illness acquired in the army without being subjected to an adequate examination. Therefore, an increase of the percentage of disability, except in a few specific cases, to be particularly determined, would be an injustice and a crushing load on the budget.

In view of this controversy on such an important question, the Academy of Medicine, at the suggestion of the president, Professor Chauffard, has appointed a committee, consisting of Professors Gley, Balthazard, Léon Bernard and Hartmann, and Dr. Sieur of the army medical corps, to inquire into the matter.

#### The Fight Against Cancer

The regional organization of the fight against cancer, as recommended by Professor Bergonié of Bordeaux (*THE JOURNAL*, Aug. 26, 1922, p. 753), seems about to be realized. A few days ago, M. Paul Strauss, minister of public health, inaugurated at Bordeaux the first regional center to carry on the fight against cancer. M. Strauss visited the various services of this anticancer center, which is furnished with the most modern equipment. The minister, on this occasion, bestowed on Professor Bergonié the gold medal of the Carnegie Foundation.

#### MADRID

(From Our Regular Correspondent)

Jan. 18, 1923.

#### Address by Neumann on the Pathology of the Ear

At a joint session of the Madrid Medical Society and the Spanish Society of Otologists, Professor Neumann of Vienna delivered an address on general and anatomic pathology of the internal ear, especially the labyrinth. He pointed out that arteriosclerosis may act either diffusely by causing a general intoxication or locally on the vestibular nerve. He also presented pathologic specimens from cases of arteriosclerosis in which tinnitus has been the initial complaint. Tinnitus resulting from change of posture is characteristic of arteriosclerosis, ringing in the ears in the neuroses appearing usually when the patient is tired. In another specimen, there was enormous dilatation of the saccule as the result of retention of secretion through inflammation and ossification of the septum. These conditions indicate a low grade inflammation, as severe labyrinthitis would cause destruction instead of ossification. The organism of epidemic cerebrospinal meningitis shows an affinity for the endolymph, and causes inflammation with a fibrinoplastic exudate that results in the formation of scars and bands.

Ossification of the vestibulocochlear septum is rather frequent. Suppurative labyrinthitis may be severe or mild, a defensive granuloma developing only in the latter case. The only differential sign is the rapidity of destruction of the internal ear. Lumbar puncture should never be omitted. In many cases, an increase in the number of cells and increase of albumin will be found in the cerebrospinal fluid, indicating that the process is not localized to the labyrinth. In many cases of death after operation, the surgeon is blamed for spreading the infection from the ear to the meninges; but abnormality of the spinal fluid, detected before operation, proves that extension had already occurred.

Neumann described a case, probably unique, of serofibrinous labyrinthitis in a patient who killed himself two hours after



the onset of the first symptom. The pathologic specimen was therefore obtained at a very early stage of the process. The patient had become deaf in one ear many years before, and suddenly, while eating, he became deaf in the other ear. He rushed to see Neumann, who found that he was totally deaf. The examination was hardly over when the patient killed himself. At necropsy, the diagnosis of serofibrinous labyrinthitis was confirmed. The nature of the exudate explains the diverse responses to different tests.

Otosclerosis remains as much a problem as when first studied by Politzer. Neumann showed specimens from cases of progressive deafness, and pointed out that the majority of cases diagnosed as otosclerosis are not such. A specimen which attracted much attention was a neurofibroma from the internal auditory meatus. In neurofibromatosis of the vestibular portion of the nerve, dizziness is the first symptom, total deafness appearing later. The prognosis in growths of the acoustic nerve is serious, as the roentgen rays cannot detect them during the operable stage.

Other specimens exhibited were congenital malformations, which are very rare in the internal ear. One was a case of Mondini's deformity in a patient who was able to hear a little. One specimen demonstrated the possibility of developing intra-uterine suppurative labyrinthitis, and its spontaneous healing, also in utero. The case occurred in a maternity home, and the child died at birth.

Neumann recalled that a few years ago all otologists were interested in nystagmus; today the principal topic is tinnitus aurium, about which little is known. Otologists should try to throw light on this troublesome complaint. Specimens exhibited led to a discussion of neuronophagia. In one section, the auditory cells exhibited protoplasmic changes; in another, there was hyperplasia of the interstitial tissue between the ganglion cells; a third specimen showed only interstitial tissue, the ganglionic tissue having disappeared. These specimens explain some of the possibilities in tinnitus aurium: buzzing in the ears without deafness; deafness without buzzing, and buzzing preceding or following deafness.

The Society of Otologists appointed Professor Neumann an honorary member. A few days before, the Royal Academy of Medicine had appointed him a corresponding member of the academy.

#### Anoxemia from Intoxication

Dr. Carracido, professor of biologic chemistry in the school of pharmacy, and president of the Central University, gave a lecture on anoxemia. It is well known that no form of life can exist without oxygen; even anaerobes absorb it in certain combinations. The quantity of oxygen necessary varies for each species. The higher the animal in the zoologic scale, the more oxygen is required, and special organs have been developed to accumulate it. The human organism has about 5 liters of oxygen in solution in its plasma, but more is needed; hence the presence of red cells, whose function is to store oxygen.

According to one theory, carbon monoxid forms a more stable combination with hemoglobin than does oxygen. Carbon monoxid poisoning is then explained by the replacement of oxygen by carbon monoxid, with consequent anoxemia. Carracido does not accept this explanation, as in such cases the proportion of carbon monoxid which replaces oxygen is very small. Oxyhemoglobin still forms more than 90 per cent. of the total. Dr. Carracido attributes the poisoning to catalysis of oxygenated compounds of the blood.

The most characteristic feature of biologic combinations and reactions is their extreme delicacy. Thus, sugar burns completely in the body at body temperature, while outside the organism temperatures incompatible with life are required for the same purpose. This vital combustion is brought about

through the presence of catalyzers. These bodies are extraordinarily sensitive. There are substances which, even in infinitesimal amounts, paralyze the catalyzers, and this explains why carbon monoxid and sulphureted hydrogen interfere with the catalysis. Carracido, therefore, explains anoxemia, as the result, not of the substitution of carboxyhemoglobin for oxyhemoglobin, but of the insufficiency of the plasmatic oxygen for maintenance of cell life. Carboxyhemoglobin, sulphohemoglobin, and similar substances prevent the catalyzers from furnishing the necessary surplus from the combined oxygen.

Dr. Carracido also called attention to other anoxemic phenomena. Oxyhemoglobin decomposes at a certain temperature, while methemoglobin, an isomeric combination, is inert. Methemoglobin may be produced outside the body by such substances as potassium ferrocyanid. The same transformation may be brought about in the body by the action of many hypnotics and analgesics. Many a person has died from taking sedatives advertised in the newspapers. While death is attributed to nervous accidents, the nervous system is not at fault; it is only the first system to suffer from lack of oxygen.

Transformation into methemoglobin becomes slower with increasing alkalinity; hence, the greater change in cases of acidosis. No methemoglobin is produced when potassium ferrocyanid is injected into an animal because this salt does not dissolve in the cell constituents. But some drugs, such as phenacetin, which do not produce methemoglobin in vitro, may do so in vivo; hence, the danger of using such drugs. Certain toxins, such as that of diphtheria, also cause methemoglobinization. Methemoglobin is dead oxyhemoglobin. It may be brought back to life by being reduced to hemoglobin, which will then become oxyhemoglobin. This transformation is brought about by reducing substances that abound in the body.

#### BERLIN

(From Our Regular Correspondent)

Feb. 15, 1923.

#### Death of Professor Roentgen

Professor Roentgen, the famous discoverer of roentgen rays, died in Munich, March 10, at the age of 77. The importance of his discovery for science in general, and in medicine in particular, needs no elucidation. In America especially, important progress in this field, as regards both theory and practice, has been made. In December, 1895, the first roentgenogram exemplifying the significance of the roentgen ray in the field of medicine was demonstrated in connection with internal medicine by the late neurologist Jastrowitz of Berlin.

#### Cocainism

At the last session of the Berliner medizinische Gesellschaft, the abuse of cocain, especially the method of snuffing it up the nose, was discussed by several speakers, and means were considered as to how this dangerous practice can best be combated. In Germany, the snuffing of cocain did not become widespread until after the war. The commonly assigned causes for this are: a desire to gain relief from the sufferings of the war by the use of narcotics, and secondly, an endeavor to find a substitute for alcohol. Cocain "snuff" may be procured at bars, in low dives, and even on the street, a pinch costing at the present time from 400 to 600 marks. The habit of using cocain snuff seems to spread more rapidly than the injection method, which is usually carried out in one's private apartments. The toxic effect of cocain when snuffed is less than when injected. The dosage producing euphoria is further removed from the toxic dosage than is the case in injections of cocain. Nor are degenerative effects observed so soon. For the most part, irrespon-



sible, psychopathic persons take up with this vicious habit; especially prostitutes, who are usually at the same time alcohol addicts. Cocain addicts have their special resorts throughout the city, where restaurant keepers, waiters and women (especially those in charge of public comfort stations) sell the cocain powder. They also have a type of low doggerel verse. With his watch and pocket mirror in his hand, the "snuffer" eagerly awaits the onset of the euphoria and the pleasurable day dreams. When the effect begins to abate, he takes another pinch. Cocain snuffers can often go several days without feeling the need of sleep. Finally, a hallucinatory stage follows, which is attended by excitability, fear states, and delusions of persecution, which give rise to malicious resistance. The snuffing of cocain causes a characteristic distortion of the nose, while the formation of small ulcers within bring about the perforation of the nasal septum, which, however, as Professor von Eicken pointed out in his discussion, may be observed in other intoxications, especially among workers in chromium. The prognosis for cocain addicts is more favorable than for morphin addicts, since a complete metamorphosis of the organism does not occur, nor are there marked withdrawal symptoms when the amount taken is gradually reduced. If the habit is not broken up, bodily and mental degeneration and premature death are the result. In order to effect a permanent cure, it is very desirable that a patient be separated from his old environment, for otherwise he is liable to relapse. Cocain is often procured by patients deceiving their physician. Often cocain is dispensed by pharmacists for the reason that the prescription of the physician did not state that it should not be refilled. Pharmacists are also frequently deceived by counterfeited prescriptions. The method of controlling the sale of opium as established by international agreement does not apply to pharmacists. Dr. Joel thinks that the situation would be much improved if pharmacists would dispense cocain only to physicians well known to them. Since physicians themselves are restricting their use of cocain more and more and are employing substitutes instead, regulation of the amount manufactured or imported might be established. Professor Hahn, the hygienist, of Berlin, who estimates the number of cocain snuffers in Berlin as from 5,000 to 6,000 (in the other large cities of Germany the habit is, as yet, not so widespread), demands the cooperation of physicians and legislative enactments to curb this evil, which, owing to the form of proselytism adopted, spreads like an infectious disease. He holds that the government should adopt such a definite policy as will prevent the less harmful stimulants, such as tea, coffee and beer, from becoming so high in price that cocain comes to be substituted for them. Professor Anselmino and Professor Rost, both connected with the central public health office, discussed the measures that the administration had applied thus far with a view to checking the spread of this evil.

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## Marriages

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EDWARD WHEELER WILDER, Boston, to Miss Harriet M. Wyman of Lincoln, Neb., at Madura, India, January 15.

MALCOLM MOONEY NEEL, Geiger, Ala., to Miss Martha Mae Dillard of Atlanta, Ga., February 22.

WILLIAM ARTIS DAWSON to Miss Harriette Marie Reder, both of Chicago, December 31.

FRANKLIN W. SELLS, Osceola, Iowa, to Miss Clara Beck of Los Angeles, February 1.

JOHN M. OGLESBY, Alexandria, La., to Miss Angela Leake of New Orleans, recently.

OLGA MCNEILE to Mr. Frederick W. Robinson, both of Los Angeles, February 2.

## Deaths

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**Walker Gill Wylie** ☉ New York; Bellevue Hospital Medical College, New York, 1871; died, March 13, of pneumonia, contributory cause arteriosclerosis. Dr. Wylie was born in Chester, S. C., in 1848. Following graduation from the University of South Carolina, he served throughout the Civil War. After graduating from Bellevue Hospital he went abroad to study the Nightingale system, and returning established the first training school for nurses at Bellevue. Dr. Wylie served at Bellevue for twenty-five years as gynecologist. He was appointed professor of gynecology at the New York Polyclinic Medical School, in 1882, and was recently made professor emeritus. In 1876 he wrote "Hospitals, Their Organization and Construction," for which he received the Boylston prize essay from Harvard Medical School. Dr. Wylie was a member of the New York Obstetrical Society, the New York Pathological Society, the British Gynecological Society, and the Royal Society of Medicine of London.

**Nelson Herrick Henry**, New York; Columbia University College of Physicians and Surgeons, New York, 1879; member of the New York House of Representatives; formerly adjutant-general of the state and surveyor of the port of New York; veteran of the Spanish-American War; major general of the M. C., N. G. New York; member of the New York Academy of Medicine and of the Society of Foreign Wars; aged 67; died, March 16, of cerebral hemorrhage.

**Burton Seymour Harris** ☉ Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1904; for four years secretary of the Kings County Medical Society; member of the American Urological Association, and the Brooklyn Pathological Society; on the staff of the Wyckoff Heights Hospital; aged 39; died, March 5, of epidemic (lethargic) encephalitis, following influenza.

**May Michael** ☉ Chicago; Northwestern University Woman's Medical School, Chicago, 1898; member of the Chicago, and the Central States pediatric societies; attending physician to the Chicago Home for Jewish Orphans, on the staff of the Cook County Hospital, the Mary Thompson Hospital and the Chicago-Winfield Tuberculosis Sanatorium, Winfield; aged 47; died, March 15, of pneumonia.

**Carlyle Edgar Sutphen**, Newark, N. J.; Columbia University College of Physicians and Surgeons, New York, 1896; member of the Medical Society of New Jersey; formerly acting medical director of the Newark City Hospital; served in the M. C., U. S. Army, during the World War; aged 51; died, March 7, at the Mayo Clinic, Rochester, Minn., of pneumonia, following an operation.

**William Caspari, Jr.** ☉ Baltimore; Baltimore Medical College, 1902; formerly associate professor of materia medica and pharmacy at the University of Maryland School of Medicine and the College of Physicians and Surgeons; on the staffs of the Maryland General and the Franklin Square hospitals; aged 61; died, February 13, of angina pectoris.

**Thomas Oscar Edgar** ☉ Dixon, Ill.; Northwestern University Medical School, Chicago, 1907; member of the American Academy of Ophthalmology and Oto-Laryngology, the American Laryngological, Rhinological and Otological Society and the Chicago Ophthalmological Society; aged 51; died, March 5, of bronchopneumonia.

**James Parton Haney**, New York; Medical Department of Columbia College, New York, 1892; formerly president of the Council of Supervisors of Manual Arts and director of arts at the New York University Summer School; lecturer, New York University School of Pedagogy, 1895-1899; aged 52; died, March 3, of pneumonia.

**William Scott Lawrence**, New York; Beaumont Hospital Medical College, St. Louis, 1901; served in the M. C., U. S. Army, during the World War; acting assistant surgeon in the U. S. Public Health Service; formerly chief diagnostician for the St. Louis Health Department; aged 46; died, March 8, of cerebral hemorrhage.

**Clair Clayton Patch**, Chattanooga, Tenn.; National Medical University, Chicago, 1906; University of Tennessee College of Medicine, Memphis, 1914; formerly on the staff of the Eastern Indiana Hospital for Insane, Richmond, Ind.; aged 47; died, January 23, at the Columbus Hospital, Chicago, of peritonitis.



**Philip Louis Hall**, Lincoln, Neb.; Rush Medical College, Chicago, 1883; president of the Central National Bank, the Bank of Mead, and the Nebraska Bankers' Association; regent of the University of Nebraska; vice chairman of the Democratic national committee, 1908-1912; aged 73; died, March 14.

**J. McLean Moulder**, Kansas City, Kan.; Medical College of Ohio, Cincinnati, 1875; member of the Kansas Medical Society; formerly superintendent of the Methodist Hospital, Indianapolis, and superintendent of the Bethany Methodist Hospital, Kansas City, at the time of his death, March 4, aged 67.

**George Albert McCulloch**, Excelsior Springs, Mo.; University Medical College of Kansas City, Kansas City, Mo., 1901; served in the M. C., U. S. Army, during the World War; aged 58; died, February 27, of injuries sustained when the automobile in which he was driving was struck by a train.

**Shailer Emery Lawton** ♂ Brattleboro, Vt.; University of Vermont College of Medicine, Burlington, 1881; for thirty years superintendent of the Brattleboro Retreat; member of American Psychiatric Association and the New England Society of Psychiatry; aged 69; died, March 4.

**Agnes Eichelberger** ♂ Sioux City, Iowa; Northwestern University Woman's Medical School, Chicago, 1888; formerly medical director of the Sioux City Maternity Hospital, and on the staff of the Samaritan Hospital; aged 58; died, February 28, at Los Angeles.

**Benjamin Merrill Hopkinson**, Baltimore; University of Maryland School of Medicine, Baltimore, 1885; member of the Medical and Chirurgical Faculty of Maryland; supervising dentist of the Baltimore City Health Department; aged 62; died, February 22.

**Simeon Newton Leo** ♂ New York; Bellevue Hospital Medical College, New York, 1869; founder and physician in charge of the Home for Aged and Infirm Hebrews; formerly on the staff of the City Hospital; aged 74; died, March 9, of pneumonia.

**Charles Nicholas Meriwether** ♂ Campbell, Neb.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1906; served in the M. C., U. S. Army, during the World War; aged 40; died, February 25.

**John Forsythe McWilliam**, Somerville, N. J.; Jefferson Medical College of Philadelphia, 1884; member of the Medical Society of New Jersey; veteran of the Spanish-American War; aged 62; died, February 12, of heart disease.

**Charles Peters Large** ♂ Meyersdale, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1900; member of the school board; for several years medical director for Somerset County; aged 45; died, February 26.

**Ferdinand F. Seeger**, New York; New York Homeopathic Medical College, New York, 1869; founder of the Hahnemann Hospital and the Northeastern Homeopathic Dispensary; aged 75; died, February 27, of pneumonia.

**Arthur Hanford Baldwin**, Norwalk, Conn.; Hahnemann Medical College and Hospital of Chicago, 1881; aged 68; died, February 18, of a skull fracture sustained when his automobile was struck by a trolley car.

**Frank T. Shaw**, Westminster, Md.; University of Maryland School of Medicine, 1864; formerly member of the state legislature; at one time collector of the port of Baltimore; aged 81; died, February 24, of uremia.

**Samuel A. Campbell**, Malvern, Iowa; State University of Iowa College of Medicine, Iowa City, 1875; member of the Iowa State Medical Society; aged 72; died, February 22, at Long Beach, Calif., from senility.

**Jose Martin Selden**, Skyland, N. C.; University of the South Medical Department, Sewanee, Tenn., 1903; formerly chief of staff of the Erlanger Hospital, Chattanooga, Tenn.; aged 46; died, January 7, at Asheville.

**Fenton Mercer Nichols**, Purcellville, Va.; Medical Department of the University of the City of New York, New York, 1885; member of the Medical Society of Virginia; aged 61; died in February, of pneumonia.

**Samuel Herman Meuer** ♂ New York; Gross Medical College, Denver, 1895; on the staffs of the Harlem Hospital, New York; and Sea View Hospital, Staten Island; aged 55; died, February 27, of septicemia.

**David Orr Edson**, New York; Columbia University College of Physicians and Surgeons, New York, 1891; on the staff of the New York Orthopedic Hospital; aged 59; died, February 27, of acute secondary anemia.

**Edwin Dearth Orr**, Mount Hope, Wis.; Rush Medical College, Chicago, 1883; member of the State Medical Society of Wisconsin; member of the school board; aged 75; died, February 11.

**Eugene Myron Herbert**, Roanoke, Va.; Atlanta College of Physicians and Surgeons, Atlanta, Ga., 1902; member of the Medical Society of Virginia; aged 54; died recently, of influenza.

**John Wesley Ranck**, Penns Grove, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1872; also a druggist; aged 78; died, February 18, of pneumonia.

**David Wesley Harris**, Carriers Mills, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1879; also a druggist; aged 66; died, February 10, of cerebral hemorrhage.

**William Huckin**, Wasco, Ore.; Rush Medical College, Chicago, 1903; member of the Oregon State Medical Association; aged 56; died, January 3, of chronic nephritis.

**Joseph Freeman**, Sullivan, Ind.; Medical College of Ohio, Cincinnati, 1879; member of the Indiana State Medical Association; aged 68; died, February 19, of carcinoma.

**Ephraim De Groff**, Hackensack, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1863; Civil War veteran; aged 86; died, February 17, of pneumonia.

**William E. Stedman**, Sullivan, Ill.; Kentucky School of Medicine, Louisville, 1880; formerly member of the state legislature; aged 75; died recently, of influenza.

**Stephen D. Doar**, McClellanville, S. C.; Medical College of the State of South Carolina, Charleston, 1860; Civil War veteran; aged 85; died, January 29, of senility.

**James C. Harrell**, Omaha, Ill.; Eclectic Medical College of Pennsylvania, Philadelphia, 1870; also a druggist; aged 75; died in February, of mitral regurgitation.

**Thomas P. Coldwell**, London, Ky.; University of Louisville Medical Department, Louisville, 1871; Civil War veteran; aged 81; died, February 26, of senility.

**Daniel Henry Muir**, Newaygo, Mich.; University of Michigan Medical School, Ann Arbor, 1871; aged 79; died in January, at Muskegon, of senility.

**Richard Langford Patteson**, Buffalo; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1885; aged 61; died, February 7, of myocarditis.

**Francis Othyle Cornwell** ♂ Gainesboro, Tenn.; University of Tennessee College of Medicine, Memphis, 1912; aged 33; died, February 27, of paralysis.

**Daniel Aloysius Hanrahan**, Stamford, Conn.; Bellevue Hospital Medical College, New York, 1893; aged 54; died, February 27, of heart disease.

**Charles Glendenning Willson**, Chicago; Wisconsin College of Physicians and Surgeons, Milwaukee, 1896; aged 63; died, March 7, of chronic nephritis.

**William Adler** ♂ New York; Columbia University College of Physicians and Surgeons, New York, 1896; aged 49; died, February 26, of polyneuritis.

**Joshua Royston Green** ♂ Towson, Md.; University of Maryland School of Medicine, Baltimore, 1899; aged 48; died, February 22, of pneumonia.

**John A. Hunter**, Pittsburgh; Starling Medical College, Columbus, Ohio, 1891; Civil War veteran; aged 76; died, January 22, of pneumonia.

**Harry Hilton Brown**, Jasper, Tenn.; University of Tennessee College of Medicine, Memphis, 1921; aged 26; died, February 21, of tuberculosis.

**Mary Lavinia Briggs**, Dryden, N. Y.; University of Michigan Medical School, Ann Arbor, 1879; aged 74; died, January 12, of pneumonia.

**W. E. Hall**, Hallsburg, Texas; Chicago Homeopathic Medical College, Chicago, 1883; aged 75; died, February 20, following an operation.

**Samuel Hyatt Wellings**, Detroit; University of Michigan Medical School, Ann Arbor, 1871; aged 80; died, February 28, of heart disease.

**Robert A. Davis**, Brooklyn; Louisville Medical College, Louisville, Ky., 1878; also a druggist; aged 70; died, February 23, of asthma.

**Douglas P. Adams**, Columbus, Ohio; Cincinnati College of Medicine and Surgery, Cincinnati, 1892; aged 82; died, February 21, of senility.

**Benjamin F. Wolfe**, Jasper, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1877; aged 89; died, February 22, of arteriosclerosis.



**Henry Wilson Geissinger** ♂ Grove City, Ohio; Ohio Medical University, Columbus, 1897; aged 54; died, February 22, of cardiac asthma.

**Benjamin Henry Voelbel** ♂ Newark, N. J.; Baltimore Medical College, Baltimore, 1901; aged 48; died, February 21, of heart disease.

**Harry Edward Diers**, Miamisburg, Ohio; Jefferson Medical College of Philadelphia, 1907; aged 38; died, February 24, of heart disease.

**Martin Luther Dottin**, Chicago; Howard University School of Medicine, Washington, D. C., 1915; aged 31; died, January 12, of diabetes.

**Peter Cavanagh**, Schuyler, Neb.; University of Michigan Medical School, Ann Arbor, 1883; aged 66; died, January 11, of pneumonia.

**Tony L. Bryan** ♂ Evansville, Ind.; Medical College of Evansville, 1882; aged 64; died, February 23, of asthma and heart disease.

**Elmer Hinman Dwell** ♂ Northwood, Iowa; Northwestern University Medical School, Chicago, 1899; aged 48; died, February 28.

**Thomas Parry Tyson**, Wadsworth, Nev.; University of Pennsylvania School of Medicine, 1890; was shot and killed, February 17.

**Rufus Berley Epting** ♂ Greenwood, S. C.; University of Maryland School of Medicine, Baltimore, 1885; aged 65; died, February 18.

**Ellis Wolcott Crater** ♂ Oceanport, N. J.; Medical Department of Columbia College, New York, 1878; aged 65; died, February 22.

**Clarence W. Webb** ♂ Wellsboro, Pa.; College of Physicians and Surgeons, Baltimore, 1879; city physician; aged 67; died, February 6.

**William M. Casey**, Seymour, Ind.; Medical College of Ohio, Cincinnati, 1878; aged 75; died, February 27, of cerebral hemorrhage.

**Hugh James Linn**, Oakland, Calif.; University of Pennsylvania School of Medicine, Philadelphia, 1878; aged 72; died, February 9.

**Gabriel C. Boudousquie**, New Orleans; Medical College of Alabama, Tuscaloosa, 1893; aged 52; died recently, of pneumonia.

**Jules G. Belknap**, Sulphur Springs, Ark. (licensed, Arkansas, 1903); aged 67; died, February 26, of influenza and pneumonia.

**John E. Gilmore**, Baldwin, Iowa; Medical Department University of Iowa, Keokuk, 1867; aged 83; died, February 24, of senility.

**Espy L. Smith** ♂ Chicago; Chicago Homcopathic Medical College, Chicago, 1883; aged 70; died, March 5, of heart disease.

**Charles Rufus Whitney** ♂ Fonda, Iowa; Rush Medical College, Chicago, 1894; aged 57; died, February 21, of heart disease.

**Daniel Orville Abrams**, Independence, Mo.; Rush Medical College, Chicago, 1884; aged 75; died, February 27, of heart disease.

**Uberto H. Merson**, Anderson, Ind.; Pulte Medical College, Cincinnati, 1886; aged 59; died, March 3, of cerebral hemorrhage.

**Ulysses Grant Richardson**, Chicago; Barnes Medical College, St. Louis, 1895; aged 56; died, March 13, of pneumonia.

**Maurice Isaac Heider**, Philadelphia; Jefferson Medical College of Philadelphia, 1891; aged 57; died, February 14.

**George Franklin Ketcham**, Brooklyn; Long Island College Hospital, 1876; aged 66; died, February 14, of carcinoma.

**Frank Caldwell**, Cincinnati; Medical College of Ohio, Cincinnati, 1882; aged 65; died, February 14, of heart disease.

**Luke Fox**, Tacoma, Wash.; Detroit College of Medicine and Surgery, Detroit, 1895; aged 49; died, February 20.

**Robert S. Wilson**, Gainesville, Texas; St. Louis Medical College, St. Louis, 1876; aged 67; died, February 20.

**William Joseph Johnstone** ♂ Boston; Tufts College Medical School, Boston, 1896; aged 60; died, February 13.

**Benjamin J. Milam**, Macon, Mo.; Jefferson Medical College of Philadelphia, 1877; aged 74; died, February 17.

**Arthur A. Milligan**, Rogers, Ark.; Physio-Medical Institute, Cincinnati, 1883; aged 63; died, February 9.

## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

FRANZ C. A. GOERSS

### How Oshkosh, Wisconsin, Dealt with an "Advertising Specialist"

Franz Carl Anton Goerss, who has been an "advertising specialist" for years, last December made the mistake of opening an office in Oshkosh, Wis. On January 18, on the complaint of the Social Medical Club of Oshkosh, through its secretary, Dr. Edward J. Campbell, Goerss was arrested for advertising in the *Daily Northwestern*, Oshkosh, to cure venereal disease, which is contrary to the Wisconsin statutes. Goerss first pleaded not guilty but later changed his plea to "guilty" and was fined \$100 and costs. The local society followed up the matter and on March 3 Goerss' Wisconsin license was revoked in the Circuit Court. Goerss has left Wisconsin.

Goerss himself is a somewhat insignificant specimen of the genus quack, but his case is of interest because it points a moral. For years this man has been practicing medicine. As will be shown later, the evidence indicates that he was never graduated in medicine and there is reason to believe that the various state licenses that this man holds have been obtained by misrepresentation or fraud.

#### CLAIMS GRADUATION BY ERLANGEN UNIVERSITY

Goerss claims graduation from the University of Erlangen, Germany. He made this claim when he applied for a license from the Wisconsin Board of Medical Examiners in 1907. At that time he declared under oath that he had been graduated in 1869 by the Frederick Alexander University, Erlangen, Bavaria, Germany. As will be shown later, the state authorities of Illinois, as long ago as 1893, took up officially with the University of Erlangen the question of Goerss' graduation and published the reply from the University of Erlangen to the effect that no man of the name of Franz C. A. Goerss or any one of the name of Goerss was ever graduated either in 1869 or for ten years previously or ten years subsequently (1859 to 1879). In Goerss' application to the Wisconsin board he also swore that he had taken three courses of lectures at the Berlin Polytechnic Seminary.

#### WHAT ILLINOIS OFFICIALS FOUND

Some years previously Goerss had applied for a state license in Illinois. In this connection we cannot do better than publish verbatim a few paragraphs that appeared Dec. 31, 1894, in the Seventeenth Annual Report of the State Board of Health of Illinois:

"*Case of Franz C. A. Goerss*: On March 23, 1889, Franz C. A. Goerss filed his application for the State certificate entitling to practice medicine and surgery in Illinois. He presented a diploma purporting to have been issued by the University of Erlangen, Bavaria, dated Jan. 26, 1869, with his affidavit that said diploma was the genuine diploma of that institution and has been issued to him after due examination.

"He presented also letters of recommendation from medical men of East Saginaw and Detroit and paid the fee of \$5.

"On March 29, the receipt of his fee and application were acknowledged and he was asked to furnish letters from physicians residing in this State. Replying, he said:

"I am not acquainted in America, and send you the names of the doctors whom I know. I would ask you to send either the license or my diploma."

"On the 12th of May he writes to know whether the Board has decided his case, and says:

"Although I am poor and possess but \$150, I would gladly send \$100 to get my license, if it can be more quickly obtained with money."

"On April 13th his application was declined and his fee returned. Nov. 8, 1889, he filed another application and



presented a letter of recommendation signed by Dr. G. Schlick and Dr. J. E. Harper of Chicago, and upon these credentials a State certificate was issued him.

"On Jan. 14, 1891, a letter was received from the Western Pennsylvania Medical College, asking for information concerning the professional standing of F. C. A. Goerss, who had presented to that college his diploma from Erlangen, Bavaria, and desired the endorsement of its faculty. Secretary replied, giving the history of the case. On April 15, 1893, a letter was received from Chicago in which it was charged that Goerss had purchased his diploma of Jno. Buchanan of New York. A letter was addressed July 31, 1893, to the dean of the University of Erlangen, asking whether the diploma of that institution had been issued to Goerss. To this he replied:

"I have had the list of the graduates of 1869 very carefully examined, also the lists for ten years before and after (1859-1879) and am convinced that the name Franz C. A. Goerss, or the name Goerss at all, does not occur in them."

"Notice was sent to the Board's attorney in Chicago to be served on Goerss to appear at this meeting and show cause why his certificate should not be revoked for unpro-

Menasha, Wis., who sent in one of Goerss' preliminary advertisements and asked for some information on the man. Dr. Rogers was sent such material as the Propaganda department had regarding Goerss and was asked to bring the matter to the attention of the local county officials. Dr. Rogers turned the facts over to the Social Medical Club of Oshkosh, and that local organization through its secretary, Dr. Edward J. Campbell, immediately started an investigation of Goerss and his methods.

Preparatory to opening his office in Oshkosh, Goerss, like most advertising quacks, laid down a preliminary barrage of advertising. He seems to have especially favored the *Oshkosh Northwestern* and this paper was perfectly willing to be so favored. In the *Northwestern* for December 12 there appeared an advertisement, published in news style, with this heading:

"DR. GOERSS WILL SOON BE READY. The European Specialist Hopes to Announce His Opening Within a Few Days. Not a Little Speculation Has Arisen Regarding the Location in Oshkosh of a Distinguished European Medical Savant."

Then followed more than half a column of puffery and falsehood. One of the paragraphs in the article read:

"Dr. Goerss is a medical graduate of the Royal College of Physicians and Surgeons, Edinburgh, Scotland, one of the most famous universities in the world, and one of the most difficult to receive an M.D. degree from. Dr. Goerss also carries the degree of M.D. from Heidelberg, Germany, and from Toronto University, Canada. An array of medical degrees which are probably not possessed by any other physician in the United States."

#### FAKING THAT WAS NOT EVEN CLEVER

This paragraph illustrates the type of mind that goes with quackery. Goerss first claimed to be a graduate of the "Royal College of Physicians and Surgeons, Edinburgh, Scotland, one of the most famous universities in the world, and one of the most difficult to receive an M.D. degree from." There is no "Royal College of Physicians and Surgeons, Edinburgh." There is a "Royal College of Physicians, Edinburgh" and there is a "Royal College of Surgeons, Edinburgh." Neither one of these is either a university or a college in the American sense; each is a licensing body. Goerss might as well have claimed that he was a "graduate of the State Board of Medical Registration and Examination of Kansas, one of the most famous universities in the world and one of the most difficult to receive an M.D. degree from." Such a statement would have been just as sensible as the one that he published and more nearly accurate because, as a matter of fact, Goerss has been granted a license by Kansas. Goerss also made the statement that he "carries the degree of M.D. from Heidelberg, Germany, and from Toronto University, Canada." Two more falsehoods; Goerss was never graduated by Heidelberg and is utterly unknown to the University of Toronto.

In another of the Oshkosh advertisements Goerss claimed to have the "endorsement" of "Jefferson Medical University, Philadelphia." There is no "Jefferson Medical University." Jefferson Medical College of Philadelphia wrote that Goerss is unknown to them.

All of the facts in the case of Goerss were brought to the attention of Mr. D. K. Allen, District Attorney of Winnebago County by Dr. Edward J. Campbell, Secretary of the Social Medical Club of Oshkosh. The people of Oshkosh and vicinity owe Dr. Campbell and District Attorney Allen a debt of gratitude in driving this quack from their State.

The *Oshkosh Northwestern*, instead of standing for the rights and protection of the public in this matter, has shown itself as morally culpable as Goerss in deceiving the public and violating the Wisconsin statutes. It is a pity that the Wisconsin law does not hold newspapers that publish illegal advertisements equally guilty with the advertisers. We are informed that Goerss while in Oshkosh was merely a hireling and that the individuals behind him were P. J. and William Surand.

#### THE SUCCESSORS OF GOERSS

Even after Goerss had been prosecuted and driven from the state the *Northwestern* failed to print anything relative to the departure of Goerss and immediately opened its adver-

Some typical Goerss advertising. The specimen on the left appeared in a Bartlesville, Okla. paper in 1919, when Goerss was the "Edinburgh Specialists." The other two specimens are recent advertising from the *Daily Northwestern* of Oshkosh, Wis. Note the claims in the advertisement on the right that Goerss is a "graduate of the Royal College of Physicians and Surgeons Edinburgh, Scotland." It would have been just as sensible to have said that he was "a graduate of the State Board of Medical Registration and Examination of Kansas." The "Royal College of Physicians, Edinburgh" and the "Royal College of Surgeons, Edinburgh" do not graduate anybody; they are licensing bodies. Notice also that Goerss claims the degree of "M.D." from the University of Heidelberg, Germany, and from Toronto University, of Canada. Goerss was never graduated by Heidelberg and is unknown to the University of Toronto.

fessional and dishonorable conduct, but the notice was returned with the information that Goerss had left the State and was at present in San Francisco. The notice will be served on him as soon as his address can be ascertained."

In spite of this published record, Goerss seems to have obtained licenses in Kansas, Oklahoma and Arkansas, as well as in Wisconsin. In 1919 Goerss was advertising as the "Edinburgh Specialists" at Bartlesville, Okla. Presumably at that time "Berlin Specialists" or "Erlangen Specialists" would not have made a good advertising slogan.

#### THE OSHKOSH ADVERTISING CAMPAIGN


Goerss' activities in Wisconsin were first brought to the attention of THE JOURNAL by Dr. Ronald B. Rogers, President of the Twin City Medical Association, Neenah and



tising pages to "Dr. H. R. Harvey and Associated Specialists" who held themselves out as "Successors to Dr. Goerss." Dr. Campbell tells us that the individual who registered in Winnebago County for the H. R. Harvey outfit is one George L. Gibbs of Milwaukee. To complete the records in this matter the following facts taken from data in the files of the American Medical Association may be of interest:

H. R. Harvey first located at Rockford, Ill., in 1915, where, apparently, he promptly went into the advertising business. Advertisements of the "weak men" type of "Drs. Francis and Harvey" appeared in the Rockford papers. Francis, with whom Harvey was associated, seems to have been Stanley D. Francis who for a while advertised as "Dr. S. D. Francis and Associated Specialists."

From  
Oshkosh Northwestern,  
2/23/23



**Dr. Goerss**  
100 Main St., Oshkosh, Wis.  
Wishes to announce he has disposed  
of his office equipment and  
practice to  
**Dr. H. R. Harvey**  
and Associated Specialists  
who, at this time, wish to assure all,  
of as good, if not superior treat-  
ments and services.

**CONSULTATION AND  
EXAMINATION FREE**

After Goerss had been found guilty of violating the Wisconsin statutes and fined and his Wisconsin license revoked, the *Oshkosh Northwestern* carried an advertisement stating that "Dr. H. R. Harvey and Associated Specialists" had taken up Goerss' business at the old stand! We are informed that "Dr. H. R. Harvey and Associated Specialists," as represented in Oshkosh, is really one G. L. Gibbs, M.D., of Milwaukee, who has Wisconsin license No. 941, granted in 1900. Gibbs is said to have a nurse in full regalia in his office, and is continuing the practice of "Dr. Goerss."

S. D. Francis and his brother G. Gordon Francis appear to have operated a string of advertising offices in various parts of the country. Harvey was apparently merely a hired man. G. G. Francis in August, 1921, wrote on the stationery of George L. Gibbs, M.D., of Milwaukee a letter to a physician whom he thought he was going to hire to run one of his, Francis', advertising offices. Francis instructed the man to go to Rockford and report to Harvey who would instruct him into the ways and means of conducting an advertising office. Francis wrote that the man would receive a salary of \$40 a week and receive 25 per cent. of all money taken in over \$500 a month. He wrote further "I also desire that you not tell Dr. Harvey too much or, in fact, anything about our financial arrangements."

In closing, it is pertinent to ask what will the other states (Kansas, Oklahoma, etc.) that have granted Goerss a license on the basis of claims that have been shown to be fraudulent do in the matter of revoking his license?

## Correspondence

### THE ALKALINE TIDE IN URINE, AGAIN

*To the Editor:*—Referring to the article of Drs. Hubbard and Munford in *THE JOURNAL*, February 3, it is remarkable that a substantial agreement in experience leads to so wide a divergence of opinion. In estimating the personal equation, it must be admitted that I have often been criticized for being too literal and pragmatic. While my letter in *THE JOURNAL*, Dec. 9, 1922, referred to the possibility of an alkaline tide in a "transcendental sense," the term alkaline to me means a change of color with phenolphthalein requiring an appreciable addition of acid to discharge it. The same personal tendency makes me eliminate certain of Browning's poems over which many persons pore for hours, and litmus as an indicator, whereas Drs. Hubbard and Munford have been more patient and have presented a beautiful table of correspondences in the amphoteric reaction.

Their method of estimating acidity directly in terms of cubic centimeters of tenth-normal alkali required to neutralize the hourly excretion of urine is much more sensible than my "acid units," except that for some purposes the larger numbers are more convenient and, as in the case of large and small calories, it is merely a question of placing a decimal point.

It seems to me that, aside from the question of adopting the doctrine of relativity and designating as alkaline what is merely a reduction of acidity, Drs. Hubbard and Munford have ignored the fact that the expression: "acid and alkaline tide in urine," as long employed in medical literature, usually, if not always, refers to the belief that this tide occurred conversely to digestive secretion, i. e., that the urine became alkaline shortly after a meal while the stomach was secreting acid (the tidal idea antedating the understanding that this acid was hydrochloric) and subsequently acid, while the intestinal and great tributary glands were secreting alkali.

It is this kind of tide that I deny, not only on empiric evidence but also because a true understanding of the process of digestion shows that there cannot be any true tidal action, although, in some degree and with various qualifications, certain tendencies in support of the old theory may be shown to exist, but in a transcendental sense which would only confuse the ordinary investigator. Table 1 of the authors mentioned in the absence of a statement of mealtimes and general make-up of the meals, and the lack of a separation of the urine from 7 p. m. to 7 a. m., does not show any evidence of such a tide except that the very moderate reduction of acidity after what may have been taken as the breakfast hour might be so interpreted. If they will subdivide the urine more accurately, with reference to mealtimes, they will find various inconsistencies. Sometimes, even after meals rich in acid-producing substances, the mere elimination of an excess of water in advance of the development of acid radicals from ingesta or as a result of catabolism of tissues will render the urine low not only in degrees of acidity but also in amount of alkali required to neutralize per hour, immediately after a meal. This, of course, looks like a verification of the alkaline tide theory, if we use the term in a relative sense; but the more plausible explanation is that the elimination of water precedes that of acid radicals which require more time for absorption or even for development.

In persons leading what is called a sedentary life, the evening meal often, perhaps usually, contains about half the total nourishment of the twenty-four hours, and rather more than half of the acid factors. Such persons are rather likely to have at least half of their physical activity after dinner. Thus, the evening urine, say up to 23 or 24 o'clock (not to



mention the occasional lengthening of the day to 25 or 26 o'clock) is very likely to be highly acid in degrees (from 90 to 100 not very rarely) and disproportionately abundant. Often the urine from 18 to 24 o'clock will represent 300 c.c. of tenth-normal solution (the total for the day from Table 1 being 321.10, if my understanding of the data is correct and I have made no mistake in arithmetic, this agreeing substantially with my own averages). At any rate, more than a quarter of acid elimination will occur in the last quarter of the day, and by morning the residue will be very low. It is not materially increased by the usual light breakfast, so that it is to be expected that the low point of acid elimination will occur sometime during the morning before any considerable quantity of acid radicals are introduced by ingestion or developed by catabolism. Probably farmers, soldiers and persons who eat a hearty breakfast and no luncheon would show corresponding differences in the curve, if the term curve is applicable to a fluctuation that is always exceedingly irregular.

A. L. BENEDICT, M.D., Buffalo.

### "DIVERTICULUM OF BLADDER IN THE INGUINAL CANAL"

*To the Editor:*—In reference to diverticulum of the bladder in the inguinal canal, described by Dr. Stein in *THE JOURNAL*, March 3, it is interesting to note that in the surgical literature of one hundred years ago, frequent mention is made of inguinal cystocele. Samuel Cooper of London, in his *Surgical Treatise (First Lines of Practice of Surgery with Notes, by Alexander H. Stevens, M.D., Vol. 2, New York, James V. Seaman, 1822)*, discusses at considerable length "Cystocele or Hernia of the Bladder." He writes: "The protrusion of the bladder at the abdominal ring is the most frequent. It is generally seen in male subjects, a large proportion of whom are considerably advanced in life, and have been repeatedly afflicted with retention of urine." As the author advises waiting until the fourth day to relieve, by operative procedures, complete retention of urine when catheterization is impossible, stating this to be the accepted dictum of the most eminent surgeons, such practice might account for the frequent occurrence he describes. To quote further: "Contrary to what is usual, however, a few instances are recorded in which the protrusion of the bladder at the abdominal ring has been noticed in young persons and even females. . . . a suspicion has originated that the disease may even sometimes be congenital."

Cooper cites numerous cases. Plater, a physician at Bâle, in attending a case of retention of urine, found the patient's scrotum considerably swelled. Thinking this might be the underlying difficulty in preventing urination, he punctured the tumor, when to his surprise urine burst forth. Guyon, Vander Wiel and others reported similar cases. Verdier is mentioned as recording numerous cases in which urinary calculi had made their way out of the groins by ulceration.

Pott, in operating for supposed inguinal hernia of the intestines, by mistake cut away a protruding portion of the bladder. Recovery being effected, the operation was advised for such bladder condition.

Even bilateral inguinal and femoral hernia of the bladder is described.

T. L. EYERLY, M.D., Denver.

**Creative Intelligence Confined to Few.**—The great mass of humanity has never had anything to do with the increase of intelligence except to act as its medium of transfusion and perpetuation. Creative intelligence is confined to the very few, but the many can thoughtlessly avail themselves of the more obvious achievements of those who are exceptionally highly endowed.—Robinson: *The Mind in the Making*.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### THE BITES OF INSECTS

*To the Editor:*—Inform me where I can obtain information on the treatment of bites and stings of (1) black ants, (2) spiders and (3) kissing bugs, or, as some call them, vinegerones. I believe that black spiders and kissing bugs are quite common in Arizona, but we have a few here. (4) Also tell me the latest treatment for the dermatitis caused by poison oak and poison ivy.

WILLIAM G. CARSON M.D., Cutler, Colo.

ANSWER.—1. According to Castellani and Chalmers' *Manual of Tropical Medicine*, a satisfactory treatment for the bites of black ants is a local application of 5 per cent. phenol (carbolic acid).

2. For spider bites the same authors recommend application of a proximal ligature, incision of the wound and application of a mild alkali, such as diluted ammonia water or a weak solution of potassium carbonate. A strong solution of potassium permanganate is suggested. An article on the black spider was published in *THE JOURNAL*, Feb. 14, 1920, p. 479.

3. The name vinegerone is not properly applied to the insects known as kissing bugs. The vinegerone is the whip-tailed scorpion, *Thelyphonus giganteus*. It produces an irritating excretion which has an odor resembling vinegar. The name "kissing bug" has been applied to several species of the order *Reduviidae*, such as *Rasahus biguttatus*, *Opsicoetes personatus*, *Melanolestes picipes* and *Conorhinus sanguisugus*. Their bites are painful, and may require medical treatment. Tincture of iodine and phenol ointment have been used with success (*THE JOURNAL*, July 22, 1899, p. 220).

4. The treatment for the dermatitis produced by poison oak and poison ivy is thorough washing of the parts with alcohol or, cautiously, with gasoline; or, if the parts are not too tender, with soap and water. Care must be taken that the skin is protected against contact with more of the irritant poison from clothing, tools and the like which had previously been contaminated by touching the plants.

### CERTIFICATE OF NATIONAL BOARD OF MEDICAL EXAMINERS

*To the Editor:*—1. What are the advantages of passing the National Medical Board Examination? 2. Does California reciprocate with Massachusetts? Please omit name.

M. C. M., Mass.

ANSWER.—1. The advantages of passing the National Board of Medical Examiners are:

(a) The examination is rapidly becoming recognized as a thorough test of a physician's qualifications, and its certificate, therefore, carries with it a corresponding distinction. (b) Holders of its certificate are eligible for admission to the final examinations of the Conjoint Examining Board of England and the Triple Qualification Board of Scotland. (c) Its certificates are now recognized by the licensing boards of twenty-three states, which makes the holders eligible for license in those states without further examination. These states are:

Alabama	Idaho	Nebraska	Rhode Island
Arizona	Iowa	New Hampshire	South Carolina
Colorado	Kentucky	New Jersey	Texas
Delaware	Maryland	North Carolina	Vermont
Florida	Massachusetts	North Dakota	Virginia
Georgia	Minnesota	Pennsylvania	

The secretary of the board is Dr. John S. Rodman, 1310 Medical Arts Building, Philadelphia.

2. No.

### TREATMENT OF DRUG ADDICTS WITH ALCOHOL

*To the Editor:*—At present it seems that we may experiment with the treatment of drug addiction. It has been proposed to reduce gradually, substituting alcohol for the narcotic. Since it has been reported that drug addicts cannot take alcohol, would it be dangerous to substitute alcohol hypodermically for morphin?

K. S., New York.

ANSWER.—Drug addicts can and do take alcohol. Instances are known in which drug addicts have taken whisky copiously in addition to morphin. Although alcohol is absorbed when given hypodermically, there is a sensation of burning and smarting. It would seem foolish to attempt to treat opium addicts by substituting alcohol for the drug.



# Medical Education, Registration and Hospital Service

## COMING EXAMINATIONS

IDAHO: Boise, April 4. Dir., Mr. Harry L. Fisher, Boise.  
MONTANA: Helena, April 3. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

### Arizona October Examination

Dr. Ancil Martin, secretary, Arizona State Board of Medical Examiners, reports the written examination held at Phoenix, Oct. 2-3, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 3 candidates examined, 2 passed and 1 failed. Seven candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Tulane University	.....	(1920)	85
University of Michigan Medical School	.....	(1921)	85.5

#### FAILED

Hahnemann Medical College and Hospital of Chicago	.....	(1921)	63.2
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College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Medical Evangelists	.....	(1919)	California
Louisville Medical College	.....	(1892)	Alabama
Tulane University	.....	(1908)	Louisiana
Marion-Sims College of Medicine	.....	(1892)	Missouri
St. Louis University School of Medicine	.....	(1905)	Utah
University of Buffalo	.....	(1894)	New York
University of Tennessee	.....	(1919)	Tennessee

### Colorado October Examination

Dr. David A. Strickler, secretary, Colorado State Board of Medical Examiners, reports the written and practical examination held at Denver, Oct. 10, 1922. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 10 candidates who took the physicians' and surgeons' examination, 2, including 1 osteopath, passed, and 8 candidates failed. Thirty-four candidates were licensed by reciprocity, and one candidate was licensed on government credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
St. Louis College of Physicians and Surgeons	.....	(1920)	75.2
Osteopath	.....		75.5

#### FAILED

Illinois Medical College	.....	(1897)	55
Kansas City College of Medicine and Surgery	.....	(1921)	62.7
Kansas City University of Physicians and Surgeons	.....	(1922)	56.3
St. Louis College of Physicians and Surgeons	.....	(1922)	58.1
University of West Tennessee	.....	(1918) 63, (1921) 55.9, (1922)	49.3
Undergraduate	.....		59.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas	.....	(1916)	Arkansas
College of Medical Evangelists	.....	(1921)	California
Howard University	.....	(1904)	Mississippi
College of Physicians and Surgeons, Chicago	.....	(1908), (1910)	Illinois
Northwestern University	.....	(1910)	Illinois
Rush Medical College	.....	(1896)	Kansas
Drake University College of Medicine	.....	(1910)	Iowa
Keokuk Medical College, College of Phys. and Surg.	.....	(1906)	Iowa
State Univ. of Iowa Coll. of Med.	.....	(1889) Nebraska, (1916)	Iowa
University of Kansas	.....	(1920)	Kansas
Louisville Medical College	.....	(1894)	Oklahoma
Tulane University	.....	(1896)	Louisiana
Detroit College of Medicine and Surgery	.....	(1921)	Michigan
Beaumont Hospital Medical College	.....	(1892)	Illinois
St. Louis College of Physicians and Surgeons	.....	(1903)	N. Dakota
(1909) Missouri			
St. Louis University School of Medicine	.....	(1903), (1909)	Illinois
(1912) Missouri			
University Medical College of Kansas City	.....	(1908)	Wyoming
Washington University	.....	(1920), (1921)	Missouri
Creighton University	.....	(1914)	Nebraska
University of Nebraska	.....	(1902)	Nebraska
Eclectic Medical College	.....	(1912)	Ohio
Starling Medical College	.....	(1890)	W. Virginia
University of Pennsylvania	.....	(1921)	Penna.
Meharry Medical College	.....	(1906) Arkansas, (1907)	Mississippi
(1908) Tennessee			
Tennessee Medical College	.....	(1900)	Tennessee
University of Virginia	.....	(1917)	Virginia

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Rush Medical College	.....	(1917)	U. S. Navy

## Book Notices

ALOHA AROUND THE WORLD. By Karl Vogel. With an Introduction by Commodore Arthur Curtiss James. Cloth. Price, \$3.50. Pp. 274, with 95 illustrations. New York: G. P. Putnam's Sons, 1922.

An interesting preface to this book by Commodore Arthur Curtiss James tells how he took the guests around the world in his yacht *Aloha*, thus fulfilling a dream of years, unfulfilled with previous vessels. Among the guests was Dr. Karl Vogel, who kept a daily diary of the progress of the trip, charting the position of the yacht and the distance covered each day. His book is distinctly one for other enthusiastic yachtsmen, for he gives fully all those points that are most likely to interest the sailor rather than the tourist. The trip proceeded leisurely; the days were spent in the usual mild amusements indulged in on such vessels. From the standpoint of the reader, the book would be greatly improved by condensation and the elimination of repetition and nonessential details. It would then lose, however, in representing a good record of the trip for those who took part in the voyage. The book is nicely printed, and is illustrated with numerous photographs taken en route.

DER CHRONISCHE HEREDITÄRE HÄMOLYTISCHE IKTERUS. (Konstitutionelle Hypersplenie). Eine nosographische Studie von E. Meulengracht. Paper. Pp. 226, with illustrations. Leipsic: Dr. Werner Klinkhardt, 1922.

This is a discussion of every known phase of hemolytic icterus. Although the book does not enrich our knowledge of this condition by many new facts, it is of great value because it brings to our attention in a clear and compact form the author's methods of examination and deductions from his experience—he saw fifty cases in the course of four years—and it reviews the literature. The rôle assumed by hereditary influence is so important that to it the author applies the term dominant factor, on the basis of mendelian inheritance. Many cases may show some evidence of an early existence, such as a severe icterus neonatorum. Familial existence is well known. The rare occurrence of a high color index renders it possible that the condition under observation may belong to another group. Vital staining reveals that from 20 to 50 per cent. of the red cells are immature. The author lays great stress on increased fragility. Although this occurs in many other conditions, it is never so marked or so constant as in hemolytic icterus. He decries the value of reports of many observers, because they do not take into consideration the influence of shaking the specimen, the effect of temperature, and normal physiologic variations of the red cells. This symptom is a phenomenon of regeneration. Jaundice is always present, but may be so slight as to escape unnoticed. Dissociated jaundice is always found in the blood serum. The spleen may not be found enlarged on physical examination, but at postmortem examination or at operation it is found enlarged. The author describes in detail the clinical course, the pathologic anatomy, the progress of the disease, the complications, of which gallstones are not infrequent, and cites many examples of the salutary effect of splenectomy, which he considers the best form of treatment. The theory that best explains the cause is hypersplenism. The last chapter is devoted to a citation of case histories.

THE TREATMENT OF FRACTURES WITH NOTES UPON A FEW COMMON DISLOCATIONS. By Charles Locke Scudder, M.D., Consulting Surgeon to the Massachusetts General Hospital. Ninth edition. Cloth. Price, \$8.50. Pp. 749, with 1,252 illustrations. Philadelphia: W. B. Saunders Company, 1922.

This work comes to us too well known through many previous editions to require any detailed criticism here. The intelligent and critical analysis of the underlying anatomic, pathologic and mechanical principles shown by the author, combined with his masterly skill in presenting in minute detail the entire subject of fractures, undoubtedly makes this work one of our greatest treatises on the subject. The book is voluminous. It is profusely, almost extravagantly illustrated by line and wash drawings, photographs and roentgenograms. Excellent drawings and roentgenograms are used



to demonstrate the mechanism of displacement, a picture that the operator must be able to visualize if his treatment is to be intelligent. It is worth while mentioning that the text is not padded in description and in illustration with a host of methods and of apparatus that are obsolete. That the material presented is the development of a tremendous personal experience is seen in the chapter on the femur. The author's advocacy of skeletal traction, of Carrel-Dakin treatment in compound fractures, and of conservatism in the matter of open reduction in the majority of fractures, impresses the reader of experience as based on sound principles. Books that actually teach surgical treatment are rare. This is such a book.

LESSONS IN PATHOLOGICAL HISTOLOGY. By Gustave Roussy, Professeur Agrégé, Chef des Travaux Pratiques d'Anatomie Pathologique à la Faculté de Paris, and Ivan Bertrand, Chef de Laboratoire Délégué à la Clinique des Maladies Nerveuses de la Faculté de Paris. Translated from the second French edition by Joseph McFarland, M.D., Sc.D., Professor of Pathology and Bacteriology in the Medical Department of the University of Pennsylvania. Leather. Price, \$3.25. Pp. 278, with 124 illustrations. Philadelphia: Lea & Febiger, 1922.

In this book, the right-hand pages present excellent black and white microscopic drawings, while the left-hand pages explain what is seen. The student is told, first, what the organ presents in the way of characteristic features on the naked eye inspection of the section, and then what may be seen with the microscope. The book is a capital guide to the microscopic study of morbid changes in tissues, and may be recommended without hesitation for that purpose.

## Medicolegal

### Insufficient Evidence of Malpractice or Maltreatment

(*Kirby's Administrator v. Berea College et al. (Ky.)*, 244 S. W. R. 775)

The Court of Appeals of Kentucky, in affirming a judgment in favor of the defendants, says that the plaintiff sought to recover damages for the death of his daughter on account of alleged negligent, unskilful and wrongful treatment of her while she was an inmate of the hospital operated in connection with the college, she being afflicted with measles, which developed into pneumonia, followed by her death. Besides the college, the defendants were the chief surgeon in charge of the hospital, and his assistant; the superintendent of the hospital, and the superintendent of the nurses in it.

The patient contracted the measles; was put into the hospital, January 23, and died from pneumonia, February 4. The plaintiff introduced three physicians, not connected with the college or its hospital, who visited the patient, either, January 30 or 31; and they diagnosed the case as one of patchy pneumonia, a condition which they thought had been developing for, perhaps, forty-eight hours, although they were not absolutely sure of that fact. They were furnished, and examined, the chart made by the nurse or nurses in charge of the patient, on which was recorded not only her temperature, respiration, etc., but also the treatment given her; and they testified in substance that they saw nothing indicating improper treatment. Of course, they could not tell when the physician in charge of the patient discovered or detected the development of pneumonia. That physician, a woman, did not testify; nor was any statement of hers proved. No admissions of any dereliction of duty were proved against either of the defendant physicians further than that the chief surgeon stated that he had not discovered the pneumonia before the examination of the patient by the physician witnesses because the woman physician had charge of her, and he was busily engaged with the numerous other patients then confined in the hospital, there being an epidemic of influenza and measles prevailing at the time. It was furthermore testified that on some occasions, but how long prior to the development of the pneumonia was not shown, the patient was permitted to walk from her bed to the toilet, a distance of 25 feet; but it was proved that the hospital was warm and comfortable at the time, as well as kept in the

best condition. Some of the physician witnesses testified that it might not be the best and most approved method to allow such action on the part of the patient, but they did not pretend to say that the pneumonia could be attributed with any degree of certainty to it; nor does the court understand that their testimony condemned it in an ordinary case of measles. There was an attempt to make much of the testimony of a witness that a nurse struck the patient on the shoulder while in the toilet, and at one time declined to hand her a drink of water. But the same witness testified that the patient was noisy and somewhat unruly, and that the striking was only a gentle stroke on the shoulder, with a request that she must not make so much noise; also, that the incident did not cause the patient to be excited, nor did it in any wise unnerve her so far as the witness could observe. Of course, if it had been shown that the nurse was guilty of acts of such cruel and brutal nature as to be reasonably calculated to produce nervousness, excitement or other conditions to which the development of pneumonia could be reasonably attributed, a different question would be presented. But the court is convinced, from all the evidence in the case, that the plaintiff failed to sustain his alleged cause of action.

Physicians and those having in charge the treatment of patients are not required by law to insure their recovery; their measure of duty is to possess such knowledge and skill as is possessed by others similarly engaged in the community, and to exercise ordinary care in the application of their knowledge and skill. That duty does not require the performance of every act which the most cautious and skilful would employ; and before liability will attach it must appear that the damages sued for were the proximate result of some alleged act of omission or commission on the part of the defendant in malpractice cases. Mere speculation or remote probability is not sufficient to fix liability.

## Society Proceedings

### COMING MEETINGS

- Alabama, Medical Association of the State of, Mobile, April 17-20. Dr. H. G. Perry, State Board of Health, Montgomery, Secretary.
- American Association of Anatomists, Chicago, March 28-30. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.
- American Association of Pathologists and Bacteriologists, Boston, March 29-30. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.
- American Association of Physicians, Atlantic City, May 1-3. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.
- American Congress on Internal Medicine, Philadelphia, April 2-7. Dr. Frank Smithies, 1002 North Dearborn Street, Chicago, Secretary.
- American Gastro Enterological Association, Atlantic City, April 30-May 1. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.
- American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
- American Laryngological, Rhinological and Otological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.
- American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.
- Georgia, Medical Association of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.
- Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.
- Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.
- Kansas Medical Society, Kansas City, May 2-4. Dr. J. F. Hassig, 800 Minnesota Avenue, Kansas City, Secretary.
- Louisiana State Medical Society, New Orleans, April 24-26. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.
- Maryland, Medical and Chirurgical Faculty of, Baltimore, April 24-26. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore.
- Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dye, Clarksdale, Secretary.
- Missouri State Medical Association, Joplin, May 9-11. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
- Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
- North Carolina, Medical Society of the State of, Asheville, April 17-19. Dr. L. B. McBrayer, Sanatorium, Secretary.
- Ohio State Medical Association, Dayton, May 1-3. Mr. D. K. Martin, 131 East State Street, Columbus, Secretary.
- South Carolina Medical Association, Charleston, April 17-19. Dr. Edgar A. Hines, Seneca, Secretary.
- Tennessee State Medical Association, Nashville, April 10-12. Dr. Larkin Smith, 154 Eighth Avenue, N., Nashville.
- Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.
- Western Electro-Therapeutic Association, Kansas City, Mo., April 19-20. Dr. Charles Wood Fassett, 115 E. 31st Street, Kansas City, Secretary.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Diseases of Children, Chicago

January, 1923, 25, No. 1

- \*Physiology of Exercise in Childhood. I. Study of Normal Children of School Age. M. Seham and G. Egerer-Seham, Minneapolis.—p. 1.
- \*Celiac Disease. R. Taylor, Minneapolis.—p. 46.
- \*Treatment of Flat Warts by Internal Administration of Mercury. H. Fox, New York.—p. 55.
- Comparison of Diphtheria Immunity in Mother and in the New-Born. H. O. Ruh and J. E. McClelland, Cleveland.—p. 59.
- Chemical Studies of Blood of Mother and Fetus. M. G. Howe and M. H. Givens, Pittsburgh.—p. 63.
- \*Colloidal Gold Reaction in Acute Poliomyelitis. J. C. Regan, A. Litvak and C. Regan, New York.—p. 76.

**Physiology of Exercise in Childhood.**—Briefly, the Sehams found that all forms of exercise produce an increase in the pulse rate and the blood pressure, the increase depending mainly on the type of exercise.

**Celiac Disease.**—Taylor's report is based on a study of seven cases, the cardinal features of which agree with those described as being characteristic of celiac disease. Abstracts of their records and of the data gleaned from each are given. In all the seven patients the disease was preceded by a long period of bad feeding, or by a parenteral infection, or by both. Gastric achlorhydria was present in the five cases in which the stomach contents were examined. The liver was found smaller than normal in every case. As further evidence of the presence of liver pathology there was in one case a complicating Banti's disease; in another case leucin and tyrosin were present in the urine, and in a third case the duodenal juice contained a pathologic pigment. It appears that there are four points to be considered in successful dietary treatment: (1) In recognition of the achlorhydria, to use soured milk and fruit acids; (2) to supply readily absorbable carbohydrate primarily for its good effect on the liver; (3) to wait patiently for months on a high protein intake before adding starches and fats, and (4) to prevent fecal accumulations which can undergo bacterial decomposition.

**Treatment of Flat Warts by Internal Administration of Mercury.**—Fox's experience in trying the method suggested by White is confined to eleven cases, one of which is not suitable for analysis as the patient was treated by another physician with the roentgen ray after she had taken mercury for one week. The result in this case was successful at the end of a few weeks. Of the ten cases in which the mercury treatment was given a fair trial, the result was entirely successful in five. In these cases the disappearance of the eruption was absolutely complete in from three to eight weeks. There had, furthermore, been no return of the disease in these patients at the end of one, three, four and seven months and three years, respectively. The treatment consisted solely of the internal administration of mercurous iodid tablets in doses of  $\frac{1}{4}$  grain, three times a day. Smaller doses were given the younger patients. No local remedies whatever were employed. In the five unsuccessful cases there was no improvement after two or four weeks of treatment.

**Colloidal Gold Reaction in Acute Poliomyelitis.**—In a series of forty-two cases of acute poliomyelitis, including 132 spinal fluids, a study of the colloidal gold reaction was carried out by Regan and his associates. There was always a reaction with colloidal gold solution in the case of every poliomyelitic fluid taken during the acute stage of the disease. This reduction was constantly in the same zone—the zone of low dilutions, the so-called syphilitic zone. In 88 per cent. of the spinal fluids examined, the reaction occurred in the first six dilutions between 1:10 and 1:320. In fourteen spinal fluids the reaction extended to the seventh dilution (1:640). These patients more or less characteristically presented marked polyneuritic or meningitic symptoms, or else pronounced paralysis. In no instance was a normal reaction encountered before the end of the third week of illness. In twenty-three patients the spinal fluid was examined as late as the eighth

week, and fifteen, or 65 per cent., had become normal by that time.

#### American Journal of Psychiatry, Baltimore

January, 1923, 2, No. 3

- Psychoneuroses. Problems and Lines of Investigation. C. M. Campbell, Cambridge, Mass.—p. 367.
- \*Blood Chemistry in Mental Diseases. K. M. Bowman, White Plains, N. Y.—p. 379.
- Blood Fragility Studies in Certain Psychopathic States. T. Raphael, Ann Arbor, Mich., and F. C. Potter, Mercer, Pa.—p. 409.
- \*Aporrhema Reactions in Psychoses. J. C. Whitehorn, Waverley, Mass.—p. 421.
- \*Hematologic Pictures in Endocrine Syndromes Found Associated with Epilepsy. H. A. Patterson, Buffalo.—p. 427.
- Long Section Method, Contra Cross Section Method in Study of Mental Disease. H. Lundholm, J. S. Plant and J. C. Whitehorn, Waverley, Mass.—p. 439.
- Follow-Up Work in Mental and Surgical Cases. E. D. Bond, West Philadelphia, Pa.—p. 445.
- Psychology in Medicine. F. L. Wells, Boston.—p. 451.
- Observations of Juvenile Court Psychiatrist. O. G. Wiedman, Hartford, Conn.—p. 459.
- Constitutional Psychopathic Inferior. Problem in Diagnosis. A. E. Johnson, Philadelphia.—p. 467.
- \*Catatonic Dementia Praecox; Physiotherapeutics, and Results Obtained in Series of Twenty Cases. D. C. Main, Washington, D. C.—p. 473.

**Blood Chemistry in Mental Diseases.**—Two hundred and twenty-nine cases of mental disease were examined by Bowman as to the blood constituents. The average findings for blood nonprotein nitrogen, dextrose, uric acid and chlorids were found to be normal for all types of mental disease, except psychoses with cardiorenal disease and general paralysis, both of which conditions showed increased findings for nonprotein nitrogen and dextrose.

**Aporrhema Reactions in Psychoses.**—The results presented by Whitehorn merely indicate that there is a tendency among some types of psychotic persons to give less than the usual normal reaction to histamin. The reaction appears to be sufficiently marked to encourage the hope that analytic procedures for the detection and estimation of certain aporrhemas may yield information of value in the understanding of mental disorders.

**Hematologic Pictures in Endocrine Syndromes Associated with Epilepsy.**—One hundred and twenty-eight cases presenting some endocrine manifestation in an epileptic have been examined by Patterson. Of these, the overwhelming majority falls into the pituitary group. The leukocytic formula in all these disorders is either distorted or masked by the epileptic hyperleukocytosis.

**Catatonic Dementia Praecox.**—Main endorses the value of occupational therapy in this condition. He describes what is being done in this field at St. Elizabeth's Hospital, Washington, D. C.

#### Archives of Dermatology and Syphilology, Chicago

February, 1923, 7, No. 2

- \*Hydroa Vacciniforme Seu Aestivale. F. E. Senear and H. W. Fink, Chicago.—p. 145.
- Pityriasis Rosea. W. J. Highman and R. H. Rulison, New York.—p. 163.
- \*Mycloid Leukemia of Skin. L. W. Ketron and L. N. Gay, Baltimore.—p. 176.
- \*Pityriasis Rubra Pilaris—Familial Type. E. P. Zeisler, Chicago.—p. 195.
- Experimental Production of Paraffin Oil Tumors in Monkeys. F. D. Weidman and M. S. Jefferies, Philadelphia.—p. 209.
- Tumor Formation After Injection of Mercuric Salicylate in Vegetable Oil: Case Report. I. C. Sutton, Anaheim, Calif.—p. 223.
- Sporotrichosis. E. D. Crutchfield, Galveston, Texas.—p. 226.

**Hydroa Vacciniforme Seu Aestivale.**—To the seventy-eight cases recorded in the literature of what they feel can be considered as being cases of hydroa vacciniforme, Senear and Fink add two cases. The sun's rays alone were listed as the exciting factor in 80 per cent. of the cases. Hematoporphyrinuria was present in 17.5 per cent. Heredity apparently plays some part, as more than one member of the family was affected in five instances. Treatment has been of little avail, although ointments containing quinin or esculin have been reported as of value in some cases.

**Myeloid Leukemia of Skin.**—Ketron and Gay report the case of a woman, aged 63, who noticed an eruption of bluish-red nodules along the costal margins early in December, 1916. A few days later she began to have severe pain in



the lower portion of her back and upper abdomen. The nodules rapidly increased in size and distribution, appearing on the head and neck. They were associated with intense itching. Physical examination at this time revealed abdominal tenderness and enlargement of the liver and spleen. The blood examination showed only a secondary anemia. Within a period of two months the nodules had spread over the entire body. They had a mahogany color, and some of them measured as much as 3 cm. in diameter. The spleen and liver, however, had decreased somewhat in size, and there was no abdominal tenderness. The nodules then gradually disappeared, leaving only discolored macular areas. In February, 1917, there appeared over the left leg a hemorrhagic eruption. This was of two weeks' duration. Repeated study of the blood showed nothing of special importance. In the beginning of March, 1917, the skin nodules again suddenly made their appearance over the body and in the throat, associated with general weakness, a rise in temperature and enlargement of the spleen and liver. The blood count then for the first time showed the picture of myeloid leukemia. The patient died April 11, about four months after the first eruption of skin nodules, and one month after the blood examination had shown the presence of a myeloid leukemia. Necropsy confirmed the clinical diagnosis.

**Pityriasis Rubra Pilaris; Familial Type.**—Zeisler reports four cases which occurred in one family, a father and three children. This is said to be the first instance of the familial occurrence of the disease noted in this country, although there are two reports of a similar nature from Europe. Evidence is presented that heredity plays a rôle in the etiology of this rare condition.

### Archives of Neurology and Psychiatry, Chicago

February, 1923, 9, No. 2

- Genesis of Cerebellar Functions. F. Tilney, New York.—p. 137.  
 \*Acute and Chronic Chorea. G. Wilson and N. W. Winkelman, Philadelphia.—p. 170.  
 \*Two Cases of Brain Tumor with Ventriculography. P. Bassoe and C. B. Davis, Chicago.—p. 178.  
 Difference Between Muscular and Neuromuscular Interpretation of Walking. W. M. Kraus, New York.—p. 184.  
 Nature of Certain Functional Nervous Disturbances and Their Treatment Along Metabolic Lines. R. Pemberton, Philadelphia.—p. 208.

**Pathologic Anatomy of Chorea.**—A clinicopathologic study was made by Wilson and Winkelman of a case of Sydenham's and another of Huntington's chorea. In the typical case of Sydenham's chorea, mitral endocarditis was found. The pathology in the brain—acute cell changes with the marked congestion—is attributed to the acute infectious disease from which the patient died. In the case of chronic chorea the process involved mainly the striatum (caudate and putamen) and the cortex; the changes being typical of a chronic degenerative process, selective in action. No relationship could be found between the acute and chronic varieties of chorea. The findings of epidemic encephalitis were not present in the case of Sydenham's chorea. When such are present, as in Marie's case, the authors believe them to be the result of the epidemic forms of encephalitis and not ordinary types of acute chorea.

**Ventriculography in Brain Tumor.**—The two cases in which Bassoe and Davis made use of this method point out that in the hands of novices ventriculography is likely to be misleading and dangerous. In the first case, sufficient air had not been introduced into the posterior horn to fill the anterior horns completely. In the second case, in which the ventricles were unexpectedly small, evidently too much air was introduced and death was caused by the acute compression. Aside from determining the absence of hydrocephalus, the authors did not learn to locate the tumor any more accurately than they had by the neurologic symptoms. However, they admit that in selected cases and in skilful hands the method occasionally will lead to localization and successful removal of a tumor which cannot be located by other known methods.

### Delaware State Medical Journal, Wilmington

October-November-December, 1922, 13, No. 4

- Unusual Eye Conditions. E. R. Mayerberg, Wilmington.—p. 5.  
 Infant Feeding. R. R. Spahr, Middletown.—p. 11.  
 Essential Differences Between Three Schools of Medicine—Allopathic, Eclectic, Homoeopathic. J. M. Scudder.—p. 18.

### Illinois Medical Journal, Oak Park

February, 1923, 43, No. 2

- Ectopic Gestation: Report of Cases. T. W. Nuzum, Janesville, Wis.—p. 107.  
 Cancer. W. M. Harsha, Chicago.—p. 109.  
 Choriocarcinoma Following Extra-uterine Pregnancy. J. B. Moore, Benton.—p. 114.  
 Edematous Cardiopath. J. M. Patton, Chicago.—p. 117.  
 Surgery of Upper Abdomen Under Local Anesthesia. R. E. Farr, Minneapolis.—p. 120.  
 \*Treatment of Chronic Fatigue Intoxication. E. H. Ochsner, Chicago.—p. 125.  
 Pernicious Anemia. R. D. Robinson, Chicago.—p. 129.  
 Anatomy, Physiology, and Diseases of Circulatory System, and Management and Treatment of Such Diseases. H. C. Houser, Westfield.—p. 133.  
 Diabetes Mellitus. R. F. Herndon, Springfield.—p. 137.  
 Industrial Eye Injuries. F. Allport, Chicago.—p. 145.  
 Thoughts on Medical Organization. A. F. Kaeser, Highland.—p. 149.  
 Etiology and Management of Neurasthenic Conditions. F. R. Fry, St. Louis.—p. 151.  
 Thoughts on Preventive Surgery with Special Reference to Focal Infection. G. H. Parmenter, Beecher City.—p. 156.  
 Treatment of Insane. C. H. Anderson, Anna.—p. 159.

**Treatment of Chronic Fatigue Intoxication.**—Ochsner reiterates his belief that chronic fatigue intoxication is a distinct disease entity with definite symptoms. In the treatment of patients suffering from this affection, four objects must constantly be kept in mind: (1) maintain or improve the nutrition of the patient as the individual case may demand; (2) prevent the further accumulation of fatigue material; (3) ameliorate the symptoms as much as possible, and (4) remove the already accumulated fatigue material. In nearly all of the severe cases the patients suffer much from hyperchlorhydria, eructation and belching of gas, and constipation. Proper diet, rest, and looking after the symptoms as they arise, sometimes make these patients more comfortable, but these alone will never cure them. The active treatment should have for its object the elimination of all accumulated fatigue material in the shortest possible time with the least risk and discomfort to the patient. Good air, both day and night, is absolutely essential in order that the products of fatigue may be properly oxidized and converted into a form which may be easily eliminated. Suitable baths are also valuable adjuncts. In the extreme cases the use of castor oil is very important. Some of these patients can be saved only if they are given one ounce of castor oil every evening on retiring or the first thing in the morning, in order that the end results of the faulty digestion may be cleared out of the gastro-intestinal tract daily and the fatigue material which may have found its way into the gastro-intestinal tract after massage may also be removed. The measures already mentioned must be supplemented by carefully supervised, intelligent massage. When the patient is completely relieved of all of the symptoms and of all of his fatigue spots, the time for physical exercise and physical reeducation of the atrophied muscles has arrived. The exercises must be increased gradually, always stopping short of exhaustion. Later more strenuous exercise such as golf, tennis, walking, rowing are indicated and moderate fatigue encouraged, but exhaustion guarded against in order that a relapse may be averted.

### Indiana State Medical Association Journal, Ft. Wayne

January, 1923, 16, No. 1

- \*Sensitivity to Epidermal and Pollen Proteins: Diagnosis and Treatment. J. A. Wynn, Indianapolis.—p. 1.  
 Safe Extraperitoneal Method for Drainage of Intra-abdominal Abscesses. J. R. Eastman, Indianapolis.—p. 6.  
 Treatment of Pulmonary Tuberculosis. A. Henry, Indianapolis.—p. 9.  
 Arrhythmia. I. E. Brenner, Winchester.—p. 14.  
 Ideals of Medical Profession. C. H. Good, Huntington.—p. 15.

**Sensitivity to Epidermal and Pollen Proteins.**—It is pointed out by Wynn that hay-fever, certain forms of asthma, and various skin conditions are but different manifestations of the state of sensitivity to some protein or proteins. A general method is outlined for differentiating these types on the basis of clinical history and the evidence of a specific skin reaction. Special attention is directed in pollen and epidermal protein cases, to the fact that they give a seasonal history in one case and a history of proximity to a given animal or fowl in the other; that both types are best treated prophylactically by removal of cause, but that desensitization



is possible and practical in case of the pollens. A method is outlined and the precautions are emphasized. Though at present desensitization must be left to those especially prepared for the work, with reasonable attention to the subject, the general practitioner should not only recognize cases of sensitivity, but classify them with considerable accuracy and accordingly give intelligent advice regarding management. The condition is common enough and important enough to warrant the attention of all engaged in the general practice of medicine.

### Journal of Cancer Research, Baltimore

July, 1922, 7, No. 3

\*Transplantable Metastasizing Chondrorhabdomyosarcoma of Rat. F. D. Bullock and M. R. Curtis, New York.—p. 195.

\*Primary Carcinoma of Liver. F. Helvestine, Jr., Charlottesville, Va.—p. 209.

**Transplantable Metastasizing Chondrorhabdomyosarcoma of Rat.**—The chondrorhabdomyosarcoma of the sternum of the rat described by Bullock and Curtis was a transplantable metastasizing tumor in which cross striated muscle fibers persisted through fifteen generations, although the cartilaginous elements early lost their power of differentiation.

**Primary Carcinoma of Liver.**—A primary carcinoma of the liver in a woman, aged 63, is described by Helvestine. The patient began to lose strength and weight about two months prior to admission. About three weeks before admission her abdomen became distended and a little later she became jaundiced. On physical examination the margin of the liver could be palpated below the costal margin. A diagnosis of carcinoma of the liver was made. Three days after admission the patient died. On the basis of the arrangement of the cells, the presence of capillary stroma, and the absence of proliferation of the bile duct epithelium, this carcinoma is classed as a hepatoma. Cirrhosis was not present in the liver tissue, and nowhere was there hyperplasia of the liver cells. Although there were numerous instances in which the cancer cells grow between parallel capillaries, and were in direct continuity with the liver cell trabeculae, there were no transitions between liver cells and cancer cells. The growth was unicentric in origin, the primary focus being in the right lobe, from whence it grew by direct extension, without using the portal system as a pathway. A case of primary carcinoma of the gallbladder, with invasion and metastases in the liver is also described. Appearances very similar to those observed in the case of primary carcinoma were seen.

### Journal of Immunology, Baltimore

January, 1923, 8, No. 1

Local and General Immunity. F. P. Gay, San Francisco.—p. 1.

Hereditary Blood Qualities: Statistical Considerations. R. Ottenberg, New York.—p. 11.

Relation of Antigen to Antibody (Precipitin) in Vitro. E. L. Opie, St. Louis.—p. 19.

\*Protective Action of Normal Serum in Experimental Infection with *Bacillus diphtheriae*. T. J. Mackie, Cape Town, South Africa.—p. 35.

Hepatic Reaction in Anaphylaxis. I. Vasomotor Reactions in Isolated Canine Liver. W. H. Manwaring and S. Brill, Palo Alta, Calif.—p. 47.

Relation of Antigen to Antibody (Precipitin) in Circulating Blood. E. L. Opie, St. Louis.—p. 55.

**Protective Action of Normal Serum Against Diphtheria.**—In guinea-pigs experimentally infected with *Bacillus diphtheriae*, normal serum (horse, ox, sheep, cat, rabbit, human), injected subcutaneously at the same time as the inoculation, Mackie says, exerts a definite protective action. Two cubic centimeters of normal horse serum may protect in this way against 12 M. L. D. (minimal lethal doses) of a *B. diphtheriae* culture. No protection occurs if the serum injection is delayed for two hours after the inoculation. The activity of the serum persists at 57 C., but is lost at 70 C. and higher temperatures. The serum of one guinea-pig injected subcutaneously into another may protect the latter when experimentally infected with *B. diphtheriae* or, at least, exerts a definite delaying effect on the course of the infection. Normal horse serum is also similarly protective in guinea-pigs injected with diphtheria toxin; 10 c.c. of serum may protect against 10 M. L. D. The serum of one guinea-pig is not protective to another injected with diphtheria toxin. In the case

of animals surviving after protection by normal serum a marked local lesion develops at the site of inoculation.

### Journal of Infectious Diseases, Chicago

January, 1923, 32, No. 1

\*Cultivation and Isolation of Gonococci. R. A. Kinsella, G. O. Broun and O. Garcia, St. Louis.—p. 1.

\*Improved Methods for Isolation and Later Cultivation of *Bacillus Pertussis*. O. R. Povitzky, New York.—p. 8.

Existence of More Than One Immunologic Type of *Bacillus Pertussis*. C. Krumwiede, L. Mishulow and C. Oldenbusch, New York.—p. 22.

\*Experimental Measles in Rabbits and Monkeys. M. Nevin and F. R. Bittman, New York.—p. 33.

Serologic Relationships in *Streptococcus Viridans* Group. Influenza Studies XI. J. F. Norton, Chicago.—p. 37.

\*Production of Spasms of Diaphragm in Animals with *Streptococcus* from Epidemic Hiccup. E. C. Rosenow, Rochester, Minn.—p. 41.

\*Production of Spasms of Diaphragm in Animals by Living Cultures, Filtrates, and Dead *Streptococcus* from Epidemic Hiccup. E. C. Rosenow, Rochester, Minn.—p. 72.

Atypical Typhoid Fever with Slowly Agglutinable Typhoid Bacillus in a Periosteal Lesion. M. A. Blankenhorn, E. E. Ecker and M. K. King, Cleveland.—p. 95.

Influence of Carbon Dioxid on Growth of Bacteria. G. E. Rockwell, Cincinnati.—p. 98.

**Cultivation of Gonococcus.**—For isolation of the gonococcus, Kinsell, Broun and Garcia found the use of a 1.6 per cent. agar of  $p_H$  7.6 to which 30 per cent. beef serum was added while the agar was still hot (from 90 to 100 C.), quite satisfactory. It is important that the plates be not too moist when used. A study of various culture mediums has shown that Thallmann's agar and Vedder's starch are excellent for the cultivation of gonococcus. On semisolid 0.5 per cent. agar, 5 per cent. gelatin and 1 per cent. nutrose, the gonococcus has grown and survived for from three to four weeks. It appears that physical factors are possibly of equal importance with nutritional factors in the cultivation of the gonococcus.

**Cultivation of *Bacillus Pertussis*.**—It was found by Povitzky that a definitely acid reaction in a suitable medium is favorable for the isolation and growth of *Bacillus pertussis*. Such a reaction is especially valuable because it inhibits the growth of *Bacillus influenzae* and other organisms found in the sputum of patients with pertussis. The most favorable point of acidity for isolation was  $p_H$  5. The limits of acidity favorable to the growth of *B. pertussis* are  $p_H$  from 6.1 to 4.4. *Bacillus pertussis* immediately after isolation grows most luxuriantly on potato-glycerol-veal agar medium unadjusted ( $p_H$  from 5.8 to 6.1) with blood in the proportion of 1:3 or 1:4 added at a temperature of 45 C.; but this medium is too favorable for the growth of various other organisms present in the sputum and is therefore not suitable for the isolation of *B. pertussis*. On the other hand, the Bordet-Gengou medium, which contains neither meat nor peptone, is less favorable for the growth of the associated organisms of the mouth and nasopharynx. It was found, therefore, that this medium after adjustment to a suitable acid reaction ( $p_H$  5) was the best for the isolation of *B. pertussis*.

**Experimental Measles.**—In the first series of animals used by Nevin and Bittman the virus obtained from patients with measles on the second day of the disease was passed through four rabbits and then produced symptoms typical of measles in a monkey. In the second series of animals the virus obtained as stated was passed through three rabbits and then through three monkeys in which symptoms typical of measles were produced. The monkey to monkey passage eliminated any question of a rash due to foreign protein. A control monkey injected with normal human blood showed no reaction. The results of these two series of passages confirm previous findings that the virus of measles survives rabbit passage and produces symptoms typical of measles in the monkey (*Macacus rhesus*).

***Streptococcus* in Epidemic Hiccup.**—Eight cases of epidemic hiccup were studied by Rosenow. From the infection atrium of each a streptococcus, alike in morphology and cultural character, was isolated, and with each strain, spasms of the diaphragm, and other muscles were reproduced in animals. The organism was isolated from these animals and characteristic symptoms were induced on reinoculation. The streptococcus was demonstrated in the lesions and proved absent elsewhere on microscopic examination of sec-



tions. These results were not obtainable with streptococci from similar sources in other diseases. The possibility of an accompanying filtrable virus was excluded by the filtration experiments and by the successful reproduction of the disease after many rapidly made subcultures of the different strains. The methods with which positive results were obtained included procedures in which the conditions in the patient were closely simulated. The type of the disease and lesions induced were similar to those noted in the spontaneous disease in man. The conclusion that epidemic hiccup is due to a streptococcus having peculiar neurotropic properties seems warranted. The question of the origin and absolute specificity of this streptococcus remains to be determined.

**Streptococcus Filtrates Cause Hiccup.**—The streptococcus of epidemic hiccup has been found by Rosenow to produce a substance or complex of substances which on inoculation into animals produces spasms of the diaphragm sometimes associated with tremor and twitchings of the masseters and other muscles. It is demonstrable in filtrates, in the clear centrifugalized broth, and in the washed dead bacteria of young cultures at the time the living streptococcus produces like symptoms in animals, and disappears from these as the living bacterium loses this power from artificial cultivation. The symptoms and lesions produced were essentially alike, except as to duration and extent, following injections of active filtrates, suspensions of dead bacteria, and the living organism. Hence, the specific localizing power with the production to this highly characteristic syndrome would seem to be due to a chemical substance produced either by the streptococcus or during the reaction incited in the host.

### Journal of Urology, Baltimore

January, 1923, 9, No. 1

- \*Experimental Study of Various Chemicals Used in Pyelography. O. S. Lowsley and H. R. Muller, New York.—p. 1.
- \*Perirenal Insufflation of Oxygen. Wm. C. Quinby, Boston.—p. 13.
- Pyelonephritis. W. C. Stirling, Jr., Winston-Salem, North Carolina.—p. 29.
- \*Germicidal Character of Emanations from Colloids of Certain Silver Salts. E. G. Ballenger and O. F. Elder, Atlanta, Ga.—p. 37.
- Renal Torsion. W. F. Braasch, Rochester, Minn.—p. 53.
- Case of Reduplication of Left Ureter and Left Renal Pelvis. R. F. O'Neil, Boston.—p. 63.
- Three Cases of Hydronephrosis. R. F. O'Neil, Boston.—p. 69.
- Gonococcal Infections of Kidney. J. D. Barney, Boston.—p. 79.
- Intravenous Injection of Neo-Arsphenamin in Treatment of Pyelitis. C. H. Chetwood, New York.—p. 87.

**Study of Chemicals Used in Pyelography.**—Of all the fifteen chemicals investigated by Lowsley and Muller, sodium iodid, in 20 per cent. solution, proved to be the most graphic medium. It casts a deep shadow, is nontoxic, nonirritating and is easily prepared. The authors caution that pyelography should be done only in selected cases. Persons suffering from acute or subacute infections of the kidneys, those who are emaciated or in a weakened condition, should not be subjected to this examination. The solution should be introduced carefully. When the patient complains of a sense of pressure in the loin, a few drops should be released in order to avoid distention of the kidney pelvis, as experiments on animals have shown distention to cause definite damage to the renal tissue. The practice of placing the patient in a sitting posture and withdrawing the catheter as the sodium iodid is injected and then immediately taking a roentgenogram was found to bring out many lesions of the ureters which would otherwise not be demonstrated.

**Perirenal Insufflation of Oxygen.**—The value of the perirenal insufflation of oxygen as a diagnostic measure is fully appreciated by Quinby, but his experience has shown that in the usual case the presence of gas about the kidney does not give plates of any greater value. In the occasional case, however, when the patient is large and fat, or in those instances in which the ureter is blocked by stone, or when for any other reason it is found impossible to inject the kidney pelvis at all, a knowledge of the kidney outline, made possible by the injection of gas, is often of distinct value.

**Value of Colloidal Silver Chlorid as Germicide.**—Ballenger and Elder report further on their experimental work with colloidal silver chlorid as a germicide. The preliminary

work so far done shows its harmlessness when used on inflamed surfaces and that, in certain conditions, it may be given intravenously in effective doses.

### Kentucky Medical Journal, Bowling Green

January, 1923, 21, No. 1

- Dr. J. N. McCormack in His Relation to Medical Profession. D. M. Griffith, Owensboro.—p. 9.
- Dr. J. N. McCormack in His Relation to General Public. J. C. W. Beckham, Louisville.—p. 11.
- Dr. J. N. McCormack as a Man. J. A. Stucky, Lexington.—p. 13.
- Dr. J. N. McCormack in His Relation to American Medical Association. C. A. L. Reed, Cincinnati.—p. 14.

### Mental Hygiene, Albany, N. Y.

January, 1923, 7, No. 1

- Aspects of Animal Mechanism. C. S. Sherrington, London.—p. 1.
- Methods of Evaluating Our Immigrant Peoples. K. H. Claghorn, New York.—p. 20.
- Psychoanalysis and The School. H. C. Miller, London.—p. 32.
- Significance and Management of Hypochondriacal Trends in Children. E. L. Richards, Baltimore.—p. 43.
- Study of the Underwear Industry with Special Reference to Opportunities for Subnormal Girls. J. D. MacAlpine, New York.—p. 70.
- Affective Factors in Vocational Maladjustment. L. Pruette and D. Freyer, Brooklyn.—p. 102.
- Organization and Scope of State Bureau of Mental Health. W. C. Sandy, New York.—p. 118.
- Nurses' Training Schools in State Hospitals. C. F. Read and M. Kennedy, Chicago.—p. 127.
- Mental Health of 463 Children from Dementia Praecox Stock. M. M. Canavan and R. Clark.—p. 137.
- Organization of Occupational Therapy in State Hospital. H. M. Pollock, New York.—p. 149.

### Northwest Medicine, Seattle

January, 1923, 22, No. 1

- Modern Aspects of Etiology and Treatment of Bronchial Asthma. G. Piness, Los Angeles, Calif.—p. 1.
- \*Treatment of Pneumonia. H. Brooks, New York.—p. 10.
- Treatment of Advanced Tuberculosis. J. E. Nelson, Seattle.—p. 17.
- Adult Type Tuberculosis in Children. C. R. Castlen, Seattle.—p. 21.
- Vomiting in Infancy and Childhood. P. D. McCornack, Spokane.—p. 24.
- \*End-to-End Intestinal Anastomosis. Experimental Study. D. V. Trueblood, Seattle.—p. 27.

**Drugs in Treatment of Pneumonia.**—In Brooks' opinion, as a rule, few or no drugs are required in most cases of pneumonia; with one exception he feels that the need for medication must appear before any drug is advisedly prescribed. There is, however, one drug which he believes should by preference be given before it is needed. This is digitalis. To get the best effect from digitalis it must be given before the heart muscle is either in a state of inflammation or degenerated. In the pneumonias of infants and children, he employs the drug infrequently, but as age increases, he uses it with increasing frequency and dosage. As a rule, he starts with full dosage, 15 or 20 minims of the tincture every two or three hours, for the first twenty-four hours, and follows with a rapid reduction unless the case demands otherwise. In cases of known cardiac defect, Brooks often digitalizes by the rapid method, 30 or 40 minims three or four times daily until digitalis effects are produced. When the muscle irritability appears to be impaired, Brooks may use strychnin with the digitalis. Caffein is his drug of second choice in instances of circulatory failure in pneumonia. He advises against its employment in cases of active delirium and in those instances in which sleep appears to be very necessary. Camphor is also a very useful drug, preferably, of course, given intramuscularly or subcutaneously. Epinephrin is used especially in cases with marked hypotension, that appear to be going into shock or collapse. All these drugs are employed for symptomatic reasons and few or none, except, perhaps, the digitalis, in anything like a routine manner. When cough is particularly annoying or exhausting, it should be controlled, if possible, by codein, heroin or morphin in the order named. Brooks emphasizes the fact that the greatest danger is, over-treatment, rather than undertreatment, and that each case is an individual problem.

**New Method of Intestinal Anastomosis.**—Trueblood describes an aseptic method of anastomotic suture in which the openings are all closed by basting threads, which are withdrawn after the anastomosis has been completed.



# FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

## Archives of Radiology and Electrotherapy, London

January, 1923, 27, No. 8

Barium Plaster Walls for Roentgen-Ray Treatment Cubicles. A. E. Barclay.—p. 234.

\*Hitherto Undescribed Bone in Tarsus. P. D. Cameron.—p. 234.

\*Separate Center of Ossification for Tip of Internal Malleolus. H. A. T. Fairbank.—p. 238.

Fibrocystic Disease of Upper End of Humerus. C. P. G. Wakeley.—p. 241.

Simple Method of Treating Superficial Lesions of Perineum and Intrapelvic Conditions from Below. M. R. J. Hayes.—p. 249.

**Undescribed Bone in Tarsus.**—The bone described by Cameron formed a distinct projection on the inner side of the foot, in the angle between the scaphoid and internal cuneiform bones. In the same foot there was a quite definite tibiale externum in close contact with the head of the astragalus, between the scaphoid and the sustentaculum tali. Neither of the extra bones was present in the foot of the opposite side.

**Separate Center of Ossification for Tip of Internal Malleolus.**—Fairbank reports three cases in which there was a separate center of ossification for the tip of the internal malleolus. He suggests that it is possible that the separate ossific center has been regarded as a sesamoid bone; sometimes, perhaps, a fracture has been diagnosed.

## British Journal of Ophthalmology, London

January, 1923, 7, No. 1

British Master of Ophthalmology Series. 13. Edward Nettleship. J. B. Lawford.—p. 1.

\*Cases of Metastatic Carcinoma of Choroid and Iris. C. H. Usher.—p. 10.

February, 1923, 7, No. 2

Statistical Enquiry into 1,000 Cases of Eye Injuries. A. Garrow.—p. 65.

Method of Recording Disc Alterations and Study of Growth of Normal and Abnormal Disc Cups. R. Pickard.—p. 81.

**Metastatic Carcinoma of Choroid.**—In one of the cases reported by Usher the primary tumor was not discovered, as permission for a necropsy was refused, and the general symptoms had not been sufficiently localizing. In the second case the primary tumor was in the breast, the eye symptoms manifesting themselves about eight months after removal of the breast. In the third case the lung was the seat of the primary tumor.

## British Journal of Surgery, Bristol

January, 1923, 10, No. 39

Eponyms. VII. Percivall Pott: His Own Fracture. D'Arcy Power.—p. 313.

\*Abnormalities of Duodenum. J. H. Anderson.—p. 316.

\*Large Myeloid Sarcoma (Myeloma) of Radius in Which Tumor is White Throughout. M. J. Stewart.—p. 322.

Cystoscopic Appearances in Tuberculosis of Urinary Tract. W. G. Ball.—p. 326.

\*Acromous Embryoma, Consisting of Hydrocephalic Fetal Head Contained Within Ovarian Cyst, in a Child 2½ Years of Age: Ovariectomy. C. E. Shattock.—p. 334.

\*Studies in Gallbladder Pathology. W. Boyd.—p. 337.

Roentgenogram Prints: A Suggestion. A. P. Bertwistle.—p. 357.

Mayo and Crile Clinics: With Special Reference to Thyroid Surgery. W. H. Bowen.—p. 359.

\*Method of Ligaturing First Stage of Left Subclavian Artery from Behind. A. K. Henry.—p. 367.

Place of Operations for Spinal Fixation in Treatment of Pott's Disease. G. R. Girdlestone.—p. 372.

Phosphorus Necrosis of Mandible. H. P. Pickerill.—p. 380.

Vesalius: His Delineation of Framework of Human Body in "Fabrica" and "Epitome." W. G. Spencer.—p. 383.

Effect of Gastro-Enterostomy on Gastric Function, as Interpreted by Fractional Test Meal. E. F. Guy.—p. 403.

Congenital Cyst of Common Bile Duct: Report of Two Cases. J. Morley.—p. 413.

Acute Hemorrhagic Pancreatitis: Ascaris Lumbricoides in Pancreatic Duct. H. M. Rigby.—p. 419.

Partial Obstruction of Pancreatic Duct by Round Worms. Novis.—p. 421.

Intestinal Obstruction from Hydronephrosis in Pelvic Kidney. H. T. Mursell.—p. 421.

Pelvic Hematocele in Male, Unnoticed Until Infected from Intestine. W. G. Spencer.—p. 423.

Endothelioma of Left Kidney Extending Down Ureter and Projecting into Bladder: Removal: Death Four Months Later. W. G. Spencer.—p. 423.

Large Intraperitoneal (Parovarian) Cyst Disappearing After Drainage. W. G. Spencer.—p. 424.

Two Cases of Ruptured Sigmoid Colon. R. M. Handfield-Jones.—p. 425.

**Abnormalities of Duodenum.**—It is Anderson's belief that gross anatomic abnormalities of the duodenum are more frequent than is generally supposed, and such abnormalities may exist without producing any clinical evidence of their presence.

**Myeloid Sarcoma of Radius.**—A case of myeloid sarcoma of the lower end of the radius is reported by Stewart in which the tumor, measuring 2½ by 1½ inches, was white throughout. The patient was aged 6 years, and the swelling had first been noticed three years before. As the tumor had burst through its bony capsule over a large area and was extensively invading the soft tissues, treatment by amputation was decided on, and carried out. Histologically, the growth was a typical myeloid sarcoma (myeloma). The axillary glands on the affected side were enlarged, but had completely subsided by the time the patient was discharged from hospital.

**Acromous Embryoma.**—Shattock removed a diseased ovary from a child, aged 2½ years, who had suffered from indefinite abdominal symptoms for six weeks. The left ovary was enlarged by the growth of an embryoma, which was composed solely of the head of a hydrocephalic fetus and completely filled a cyst in the ovary. The soft, easily separable, hydrocephalic brain measured 5.5 by 3 cm. in chief diameters, and was lined with ependyma through which the subjacent vessels were visible. Below the middle of the distended brain there was an elongated piece of cancellous bone closed in with a layer of compact bone, which may be taken as the basis cranii. Below the bone, and extending behind it as far as the skin, and beneath the brain, there was a triangular mass of young connective tissue and fat, in which microscopic examination demonstrated also the presence of a few islets of cartilage, and a compact, ill defined mass of well developed, intersecting bundles of unstriped muscle fibers. There were also included groups of ganglions furnished with large, typical nerve cells. The skin over the triangular mass of connective tissue already referred to was thickly covered with somewhat stiff dark hair embedded in sebum.

**Gallbladder Absorbs Cholesterol.**—The study made by Boyd of the gallbladder with the binocular dissecting microscope revealed a new view of the anatomy of the organ, and throws suggestive light on the question of its function. That function, Boyd says, is undoubtedly one of absorption, and it is possible that one of the chief substances absorbed is the cholesterol of the bile. The formation of deposits of cholesterol ester in the mucosa of the gallbladder is an important feature in many cases of early cholecystitis. These deposits occur both in the surface epithelium, in the connective tissue stroma, and possibly in the lymphatics. In some cases, at least, the first step in the development of gallstones may consist in this formation of cholesterol deposits. A new microchemical test for cholesterol in the tissues is described.

**Ligaturing Left Subclavian Artery.**—An approach to the first stage of the subclavian artery is obtained by Henry by costo-transversectomy at the level of the second rib on the left side. Depression of the pleural dome leaves the artery naked from the aorta to the first rib, no structure (excepting the ansa subclavia) intervening between the operator and the vessel. The first stage of the vessel can be ligatured in any part of its course, and its branches, except the thyrocervical trunk, can be tied with relative ease.

## Bristol Medico-Chirurgical Journal

January, 1923, 40, No. 147

Debt of Medicine to the Fine Arts. J. A. Nixon.—p. 1.

Principles of Surgical Treatment of Infections of Peritoneum. F. Fraser.—p. 29.

Acquired Resistance to Tuberculosis: A Factor in Clinical Type and Prognosis. S. L. Cummins.—p. 41.

## China Medical Journal, Shanghai

January, 1923, 37, No. 1

\*Use of Plaster Pylon in Leg Amputations. G. Van Gorder.—p. 1.

\*Pneumonic Plague in Harbin (Manchurian Epidemic, 1921). J. W. H. Chun.—p. 7.



- Congenital Occlusions of Alimentary Tract. Case Reports. E. D. Smith.—p. 18.  
 Practical Method for Delousing Chinese Clothes and Bedding. S. D. Joffick.—p. 25.  
 China As Field for Study of Nutrition of Human Teeth. J. F. McClendon.—p. 34.  
 Necrosis of Jaw. P. L. McAli.—p. 39.  
 Chronic Erythema Nodosum: Report of Case. W. W. Cadbury.—p. 41.  
 Preparation of Surgical Solution of Chlorinated Soda. J. Cameron.—p. 44.

**Use of Plaster Pylon in Leg Amputations.**—Because of the high incidence of joint tuberculosis, gangrene, and severe infections among Chinese patients, many amputations are necessary. The absence of artificial limb factories in China, and the great expense associated with importing appliances from Europe and America, have made the surgical after-treatment of patients with amputated limbs a difficult problem. In order to improve the condition of leg "amputee" cases, Van Gorder says some form of prosthesis should be given to every such patient before he or she is discharged from the hospital. The form of prosthesis recommended by Van Gorder for routine use in the hospital is the so-called "plaster pylon." This form of apparatus is quickly and easily made; the necessary materials are readily available; it is inexpensive, and at the same time effective.

**Pneumonic Plague in Harbin.**—Chun reviews some features of the epidemic of plague which existed in Harbin in 1921. The death rate was 10 per thousand as contrasted with 90 per thousand in the 1910 epidemic. The scheme of management and the clinical analysis of the cases are detailed. With regard to treatment, nothing was of avail.

### Edinburgh Medical Journal

January, 1923, **30**, No. 1

- Progress of Medicine and Retarding Influence of Credulity. E. Bramwell.—p. 1.  
 \*Importance and Function of Teres Minor Muscle. D. M. Greig.—p. 16.

**Importance and Function of Teres Minor Muscle.**—Greig advances the ideas that the teres minor is not a muscle of lateral rotation; that lateral rotation is caused mainly by the infraspinatus; and that the function of the teres minor is to steady the head of the humerus in the glenoid during contraction of the deltoid.

### Journal of Laryngology and Otology, Edinburgh

February, 1923, **38**, No. 2

- Angioma of Larynx. I. Moore.—p. 57.  
 Pathologic Effects of Excessive Sounds on Cochlear Apparatus, Considered in Relation to Theories of Sound Perception. T. R. Rodger.—p. 66.  
 Temporosphenoïdal Abscess: Two Cases. F. Muecke.—p. 72.  
 Unusual Termination (Peritonitis) of Case of Temporosphenoïdal Abscess. F. G. Wrigley.—p. 76.  
 Two Cases of Fatal Osteomyelitis of Frontal Bone. H. Tilley.—p. 78.

### Journal of State Medicine, London

January, 1923, **31**, No. 1

- Prenatal Hygiene and Problems of Maternity and Child Welfare. W. M. Feldman.—p. 3.  
 Water Supplies with Reference to Those in Gallipoli Campaign. A. Gaskell.—p. 15.  
 Milk Problem. H. Scurfield.—p. 28.

February, 1923, **31**, No. 2

- Specific and Nonspecific Formation of Antibodies. T. Madsen.—p. 51.  
 Prevention of Tuberculosis by Injecting Tubercle Bacillus Antigen. W. M. Crofton.—p. 74.  
 Treatment of Pyorrhea by Violet Ray Concentration (Pashler Lamp). R. Hodgson.—p. 79.  
 \*Problem of Syphilitic Child. M. Rorke.—p. 82.

**Problem of Syphilitic Child.**—Rorke urges that, given a family history of syphilis, the mother should be treated during each pregnancy, and the child, when born, be instantly put on treatment. She is convinced that, short of absolute idiocy or marked mental defect, a quite considerable proportion of "difficult" and very naughty children are congenital syphilitics. These children are really feeble-minded to some extent—at any rate, they are mentally subnormal, though perhaps not certifiable. These are the people who, when grown, crowd workhouses and prisons—the men unfit to keep a job at a living wage, and so inclined to theft and other crimes—the girls frequently immoral, mothers of illegitimate children and members of the pathetic crowd of prostitutes.

### Archives des Maladies de l'Appareil Digestif, Paris

November, 1922, **12**, No. 6

- \*Roentgenography of Bile Passages. Duval et al.—p. 377.

**Roentgenography of Bile Passages.**—Duval, Gatellier and Bécère remark that the technic of roentgenography has improved so much that the results of their years of concerted study of the bile ducts, with and without gallstones, by internist, surgeon and roentgenologist may soon be surpassed. They state that Chappuis and Chauvel seem to have been the first who examined with the roentgen rays for gallstones. This was in 1896, but Carl Beck of New York was the first to show a gallstone in the gallbladder in 1899. The first unmistakable roentgenogram of a calculus in the common bile duct was secured by H. Bécère in 1919. Their long article is accompanied by eighty-six roentgenograms and explanatory diagrams. They insist that the roentgenologist should get with the patient a detailed clinical record of his pathologic past and the diagnosis that has been made. The radiologist should know whether the assumed gallstones are causing manifestations in the gallbladder or in the stomach and duodenum; whether the lithiasis is aseptic; whether the cholesterin content of the blood is normal, and whether the concretion is possibly or probably in the main bile duct. The gallstones may cast a shadow in one test and not in another, as the adjacent organs happen to contain more or less gaseous or solid contents. The findings are instructive only in about 60 per cent. of the cases at best.

### Bulletin de l'Académie de Médecine, Paris

Jan. 9, 1923, **89**, No. 2

- \*Medical Examination of Chauffeurs.—p. 47.  
 \*Incontinence Due to Spina Bifida. P. Delbet and A. Léri.—p. 49.  
 \*Diabetes and Syphilis. M. Labbé.—p. 53.  
 \*Cholesterinemia in Diabetes. Remond and Rouzaud.—p. 60.  
 \*Vitamins and Cereal Decoctions. M. Springer.—p. 61.

**Report on Medical Examination of Chauffeurs.**—The academy adopted the resolution of a committee composed of Quénu, Tuffier, Vaquez and Fiessinger, recommending the following measures with regard to issuing licenses to persons driving automobiles: (1) The chauffeur must be without exception 20 years old. (2) No license is to be granted to persons with mental disturbances, organic lesions of the heart, vessels or nervous system. Sight and hearing must be examined by a special medical commission. Special rules must be published concerning the degree of the lesions which would make driving inadvisable. (3) Mutilated persons may drive if really able to do so with their prosthesis. (4) The driver must be reexamined after ten years or, in special cases, in three years. (5) The license should be revoked for intoxication, especially if repeated. (6) Every driver who causes an accident must be reexamined immediately.

**Incontinence of Urine Due to Spina Bifida.**—Delbet and Léri report a case of enuresis with occult spina bifida. They removed a transverse fibrocartilaginous band which compressed the cauda equina, and the patient recovered. The sacral region should be examined by roentgen rays in every case of persistent incontinence of urine. If a spina bifida is found, an operative exploration reaching as deep as the dura mater should be performed.

**Diabetes and Syphilis.**—Labbé finds that syphilitic diabetes is extremely rare. The coincidence of diabetes and syphilis is no more frequent than syphilis with other diseases or perhaps even in the otherwise healthy. He reviews the usual reasons which would seem to speak for a syphilitic etiology, and finds only one case in the literature in which antisyphilitic treatment certainly cured the diabetes. In his own experience this treatment was without favorable results in seven cases of diabetes with a history of inherited or acquired syphilis.

**Prognostic Value of Cholesterinemia in Diabetes.**—Remond and Rouzaud found among 189 cases of diabetes, fourteen with cholesterinemia of 3.12 to 8.28 gm. per liter. Only one of these patients survived two years after this finding. The others died much earlier.

**Vitamins and Cereal Decoctions.**—Springer points out that the new researches on vitamins explain his excellent experimental and therapeutic results with decoctions of cereals in 1894. The experiments concerned their action on the growth



of dogs; and the clinical work was done on wetnurses, babies, and patients with typhoid and tuberculosis. In explaining the results, he had pointed correctly to the low nutritive value of the decoctions and ascribed the action to ferments which favored the production and utilization of intra-organic energy.

### Journal de Médecine de Bordeaux

Dec. 25, 1922, **94**, No. 24

- \*Toxemia in Pregnancy and Antianaphylaxis. L. Charron.—p. 787.  
Chaulmoogra in Treatment of Tuberculosis. F. Leuret.—p. 789.  
Fight Against Infant Mortality. Rousseau-Saint-Philippe.—p. 790.

**Toxemia in Pregnancy and Antianaphylaxis.**—Charron relates that a woman had had three pregnancies from three different husbands. Intense toxemia developed at the third pregnancy, and Charron injected the husband's serum on the assumption that, if the intoxication was due to an antigen from the male, the progressive introduction of this antigen would desensitize. Vomiting ceased at once, the pulse dropped from 108 to 80, and the arterial pressure and weight increased. The woman has been in good health since, and Charron expects that her pregnancy will follow its course without incident. He asks in conclusion whether the pregnancy toxins may not be merely toxic proteins from the male. The capricious character of the reaction phenomena could be explained by variations either in the quality of the graft or in the respective relations between the two subjects. In the case described, there had been severe toxemia at the woman's second pregnancy, with her second husband, but not so intense as at this third pregnancy with her third husband.

Jan. 10, 1923, **95**, No. 1

- \*Medicine in 1870 and Today. X. Arnozan.—p. 7.  
Extra Wide Compression Forceps. F. Papin.—p. 18.

**Medicine in 1870 and Today.**—Arnozan's farewell address at the Faculté de Bordeaux was summarized in the Paris Letter, Feb. 24, p. 566.

### Paris Médical

Jan. 6, 1923, **12**, No. 1

- Tuberculosis in 1923. P. Lereboullet and L. Petit.—p. 1.  
\*Nontuberculous Pleurisy in the Tuberculous. E. Sergent and Durand.—p. 14.  
\*Tuberculosis in Nurslings. P. Nobécourt and J. Paraf.—p. 18.  
\*Tuberculosis and Pregnancy. L. Bernard.—p. 22.  
\*Control of Treatment of Tuberculosis. A. Gausse.—p. 27.  
\*Phlebitis in Incipient Pulmonary Tuberculosis. Lafforgue.—p. 30.

**Nontuberculous Interlobar Pleurisy in the Tuberculous.**—Sergent and Durand point out that the fissure between the lobes is of distinct pathologic importance in tuberculosis of the lungs. Three sorts of syndromes can be observed: affections located in the fissure (interlobar pleurisy); affections practically restricted to the parenchyma adjoining the fissure, and lobar syndromes where the fissure serves as a barrier. They describe the purulent (nontuberculous) interlobar pleurisy which may occur in the tuberculous just as in otherwise healthy subjects. Since this origin is of special prognostic importance, they publish two observations. The roentgen-ray examination gives the typical picture of a localized pyopneumothorax. Contrary to such a condition in nontuberculous patients, it is usually limited by previous inflammations to a smaller part of the fissure, but differs from a large tuberculous cavity by the mobility of the level of its liquid content and its sudden appearance in a place where there were no signs before. The dark line starting from the cavity in the direction of the interlobar fissure is also a diagnostic point. The sudden appearance of large numbers of pneumococci or streptococci when the abscess perforates, and their disappearance when the purely purulent expectoration stops, are signs which speak for a nontuberculous origin. Recovery is usually prompt. Artificial pneumothorax may be necessary.

**Tuberculosis in Infants.**—Nobécourt and Paraf found among 1,296 infants 4.6 per cent. with tuberculosis. They believe that a systematic application of biologic tests would reveal many overlooked cases. Fever or respiratory phenomena need not be present, but all cases were more or less hypotrophic. Distinction of dyspeptic, anemic and rachitic forms of tuberculosis is not warranted; these are simply coincidences. The enlargement of supraclavicular lymphatic glands

to the size of a pea or hazelnut is important, but not constant. Of all the biologic reactions, a positive tuberculin skin reaction is most important and reliable, unless the infants are anergic or anteallergic (between infection and the time of appearance of antibodies). Clinical diagnosis would in most of the cases be impossible.

**Tuberculosis and Pregnancy.**—Bernard's views have already been summarized, p. 512.

**Rules for Experimentation and Control of New Measures in Treatment of Tuberculosis.**—Gausse gives a skeptical paper on the value of therapeutic observations in tuberculosis: A new sort of treatment is instituted. The physician begins it without waiting for the usual good influence of rest and treatment to become manifest. He reports the wonderful results as due to the remedy applied, and forgets to rectify his report when the patient dies a little later. Many of the best results are obtained in patients who were not tuberculous at all. He proposes the following rules for therapeutic experiment: (1) The new treatment must not start with the arrival of the patient in the hospital. He should first be carefully observed (including roentgen ray examination) for a long period under the ordinary general treatment. (2) There should be three groups of patients: one taking the treatment, one without any treatment, and a third, control group in which the patients are given to believe that they are receiving the same treatment that is being tried on the main group. (3) The treatment must be continued for a long period, and the eventual improvement must not be reported until at least several months later.

**Phlebitis in Incipient Pulmonary Tuberculosis.**—Lafforgue deals with the rare cases of phlebitis which occur in the early stages of tuberculosis—so early that some of them have been erroneously called pretuberculous. Many cases of supposed chlorotic phlebitis belong to this group, and careful examination may reveal the minor signs of tuberculosis, although not in every case. The affection is usually localized in a superficial vein of the leg, and rarely progresses into the femoral vein. Embolism is rare. The cardinal signs are: pain, which may be preceded by paresthesia; edema, which in some degree is always present and differentiates the condition from myalgia and neuritis; and the palpable and painful inflamed vein. The functional disturbance is small, the sensibility intact, and trophic and vasomotor disturbances are absent. Rest in bed for two or three weeks leads to complete local recovery. Some cases may be due to associated infection, but in some, the direct tuberculous etiology is proved or is very probable because of the doubtful outcome. Local trauma and congenital debility of veins are accessory factors. It seems also that some strains of bacilli are more liable to cause bacillemia. The diagnosis is difficult between chlorotic thrombosis (examination of blood), and a similar syphilitic affection. Although the immediate prognosis is good, these cases have to be considered with great caution as to the ultimate outcome of the tuberculosis. One third of the cases which could be kept under observation, developed miliary tuberculosis within two years (sometimes in a few months). In other cases the original tuberculous lesions ran a progressively more serious course.

### Presse Médicale, Paris

Jan. 6, 1923, **31**, No. 2

- \*Warning Hypertension in Toxemia of Pregnancy. V. Le Lorier.—p. 13.  
\*Rapid and Profuse Alopecia. R. Sabouraud.—p. 14.  
\*Hydrocephalus and Its Treatment. C. Lenormant.—p. 18.

**Warning Hypertension in Toxemia of Pregnancy.**—Le Lorier measured the blood pressure as a routine in pregnant women, and found it a most valuable aid in preventing toxemia. A pressure of 120 mm. mercury is the warning line. If a pressure, which was below this, starts to rise, other symptoms of toxemia may be expected soon if the patient remains without rest and dieting. At 150 mm. mercury, albumin appears in the urine and eclampsia is imminent. Two cases illustrate this course. Since toxemia can usually be prevented by rest and a milk-vegetable, salt-free diet, it is very important to look for this early sign. Midwives should be taught to measure the blood pressure.



**The Differential Diagnosis in Cases of Rapid and Profuse Alopecia.**—Sabouraud describes cases of profuse alopecia; among them the case of a girl, aged 13, who lost her hair thirteen days after being raped. The hair grew again. Alopecia following roentgen rays and ingestion of thallium occurs also in about fourteen days, while hair killed during an infection (typhoid, etc.) keeps in place for seventy-five days.

**Hydrocephalus and Its Treatment.**—Lenormant describes the history of surgical treatment of hydrocephalus, and deals especially with Dandy's investigations.

Jan. 10, 1923, 31, No. 3

\*Cancer of the Tongue. R. Proust and A. Maurer.—p. 25.

\*Hemoclastic Crisis in Drug Addicts. P. Sollier and D. Morat.—p. 28.

**Treatment of Cancer of the Tongue.**—Proust and Maurer combine ligation of arteries, extirpation of lymphatic glands and treatment by radium and roentgen rays. They describe the technic, with illustrations.

**Hemoclastic Crisis in Drug Addicts.**—Sollier and Morat found in a morphin and a heroin addict Vidal's hemoclastic test positive. The test remains positive for from twenty to thirty days after stopping the drug, and the negative result is a good indication of recovery. Drug addicts have a hemoclastic crisis after injection of even a small dose of the drug. Therefore a very small injection relieves the severe symptoms after starting treatment, but the drug should never be used later for any reason whatever. Hypnotics cause the same crisis as milk or morphin, and should not be used in drug addicts.

Jan. 13, 1923, 31, No. 4

\*Respiratory Paralysis of the Larynx. Lermoyez and Ramadier.—p. 33.

\*Regional Anesthesia of Uterus. G. Cotte.—p. 36.

\*Milk Injections and Vaccine Therapy in Gonorrhea. Tansard.—p. 37.  
Present Status of Physostigmin as a Heart Tonic. L. Cheinisse.—p. 39.

**Paralysis of Dilators of Larynx.**—Lermoyez and Ramadier believe that syphilis is the cause of symmetric paresis of the dilators of the larynx—a rule for which they admit very few exceptions. The affection is characterized clinically by a permanent inspiratory dyspnea, with attacks of suffocation which may terminate the life of the patient. The voice is clear. Laryngoscopy reveals the vocal cords in a fixed position near the middle line, leaving only a space of from 1 to 2 mm. between. Inspiration aspirates the cords and makes the passage still narrower. Among six cases, in only one, in which no spinal puncture was allowed, was it not proved to be due to syphilis. This clears up the frequent coincidence with Argyll Robertson pupil and aortic insufficiency. While unilateral paresis of the recurrent nerve is usually caused mechanically by dilatation of the aorta, and may be a very valuable sign of aneurysm, bilateral paralysis is simply a parallel affection ("sister, not daughter"), and the usual forced explanations are superfluous. The probable site of the disease is in the medulla oblongata. The syphilitic etiology gives at least a possibility of treatment. This must be prompt and vigorous, starting with mercury and then following with arsphenamin preparations. Iodids should not be used because they may cause cough. No time should be lost in trying to perfect the diagnosis. The patient who comes with a disturbance which he considers as a simple cold, may be suffocated a few hours later. If treatment is started very early, tracheotomy, which so far has been the only relief, will not be needed so often.

**Regional Anesthesia of Uterus.**—Cotte anesthetized the uterus by injections into the base of the broad ligaments. Others have already used this method for anesthesia of the vagina and perineum.

**Milk Injections and Vaccine Therapy in Gonorrhea.**—Tansard injected from 2 to 5 c.c. of milk intramuscularly every other day. The treatment had no effect in acute gonorrhea, but proved very beneficial in all the other manifestations, especially epididymitis and cystitis (ten to twenty injections). When the results were not perfect, he completed treatment with vaccines.

Jan. 31, 1923, 31, No. 9

\*The Jenner Centennial.—p. 97.

**The Jenner Centennial.**—The *Presse* reproduces the addresses delivered at the Académie de médecine by Achard

and Camus. It also gives the facsimile of a letter written by Jenner to congratulate the French for their energy in introducing vaccination into France.

## Progrès Médical, Paris

Jan. 13, 1923, 38, No. 2

\*Alimentary Leukocyte Influx into Stomach. Loeper and Marchal.—p. 13.

\*Differential Diagnosis of Celiacgia. Avierinos and Bourde.—p. 13.  
Cold Abscess in Chest Wall. A. Broca.—p. 18.

**Alimentary Leukocyte Influx into Stomach.**—Loeper and Marchal state that the leukocyte influx into the stomach after ingestion of bouillon is a physiologic reaction. The leukocyte influx reaches higher than 1,000 leukocytes to 1 c.mm. The reaction is autonomous and is independent of other reactions. In hyperchlorhydria, polymorphonuclears predominate, while in hypochlorhydria lymphocytes are abundant and often outnumber the polymorphonuclears. This is pronounced in chronic gastritis and cancer. They will publish later the diagnostic value of these variations.

**Diagnosis of Celiacgia.**—Avierinos and Bourde discuss the diagnosis of celiacgia, based on Loeper's study of the subject. They state that its knowledge will be useful to surgeons as it will prevent many unnecessary laparotomies.

## Revue Pratique des Maladies des Pays Chauds, Paris

October, 1922, 1, No. 1

Introduction to Study of Tropical Diseases. G. Reynaud.—p. 1.

\*Treatment of Amebiasis. P. Ravaut.—p. 8.

Progress in Treatment of Protozoan Diseases. L. Tanon.—p. 18.

\*Gnats in Human Pathology. Neveu-Lemaire.—p. 25.

\*Prophylaxis of Skin Cancer. H. Gougerot.—p. 34.

Syphilis and Pregnancy. C. Jeannin.—p. 53.

\*Germ Carriers in Tropical Pathology. L. Nattan-Larrier.—p. 57.

\*Medicine in Egypt. M. Zeitoun.—p. 72. Cont'd.

**The Tropical Diseases Review.**—This new journal bears the subtitle "Medicosurgical Egypt." One of the three editors resides at Cairo, one at Morbihan, and one at Paris. The subscription is 75 francs per volume. The editors appeal to physicians in tropical countries to send descriptions of their researches and observations. Address Dr. M. Zeitoun, 32 rue de Gay-Lussac, Paris, France.

**Treatment of Amebiasis.**—Ravaut describes what he calls the two modes of attack, emetin and arsenicals by injection, and charcoal by the mouth. He emphasizes the necessity for keeping up treatment long after the patient has been apparently cured. As a general thing, he advocates giving the emetin and arsenical both subcutaneously and by the vein in the acute phases, but by mouth and in enemas when the disease has become chronic. For this, he orders a charcoal compound: 100 gm. each of vegetable charcoal, bismuth subnitrate, simple syrup and glycerin, with 4 gm. of pulverized ipecac. This represents about 0.05 gm. of the ipecac powder and 1.25 gm. of bismuth in each teaspoonful. From 3 to 12 teaspoonfuls of this mixture are taken during the day, at mealtime, every second day for twenty days. On alternate days a tablet of 0.10 gm. of neo-arsphenamin is taken instead. From 0.15 to 0.30 gm. of the same arsenical, dissolved in 60 c.c. of boiled water, with or without laudanum, is injected into the rectum on retiring, to be retained all night. Substantial food is imperative and is usually well assimilated, with the exception of eggs, milk and uncooked articles. By changing thus the mode of administration from time to time, and keeping up treatment long enough, a complete cure was always finally realized in his experience.

**Gnats in Human Pathology.**—Three-day fever and Oriental sore can be transmitted by gnat bites; this is probable also with external leishmaniasis, and possible for Peruvian verruca.

**Precancer Conditions.**—Gougerot insists on the relative frequency of abortive and rudimentary forms of xeroderma pigmentosum, and reiterates that it is extremely liable to develop into cancer. The pronounced forms are rare; Rouvière in 1922 could find only 192 cases on record. Gougerot, however, has encountered a number of cases in the last fifteen years. Sailors, farmers and roentgenologists are subject to epitheliomatosis which closely resembles typical xeroderma pigmentosum, and the analogy is also striking with senile keratosis on regions exposed to the light.



Gougerot regards the action of sunlight as an important factor in the development of skin cancer. All these affections, he declares, represent merely different phases of this "cancer-breeding radiolucitis." The intensity is determined by the sensitiveness of the skin. Much can be done in prevention. This should include treatment of inherited syphilis, organotherapy as indicated, and protection against sunlight and roentgen rays. A broad brimmed hat, a veil, and colored salves (an absorbent quinin salve or calcium fluorid cream) should be used. The preepitheliomatous lesions in the skin must be systematically destroyed. Radiotherapy is preferable for diffuse epitheliomatous infiltration, but not for warty growths. Pigmented spots should be treated only with electrolysis. Even the gravest cases may be kept under control in infants, children, adults and the senile, by periodical surveillance and prompt treatment. To keep these *radiolucites cancérigènes* under control and prevent their development is the most effectual field for prophylaxis and cure of cancer.

**Bacilli Carriers in Tropical Pathology.**—Nattan-Larrier comments on the way in which during the World War diphtheria, cerebrospinal meningitis and bacillary dysentery disappeared from the barracks and camps under the vigorous measures applied to seek out and sterilize the chronic carriers. This method of prophylaxis is soon to be applied to sleeping sickness throughout the whole extent of French equatorial Africa. The recent report of Major Jamot of the medical corps covers an area of 100,000 square kilometers. In two years he has examined 89,743 natives, less than 11,000 escaping examination. He was assisted only by two European nurses and ten natives. The death rate has declined 65 per cent., and the blood was found sterile in 598 of the 753 given systematic atoxyl treatment. The mass of the virus in circulation has thus been reduced 80 per cent.

**Medicine in Egypt.**—Zeitoun describes the foundation of a medical school at Cairo in 1827. Dr. Clot, a French physician, was its initiator under Mehemet Ali, and 1,500 natives were trained in the school. Ninety of the French medical works of the day were translated into Arabic. Bilharz was one of the professors. Clot founded a military hospital, botanical garden and library; in 1827 he inaugurated a course in anatomy, and performed the first necropsy, Zeitoun says, at any point in the Orient in any epoch.

### Schweizerische medizinische Wochenschrift, Basel

Jan. 4, 1923, 53, No. 1

\*General Neuroses. H. Sahli.—p. 1.

\*Goiters and Their Action on the Blood. F. de Quervain.—p. 10.

\*Obstetric Shock. Muret.—p. 14.

Sterilizing of Dressings. W. Silberschmidt.—p. 17.

**General Neuroses.**—Sahli tries to localize hysteric and neurasthenic symptoms in the brain, and to use the energy standpoint in their differentiation.

**Goiters and Their Action on the Blood.**—De Quervain with Hara and Branovacky experimented on rats with the serum and thyroid tissue from 119 different cases of goiter. He used the Asher-Streuli-Duran test of the sensitiveness of hyperthyroid rats to lack of oxygen. Normal serum and the serum of cretins had no influence (in some cases the latter increased the resistance), while exophthalmic goiter acted very strongly. The thyroid acted in a similar way, and it was interesting to note that even the thyroid from cretins was not without influence. Serum from cretins to a certain extent neutralized exophthalmic goiter serum. De Quervain believes that the thyroid secretes several substances. These tests seem to prove the presence of one of them in the serum of patients.

**Obstetric Shock.**—Muret describes a case of shock after delivery. The condition much resembles a large hemorrhage, but it can occur without excessive hemorrhage.

### Riforma Medica, Naples

Jan. 1, 1923, 39, No. 1

Domenico Cotugno, 1736-1822 L. Bianchi.—p. 1.

\*Intestinal Putrefaction in Tuberculosis. V. Cassini.—p. 4.

\*Epidemic Meningitis. A. Della Cioppa.—p. 7.

Conservation of Iso-Agglutination Property of Erythrocytes. P. Mino.—p. 10.

Mechanism of Wassermann Reaction. P. Rondoni.—p. 11.

Recent Literature on Cardiorenal Syndromes. A. Jappelli.—p. 13.

**Intestinal Putrefaction in Tuberculosis.**—Cassini studied the elimination of indican and combined sulphuric acid in tuberculous patients. He considers both substances important indications of intestinal putrefaction. The purulent pulmonary process and the increased decomposition of body proteins may contribute to the elimination of these substances. The increase in sulphuric esters in the advanced stage is greater than the increase in total sulphuric acid or sulphur. The elimination of neutral sulphur varies in these patients.

**Epidemic Meningitis.**—Della Cioppa emphasizes the importance of adenoids as germ carriers. They can be freed from meningococci by applications of a 3 to 5 per cent. solution of iodine in glycerin, or by inhalations of iodine fumes through the nose.

### Semana Médica, Buenos Aires

Dec. 21, 1922, 2, No. 51

\*Prophylaxis of Puerperal Infection. Ubaldo Fernández.—p. 1265.

\*Pneumococcus Infection in Infants. A. Casaubon.—p. 1268.

Welfare Work for Infants. F. Schweizer.—p. 1285.

Vaginal Access to Hydatid Cysts in Pelvis. A. Chueco.—p. 1288.

\*Congenital Dystrophy of Fibro-Elastic Tissues. J. M. Macera.—p. 1291.

Obstetrics and Gynecology from Industrial Standpoint. J. B. González.—p. 1294.

The Chlorophyll Function in Plasmogenesis. A. L. Herrera.—p. 1319.

**Prophylaxis of Puerperal Infection.**—Ubaldo Fernández insists that in obstetrics the danger is from without; all the favorable elements are in the parturient herself. He describes how the application of this principle at the Alvear Hospital has given a morbidity in ten years of only 1 per cent. of women entering the hospital before the onset of labor; 3.8 per cent. after labor has begun. The average for the two groups is 2 per cent. The mortality has been 0.09 and 0.35, with an average for the two groups of 0.18 per cent.

**Pneumococcus Infection in Young Children.**—Casaubon gives an exhaustive summary of the present status of knowledge on this subject. He reports the details of six cases of purulent pleurisy with pneumonia in infants from 9 to 30 months old, all recovering under treatment by repeated puncture and aspiration of the pus. The total thus evacuated ranged from 20 to 780 gm. A 5 per cent. solution of methylene blue was injected. The infants were kept under the closest supervision, ready to call in the surgeon any moment, but all recovered without this, in from nine to fifty-five days. In cases of pneumococcus sepsis, blood can be obtained for examination from the veins in the neck or longitudinal sinus. These are also available routes for injecting the antiserum. Injection directly into the focus is a useful adjuvant, the lung excepted; local injection is dangerous in the lung. The great tendency in young children for pneumococcus meningitis to become partitioned off, justifies injection of the antiserum into the ventricles as well as intraspinally.

**Dystrophy of Fibro-Elastic Tissue.**—Macera ascribes to this general cause the congenital huge inguinal and umbilical hernia and pneumocele in a male infant. The apex of the lung on each side extends to the junction of the lower and middle thirds of the neck. The sternoclavicular ligaments are so small and loose that there is habitual subluxation of this joint. The father is 48 years of age, the mother 46, and there is nothing to suggest syphilis in the family, but another child has an inguinal hernia.

### Siglo Médico, Madrid

Dec. 23, 1922, 70, No. 3602

\*The Oldest Known Case of Addison's Disease. G. Marañón.—p. 605.

The Bacteriologic Work of Pasteur. R. Turró.—p. 606.

Ultraviolet Rays in Treatment of Rickets. J. and V. García Donato.—p. 610.

Syndromes of the Centrum Ovale. C. Juarros.—p. 614. Conc'n.

**The Oldest Known Case of Addison's Disease.**—Marañón reproduces the description by a priest in the sixteenth century of the sickness of a young priest who died three years after the first symptoms. They developed after a fright; the building was struck by lightning and burned. The lay description portrays Addison's disease perfectly, but the pigmentation was ascribed to "smoke getting into the system during the fire." Marañón cites modern instances of an



emotional origin. One of his patients developed the disease after seeing his child killed by a street car.

Dec. 30, 1922, 70, No. 3603

Epileptic Equivalents of Oniric Impulsive Type. A. Fernández-Victorio.—p. 633.

\*Strangulated Scrotal Hernia. Ramiro Arroyo.—p. 635.

Gastro-Intestinal Disturbances in Children. F. García Martínez.—p. 636. Cont'n.

Medicolegal Study of Abdominal Wounds. J. Parra Eytier.—p. 641.

Jan. 20, 1923, 71, No. 3606

Tabes with Few Symptoms. J. M. de Villaverde.—p. 49.

Pathogenesis of Cholelithiasis. C. Blanco Soler.—p. 53. Cont'd.

**Strangulated Scrotal Hernia.**—The hernia occurred suddenly while the man was lifting a heavy weight. It was of the peritoneum-vaginalis type, without any hernial sac, and it became strangulated at once. The quantity of fluid in the peritoneum and vaginalis suggested that there had been some cyst formation, the rupture of which had suddenly entailed the hernia.

### Deutsches Archiv für klinische Medizin, Leipzig

Nov. 21, 1922, 141, No. 1-2

\*Renal Hypertrophy of the Heart. L. Braun.—p. 1.

\*Encephalography. E. Schott and J. Eitel.—p. 16.

\*Polycythemia Rubra. K. Gutzeit.—p. 30.

\*Pressure in Pleural Cavity. G. Ganter.—p. 68.

\*Action of Endocrines on Serum Calcium. H. Leicher.—p. 85.

Improved Method of Oscillography. S. Hediger.—p. 117.

**The Kidney Factor in High Blood Pressure.**—Braun considers experimental hydronephrosis as one of the best methods to induce hypertrophy of the heart. He mentions three necropsies which he considers instructive instances of this. He reviews the mechanism of this process, and believes that the origin of the vascular changes in renal sclerosis is also down stream from the glomeruli, in the secreting tissue of the kidneys. The circulation influences the secretion, but the secretion of urine can cause changes in the blood circulation.

**Encephalography.**—Schott and Eitel publish the results of their investigations on an anatomic model, on cadavers, and persons with and without brain lesions. After they found in one case that the insufflated air remained for twelve days in the ventricles of the brain, they used oxygen, which is resorbed much quicker. Yet the other very disagreeable symptoms remained, and were so severe that they advise limiting such investigations to cadavers. The diagnostic results are too insignificant in comparison with the disturbances caused by the method.

**Polycythemia Rubra.**—Gutzeit publishes clinical histories of five idiopathic cases and adds four others in which the polycythemia was due to other diseases. Some of his cases developed after infections, although the history pointed toward a previous latent polycythemia. The young son of one patient suffers from lymphatic leukemia. Investigations among the members of such families reveal sometimes latent polycythemia, although such persons may look rather "anemic." Two cases had a very protracted coagulation time, due to diminution of fibrinogen and thrombokinase. Several cases had a lowered osmotic resistance and a low nitrogen content in the erythrocytes. In one case which presented hypertension and normal spleen at first, the blood pressure later became normal, but the spleen was enlarged. Thus a polycythemia of the Gaisböck type changed into the Vaquez type, showing that probably neither of the distinguishing signs is essential.

**Pressure in Pleural Cavity and Its Influence on Site and Shape of Exudates.**—Ganter studied on a model and on patients the pressure within the pleural cavity, and proved that it differs in different parts of the pleura. This is due to the fact that the elasticity of the lungs is not uniform. These differences in pressure account for the well known parabolic upper limit of exudates; they cannot follow merely their gravity and do not change their level quickly. If the tension of the lungs is put out of play by pneumothorax or in a smaller degree by loss of elasticity (emphysema), free fluid in the cavity has a horizontal level. The lobes of the lungs keep together as long as there is no infiltration. If, however, the elasticity of the lower lobe is affected by pneumonia, the difference in pressure at the upper border of the left lobe allows the fluid to accumulate between the lobes.

**Action of Endocrines on Serum Calcium.**—Leicher used de Waard's method, and determined the calcium as Ca ion. He found in sixty healthy individuals a remarkable constancy among persons of the same age. The average in the first 20 years is 10.6 mg. in 100 c.c. of serum. From 20 to 30 the average was 11.5 mg.; then it decreased, at first (to 45 years) slowly, then quicker down to 10.8 mg. in persons over 50 years of age. The calcium content of the whole blood decreases quickly in the first 20 years (from 12 to 9), and presents another smaller diminution between 45 and 54. The amount of calcium in the serum does not change after ingestion of calcium salts prolonged for several weeks (20 persons), but is lowered by thyroid treatment, injections of pituitary extracts, and epinephrin. Exophthalmic goiter and especially tetany had a lower, myxedema a higher calcium content. No constant changes could be found under the influence of the sex glands, but it seems that pregnant women often have an abnormally low level in pathologic conditions.

### Deutsche medizinische Wochenschrift, Berlin

Jan. 5, 1923, 49, No. 1

Tuberculosis and Pregnancy. G. Winter and W. Oppermann.—p. 1.

\*Pathogenesis of Carcinoma of Stomach. Askanazy.—p. 3. Cont'd.

\*Treatment of Glaucoma. W. Uthoff.—p. 6.

\*Action of Alcohol on Acidity of Gastric Juice. K. Frehse.—p. 11.

\*Pituitary Obesity. H. W. Knipping.—p. 12.

Diathermy in Surgery. H. Picard.—p. 13.

\*Respiration of the Skin. O. Gans.—p. 16.

Acriflavin in Endocarditis. H. Mark and L. Olesker.—p. 17.

\*Life Saving by Ventral Decubitus. E. Rautenberg.—p. 17.

\*Catheterization of Trachea in the New-Born. H. Kritzler.—p. 18.

A Rare Injury in First Cohabitation. J. Friedemann.—p. 19.

\*Labor with Flat Pelvis. M. Henkel.—p. 19.

\*Compulsory Vaccination and Blindness in Smallpox. Hess.—p. 21.

**Pathogenesis of Carcinoma of Stomach.**—Askanazy mentions the importance of adenomas in chronic gastritis, and of ulcers, for the genesis of carcinoma, and deals chiefly with the origin of malignant tumors from heterotopic embryonal remnants in the gastric wall.

**Treatment of Glaucoma.**—Uthoff reviews the problem and treatment of glaucoma. The chief point is the increase in intra-ocular pressure, with its deleterious influence, even if it occurs only in attacks as in simple glaucoma. Repeated measuring of the tension will reveal the increase, and it is suggested by the dimmed rainbow vision. Miotics relieve the tension, and may in rare instances even cure the process. They are indicated in chronic simple glaucoma. They are especially important in the pure noninflammatory cases, because the results of operation are not good in this condition. General treatment has hardly any influence, since the affection is purely local. He deals extensively with the surgical proceedings and recommends iridectomy, although the process progresses even after operation in about 5 per cent. of the cases. Some cases of severe myopia suffer from chronic glaucoma, which can be easily overlooked if examination of the field of vision is omitted.

**Action of Alcohol on Acidity of Gastric Juice.**—Frehse studied in 132 cases the influence of an addition of 2.5 or 10 per cent. of alcohol to Ewald's test meal. In healthy persons the acidity did not change. In most cases of ulcer, the acidity was lowered, while it was usually increased in nervous dyspepsia.

**Pituitary Obesity.**—Knipping continued on nineteen patients Plaut's investigation of the specific dynamic action of food in obesity. In most of these patients, although not all, other signs of pituitary disturbance were present. In two of them a preparation of the anterior lobe of pituitary was administered, and an increase of the specific dynamic action of food resulted. Two dogs with a partially destroyed anterior lobe showed the same influence of the preparation.

**Respiration of the Skin.**—Gans studied the oxygen consumption of small particles of healthy and pathologic skin, and found a parallelism between the rate of oxygen consumption and the sensitivity to roentgen rays.

**Life Saving by Ventral Decubitus.**—Rautenberg recommends a position on the chest and abdomen, with the foot of the bed raised, similar to the position used in reviving the drowned, in cases of edema of the lungs and in pneumonia in



the stage of lysis. Hypostatic pneumonia is also well influenced or prevented with this posture. The same mechanical principles are involved as in resuscitating the drowned.

**Technic of Catheterization of Trachea in the New-Born.**—Kritzler uses exclusively soft catheters in which a semi-elastic bougie may be inserted. In order to pass the instrument into the trachea and not, as often happens, into the esophagus, it is advisable to introduce the index finger into the latter.

**Labor with Flat Pelvis.**—Henkel warns very emphatically against indiscriminate use of forceps. It is a mistake to believe that forceps can overcome a serious disproportion between head and pelvis. It should be used only when the disproportion has already been overcome by natural forces. Other indications and contraindications should be also kept in mind. If from six to eight regular tractions are without result, perforation of the head should be performed. Version after a forceps attempt is malpractice. If version is successful, there is no indication for forceps. If it is not, it is a useless danger for mother and infant. Unsuccessful forceps attempts should be followed by perforation; unsuccessful version by embryotomy. Induced premature delivery, and especially symphysiotomy and pubiotomy, should be abandoned in favor of cesarean section.

**Blindness in Smallpox.**—Hess calls attention to the great number of blind people after smallpox in countries without compulsory vaccination.

### Münchener medizinische Wochenschrift, Munich

Jan. 5, 1923, 70, No. 1

\*Blood Pressure. F. Müller.—p. 1.

\*Colloid Treatment. H. Siegmund.—p. 5.

Treatment of Cancer. Kupferberg.—p. 6.

\*Postoperative Irradiation of Cancer. F. Winter.—p. 7.

\*Treatment of Urethral Gonorrhea in Women. Arneth and Fabritius.—p. 9.

\*Indications for Thyroidectomy. M. Lebsche.—p. 11.

Plastic Induration of Penis. C. B. Hörnicke.—p. 13.

\*Surgical Treatment of Gastropstosis. Pust.—p. 15.

Diagnostic Excision in the Bladder. K. Scheele.—p. 17.

Treatment of Sleeping Sickness with Bayer 205. W. Menk.—p. 18.

A Needle for Ventriculography. L. Benedek.—p. 19.

Technic of Ventriculography. E. v. Thurzo.—p. 19.

Tuberculin Inoculation. F. Wesener.—p. 20.

Suit for Alleged Obstetric Malpractice. A. Döderlein.—p. 20.

Semmelweis and Lister. W. v. Brunn.—p. 22.

Symptomatic Changes of Blood. P. Morawitz.—p. 23.

German Youth Welfare Law. M. Thumm.—p. 25.

\*Types Seen by Pediatricians. E. Moro.—p. 26.

**Blood Pressure.**—Müller reviews the history of blood pressure determination, and emphasizes its central regulation. Expelling the blood from a lower extremity does not change the blood pressure, even in cases with hypertension. The peripheral resistance (smallest arteries and capillaries) and not the central force (heart) determines the blood pressure. In cases of genuine hypertension, the tunica media of all small abdominal arteries is hypertrophic from increased function (Huchard's presclerosis). This accounts for the fact that considerable hypertension may become normal. Arteriosclerotic changes of the vessels are secondary. Affections of kidneys leading to insufficiency—even retention of urine—have an unquestionable influence. Further, the constitution may play a part. He finds in the families of such patients migraine, asthma, gout, diabetes and arthritis. Women suffering from uterine fibroids have usually a high blood pressure, which may diminish after operation (not after roentgen-ray treatment). The prognosis is not as bad as we thought before measurement of blood pressure became universal. Digitalis and caffeine may be given if the heart becomes insufficient, and may even lower the blood pressure. Coffee and tea are allowed; nicotine and wine must be forbidden. Low diet may be tried although the general starvation during the war did not seem to influence hypertension. Moderate exercise is to be recommended. Venesections act symptomatically well. Hypertension is not a contraindication to any operation.

**Colloid Treatment and Active Mesenchymatous Tissue.**—Siegmund found that the "storage" of different colloidal preparations in reticulo-endothelial cells increases the resistance of mice against a subsequent infection. He found that

the mesenchymatous tissue, which stores these substances, becomes more capable of taking up a new supply—including bacilli—and that it proliferates. Organoid structures develop in the adventitial tissue. They consist of reticular cells capable of storage, and an indifferent hemopoietic parenchyma, which may develop into different cells according to the substance injected. Silver induces chiefly myeloid formations; iron, myeloid-erythroplastic elements; proteins cause a lymphocytic, and cholesterol an endothelial proliferation. The action of colloids consists in stimulating these cells to greater activity.

**Postoperative Irradiation of Cancer.**—Winter finds that his results with carcinoma irradiated after operation are a little better than in cases without after-treatment. The dosage requires further study.

**Treatment of Urethral Gonorrhea in Women.**—Arneth and Fabritius emphasize the importance of energetic treatment of urethral gonorrhea in women, even when the chief focus is in the cervix, which must be treated mildly.

**Indications for Thyroidectomy.**—Lebsche points out that the patient suffering from goiter, and not the thyroid itself, is the subject of treatment. Persons who previously had rachitis are very liable to postoperative tetany. In thyrotoxic heart disturbances, it is better to wait until rest and sedatives have improved the condition. True "goiter heart" is ameliorated by operation. Patients with compression of the trachea should be treated surgically. Sometimes the dyspneic condition is latent, because the patient has learned by instinct to avoid overexertion, until an attack of suffocation convinces him of the necessity for an operation. There is no question about the treatment of a malignant struma; cancer is to be suspected, if a goiter starts to grow quickly in old people. The most difficult decision is in children with vascular goiter in which the clinical signs (not only the histologic changes), speak for an exophthalmic goiter, while the aspect of the patient reveals cretinoid stigmas. Determination of the basal metabolism is a valuable aid in such cases. No goiter should be operated on merely for cosmetic reasons.

**Surgical Treatment of Gastropstosis.**—Pust has devised a simple longitudinal folding of the stomach, and reports twelve good results.

**Types Seen by Pediatricians.**—Moro complains that the consulting pediatrician has to deal almost exclusively with neuropathic children. He describes several types. Increased temperature is sometimes simply due to preceding exertion. Some children have permanent rectal temperatures between 37 and 37.8 C. Opium lowers this harmless "constitutional subfebrile state," but pyramidon has no effect. Fever reacts in the opposite way. In vasolabile children the difference in the pulse in standing and reclining is great, and increases after exertion; the rate in reclining may be even lower than before. "Umbilical colic" is usually associated with pallor during the attack. Most cases can be cured by suggestion. The faradic current works wonders in these cases of neurosis, and indifferent plasters applied with the proper suggestion are effective. The child should not be present during the whole taking of the history, and should not hear the diagnosis, unless it is negative.

### Wiener klinische Wochenschrift, Vienna

Jan. 4, 1923, 36, No. 1

\*Organotherapy in Neuroses and Psychoses. Wagner-Jauregg.—p. 1.

Capillary and Parenchymatous Bleeding. P. Albrecht.—p. 4.

\*Jarisch-Herxheimer Reaction. M. Oppenheim.—p. 7.

\*Wassermann Reaction in Cancer of Uterus. R. Niedermayr.—p. 10.

The Epiglottis in Total Extirpation of Larynx. K. Kofler.—p. 11.

History of Vienna Medical School. M. Heitler.—p. 12.

**Organotherapy in Neuroses and Psychoses.**—Wagner-Jauregg recommends thyroid treatment in every case of retarded development of children. If a tumor of the pituitary is combined with a goiter or symptoms of hypothyroidism, thyroid tablets may improve the pituitary condition, and even the hemianopia may be favorably influenced. Dementia praecox is a group of diseases. The use of thyroid and sex gland has sometimes a favorable influence in the early stages of the hebephrenic type. Yet one should not forget in considering hypofunction and hyperfunction of glands that



qualitative changes (dysfunction) are possible. Complete recovery followed this treatment only in girls in whom the psychosis started at puberty and sex development had been arrested in the infantile stage. Similar good results were obtained in nervous girls with hypoplastic uterus who started to menstruate very late. Tics of the pubertal age were also favorably influenced.

**The Jarisch-Herxheimer Reaction.**—Oppenheim had 128 cases of Jarisch-Herxheimer reaction among 180 cases of syphilitic exanthemas. He observed them for two years and found that the cases which showed an intense reaction had an unfavorable course with regard to recurrences, their localization (liver, eyes, nerves), and the Wassermann reaction. Cases of tabes which have severe pains after injections of arsphenamin, are progressing. Similar reactions (dizziness, hallucinations) can occur in general paralysis. He found that mercury and arsphenamin are retained longer in the body after a strong Herxheimer reaction. To avoid these reactions, it is well (except in the abortive treatment) to start with mercury ointment or with small doses of mercury, before giving arsphenamin.

**Wassermann and Meinicke's Reaction in Cancer of Uterus.**—Niedermayr found among twenty-five cases of carcinoma of the sex apparatus one cachectic case with a positive Meinicke test and a weak positive Wassermann test with inactivated serum (negative with active serum). One case had a positive reaction after roentgen treatment.

### Zentralblatt für Gynäkologie, Leipzig

Jan. 6, 1923, 47, No. 1

Graviditas Ovarica, Graviditas Fimbriae Ovaricae and Graviditas Paratubaria. O. Hoehne.—p. 2.

\*Parabiosis in Experimental Research. R. Nissen.—p. 11.

\*Irradiation of the Spleen. L. Nürnberger.—p. 19.

\*Treatment of Vulvar Pruritus. A. Littauer.—p. 25.

\*Intraligamentous Ganglioneuroma. W. Stoeckel.—p. 33.

Enormous Cystoma. P. Weischer.—p. 37.

**Parabiosis as a Means of Experimental Research in Sex Pathology.**—Nissen has found parabiosis applied to rats and rabbits a valuable experimental method of research in studying certain questions of sex pathology. His experiments make it seem possible that the bodily changes in the female in pregnancy are not caused by hormones but by nervous impulses. On the other hand, the Sauerbruch-Heyde researches furnish evidence that the inauguration of labor pains is brought about by metabolic products which pass, in accordance with the humoral theory, from the fetus to the mother. Owing to the short existence of animals united by parabiosis, the difficulties of the investigations are very great.

**Irradiation of the Spleen in Gynecologic Hemorrhage.**—Nürnberger reports that he tried roentgen irradiation in twelve cases of hemorrhage due to tumors of the adnexa and thirteen cases of hemorrhage of ovarian origin. In eight of the former and ten of the latter, the hemorrhage was arrested within three days, frequently on the day of the irradiation, and in a few cases within half an hour of the application. He therefore regards roentgen irradiation of the spleen as a valuable therapeutic measure in the treatment of hemorrhage of genital origin. In some cases irradiation is of no avail, but these cases promise valuable physiologic, pathologic and therapeutic discoveries.

**Treatment of Vulvar Pruritus with Special Consideration of Thrush and Trichomonas.**—Littauer states that in cases of vulvar pruritus in the form of an oozing eczema the use of ointments usually causes an exacerbation. The best results are secured by dry treatment. The hot air jet and phototherapy, especially red light, are efficacious, but if the secretion has subsided, it is better to use blue light, which is also to be recommended in pruritus without eczema. For treating excoriations of the skin after the oozing has ceased, he finds 10 per cent. silver nitrate solution the sovereign remedy; this requires much patience on the part of the patient and physician but gives excellent results. In a few refractory cases of vulvar pruritus, extirpation of the vulva is the last resort. The operation presents no technical difficulties, and can be performed under local anesthesia. The labia majora et minora, together with the clitoris, are removed. The hemor-

rhage is easily controlled, if all the tissue to be removed is not excised at once. The excision is best begun from below. The plastic result is very good, and superficial examination would not reveal any change of the introitus following the operation. Even excision does not help in all cases, especially if the cause of the pruritus is elsewhere than in the tissues removed. Another cause of vulvar pruritus is thrush (*Monilia albicans*), which sometimes requires careful inspection for its recognition. Treatment consists in painting the affected area every other day with a 10 per cent. solution of pyoktanin, which unfortunately stains the clothing for a time. In some cases he has found roentgen irradiation effective. *Oxyuris* or *Trichomonas* infection may also be suspected.

**Intraligamentous Ganglioneuroma.**—Stoeckel reports what seems to be the first operative case of ganglioneuroma of the true pelvis in a woman. These tumors are comparatively rare, only about two dozen having been thus far reported. They are found on the face, abdomen and other regions of the body. They are referable to disturbances of the sympathetic nervous system, and are sometimes multiple and sometimes solitary. They are composed of ganglion cells, nerve fibers, and connective tissue fibrils. The histologic structure, as Borst states, resembles a broken-down sympathetic ganglion.

### Zentralblatt für innere Medizin, Leipzig

Jan. 6, 1923, 44, No. 1

Determination of Real Blood Pressure. H. Chantraine.—p. 1.

### Casopis Lekaruv Ceskych, Prague

Jan. 6, 1923, 62, No. 1

Tubercle of the Optic Disc and Choroid. J. Janku.—p. 1. Cont'd.

A Pelvimeter for the Conjugata Vera. V. Rubeska.—p. 8.

Present Status of Acidosis. V. Laufberger.—p. 9.

### Hospitalstidende, Copenhagen

Jan. 10, 1923, 66, No. 2

\*Partial Heart Block. O. V. C. E. Petersen.—p. 21.

**Partial Bundle Heart Block.**—Petersen remarks that electrocardiography is the most reliable criterion for hypertrophy of either ventricle. Systematic electrocardiograms from heart patients have confirmed that partial bundle block is an early phase of complete heart block, and a sign of an extensive affection of the myocardium. He tabulates the details of 28 cases of partial bundle branch block encountered in the course of five and a half years in 25 men and 3 women. Nine kept in comparatively good stationary condition; in 6 the course seemed to be gradually progressive, and 12 have died. Only 2 of the 28 had edema. The most frequent symptom, except panting and palpitation which were present in all, was angina pectoris. Eighteen of the patients had angina pectoris, with frequently repeated attacks.

### Hygiea, Stockholm

Jan. 16, 1923, 85, No. 1

\*Disinfecting Action of Quinin. K. G. Dernby.—p. 1.

\*Neurology of the Abdominal Wall. G. Söderbergh.—p. 5.

**Disinfecting Action of Quinin Derivatives.**—Dernby's research seems to suggest that the solubility of quinin derivatives diminishes as  $p_{H}$  increases; also that addition of sodium bicarbonate or other alkali enhances the bactericidal power. Lack of alkaline reaction may be the explanation for the difference between the disinfecting power of certain quinin derivatives in the test tube and in human tissues.

**Neurology of the Abdominal Walls.**—For ten years Söderbergh has been studying the motor functions and reflexes in the abdominal walls. This is his fifteenth publication on the subject, and he reviews the conclusions and shows their practical application in five cases.

### Ugeskrift for Læger, Copenhagen

Jan. 25, 1923, 85, No. 4

Recent Progress in Dietetics. C. Jürgensen.—p. 59. Begun in No. 3, p. 37.

The New Danish Law on Marriage.—p. 63.

Contract Practice in Norway. H. Rasmussen.—p. 66.



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## THE PROBLEM OF PREVENTIVE MEDICINE

IN PRACTICE AND IN MEDICAL EDUCATION

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The rapidly developing appreciation of the importance of preventive medicine by the general public and by the medical profession has brought home to the medical school the problem of teaching "disease prevention" in its broadest sense. It is my hope to summarize the influences of some of the more important agencies that have led up to the popular demand for preventive measures in medical practice, and to point out a way in which the average medical school, not associated with a school of public health, may prepare the prospective medical graduate to meet the situation. The material is discussed under two general headings: (1) influences that are developing an ever increasing demand for disease prevention in the practice of medicine, and (2) preventive medicine in the medical curriculum.

### INFLUENCES DEVELOPING AN EVER INCREASING DEMAND FOR DISEASE PREVENTION IN PRACTICE OF MEDICINE

Preventive medicine is commonly defined as the medicine of the community, and contrasted with curative medicine or medicine affecting the individual. This interpretation was more appropriate before the importance of personal hygiene as a protective measure was fully appreciated and before the use of protective biologic products had become practical, than it is at present. While the right of the community to be protected from disease, whenever protection is possible, is gaining more and more recognition each year, the more modern interpretation is to consider the individual the unit of protection and to develop methods of disease prevention which can be applied for the protection of the individual, the group and the community. The term "health promotion" has already been suggested as a successor to that of "preventive medicine." Search for a term to take the place of "preventive medicine" seems rather premature, since preventive medicine, itself, is only just becoming established. The new term is quoted merely to show the present trend of thought, and to illustrate the popularity with which the movement in general has been received.

The practice of medicine has been changing for several years, and there has been a steadily increasing trend in the directions of prevention, and of earlier diagnosis

and treatment. Many influences have combined to bring this about, among which may be mentioned the advance of medicine as a science, urbanization, political and legal influences, and the activities of semimedical and nonmedical health organizations.

First of all, let us establish the fact definitely that preventive medicine has been made possible only through the advances in medicine as a science. The "old style family physician," formerly the ideal example of medical practitioner who was family councilor and comforter as well as omnimedical adviser, is passing. Several most interesting articles have appeared which have emphasized his worth to the community, regretted his gradual disappearance, and suggested means of bringing him back; but he is the victim of human limitations, and in the "time honored" sense cannot "come back," because medical science has made it impossible. The "general practitioner" of today has more than taken his place medically and scientifically, but his absence is still sorely felt by the public because the selfsame science that has made possible a more accurate diagnosis and given more complete knowledge of prognosis will not permit the general practitioner honestly to hold out to the dangerously sick patient and to his friends the hope and the encouragement that was the primary psychologic factor in the success of the older type of family physician. Medical science has become too technically comprehensive and too specialized to be mastered by a single mind. Specialties are necessary, and will become more so and more varied as time goes on; and, with each new attainment in treatment, new means of prevention will become apparent and be brought into practice.

The discovery of the bacterial cause of many diseases, the uncovering of the great principles of immunology with their bearing on the course and termination of diseases, the disclosure of the constant organ and tissue changes affected by certain specific causes, the conception of measuring the changes in function wrought by disease with the use of the acquired information for more accurate diagnosis, the advent of the roentgen ray, the development of highly technical knowledge along special lines and the revelation that some diseases can be prevented more readily than they can be cured are the scientific bases for preventive medicine.

The growth of cities and the migration of the general population to them have made preventive measures imperative. The close physical contact of great numbers of persons has made it necessary to control water, food and milk supplies, to institute proper sanitation and drainage, and to appoint departments to enforce quarantine and similar measures. Medical men have always been and still are the leaders in the establishment of these measures. Hospitals and laboratories which have played a great part in the control of disease



are outgrowths of the common needs of the physician and the city. Urbanization has made hygiene, public health, sanitation and preventive medicine necessary specialties.

The greatest single factor in precipitating the present day activities in preventive medicine was probably that of the war. It showed indisputably that health measures summarily enforced would decrease, if not entirely control, many diseases that had formerly been among the most destructive agencies of war. The successes of vaccine prophylaxis for typhoid, dysentery, cholera and smallpox were emphasized; the value of prophylaxis against tetanus was realized as never before; the efficacy of venereal prophylaxis and the importance of general health and sanitary measures were demonstrated beyond all possibility of doubt. Educational measures in the army received a great deal of attention, and have borne so much fruit that most of the former "dough boys" have a fair basis for estimating the competence of the home doctor. At home, the war gave a great impetus to industrial medicine. The value of having the able man on the job was appreciated broadly for the first time. Hundreds of thousands of physical examinations made by local boards and medical advisory boards demonstrated the presence of thousands of unsuspected lesions in apparently healthy persons. Since the war, the United States Public Health Service, the various state, and municipal health departments have been attempting to apply the lessons of the war to civil life. Health institutes have been held in various cities. Circular letters of instruction on modern methods of prophylaxis and treatment have been sent to physicians, and their cooperation in health education has been invoked.

Various other agencies are engaged in teaching the public, or, more accurately, the "public's children" modern health measures. The public school and the health nurse are now being used extensively for this purpose. The difficulty for the physician is that the required knowledge is relative. For instance, the public is given a superficial smattering about a given health procedure, just enough to appreciate its value and feel its necessity. The public health nurse is given a very general idea of the involved principles, and is supplied with a technical training covering in minute detail the steps in the application of the procedure. The physician is expected to know the "whys and wherefores," the scientific principles, the method of application and the limitations; in short, the science as well as the art of the procedure. Infinitely more is required of him; and, if he is unprepared, the public and the health nurse are likely to assume his deficiency in the matter as an index of his general ability. There have been many instances wherein the physician has appeared at a disadvantage because he has been deterred from his apparent duty by his more complete knowledge, and has received undeserved censure from well meaning persons possessed merely of popular information.

The health nurse is essentially a field worker in preventive medicine. The work is comparatively new, the limitations of the field are not yet sharply drawn, and there is often friction with the physician where there should be cooperation. Physicians are inclined to feel that health nurses are going beyond the limitations of their training. They are too familiar with the training of nurses in general to appraise the health nurse at her actual value. They feel that the tendency on the part of nurses to prescribe drugs is dangerous and that the procedure is illegal, and they are not inclined to tolerate

it, or to pardon the offender. On the one hand, the physician must realize that the health nurse cannot adapt herself to too many strange conditions at once; that she is here and here to stay; that the state and the public have accepted her and are providing for her, and that she is willing and anxious to do the right thing and to accept intelligent guidance. If the physician is not prepared to furnish that kind of guidance, he must take steps to acquire the training necessary for it. Otherwise he is open to the criticism that he will get. Nurses, on the other hand, must realize that they can gain little in cooperation by public defiance of a physician with whom they are forced to work.

Life insurance companies have done much to bring preventive medicine into the foreground. They began by accumulating great masses of statistics showing the influence of various diseases on the length of life. The Metropolitan Life Insurance Company of New York has been active in many ways, and has published much health propaganda. The company has tried out preventive medicine on a large scale with its own employees. The company gives the employee a physical examination annually, insures his family against destitution in case of his lost earning capacity, takes care of him when he becomes sick, and saves his job for him in case he recovers and is again able to resume work. Others have not been slow to take advantage of the physical examination, and we have had developed life-extension bureaus, health centers and the like.

Medical dispensaries, too, are constantly increasing both in number and in patronage, and they are being used as centers for teaching preventive measures. In 1921,<sup>1</sup> it is known, there were 3,243 dispensaries operating in the United States. It is estimated that there were in addition about 4,000 dispensaries connected with the various industries, totaling at least 7,243 dispensaries. In the known dispensaries, 3,872,345 patients were admitted for a total of 11,798,887 visits. Estimated on the same basis, the total number of patients received in the 7,243 dispensaries would mean that about 8,000,000 patients made 29,500,000 visits to dispensaries during the year. The total population of the United States is a little over 100,000,000, so that approximately one twelfth of the entire population was treated in clinics during the year. It is not possible to estimate the exact percentage of persons who require medical attention each year, so that the relative number left to the practitioner cannot be determined. The number making use of dispensaries showed a great increase over any preceding year, and the development of many new clinics of a special nature led to a steady increase in their use. Special clinics for mental hygiene, child hygiene and venereal disease were opened (119 of the latter by the United States Public Health Service). Perhaps the most interesting experiment of the year was the institution of the Cornell Pay Clinic<sup>2</sup> in November, 1921. This clinic admits no free patients, but maintains an elaborate set of eligibility rules for pay patients, based on the annual income compared to the size of the family and the cost of the medical service. A fee of \$1 is charged on admission, and an additional dollar is collected at each subsequent visit. During the first five months, 18,803 patients were admitted, and a total of 43,899 visits were received. From the standpoint of the clinic, it appears to be a success. However, it is obviously not fair to admit a

1. Dispensary Service in the United States: First Presentation of Dispensary Data by the Council on Medical Education and Hospitals of the American Medical Association, J. A. M. A. 79:464 (Aug. 5) 1922.

2. Typewritten Report, issued by the Cornell Clinic, June 1, 1922.



person having three in his family who earns \$2,500 a year, and to exclude one in similar circumstances who earns only \$2,600, so that the scope of the clinic will necessarily be increased from time to time, and no one can say where the practice may end. A different kind of dispensary has been in use for several years at the Massachusetts General Hospital. It is conducted for diagnosis only, and offers the services of a group of specialists and the advantage of thorough laboratory tests at very reasonable rates. It accepts no patients except those referred to it by a physician, and returns the patient to his own physician for treatment. It is known as a consultation clinic. The success of a dispensary depends principally on the grade of work it is able to do, and this, in turn, depends on its medical personnel. The practitioner who is not connected with a dispensary may or may not have to compete with one in a commercial way, but he does have to compete, on the basis of service rendered. If the dispensary has health education as one of its main objectives, the practitioner, too, must be prepared to give reliable information on disease prevention to his private patients.

Poverty and disease have always been closely akin. Poor food, bad housing, crowding and insufficient ventilation permit many diseases to spread more rapidly among the poor than among the well-to-do. Charitable organizations formed to handle social economic problems, as well as lay organizations caring for the sick and disabled of war and in other great emergencies, have been quick to see the advantages of preventive measures and to insist on their practice. The activities of the American Red Cross, the National Association for the Prevention of Tuberculosis, the Association for the Promotion of Child Welfare, the National Organization for Public Health Nursing and several others are too well known to need detailed discussion here. A great deal of credit is due them for their accomplishments. During the war and since that time there have appeared so many organizations having closely allied interests, and there has been so much competition among them, that many instances of confusion of purpose and conflict of fields have occurred. One might easily believe from the communications contained in the daily mail that membership in some organization to reform, promote, prohibit or educate is one of the ruling human passions. Cooperation between the older and more established associations and the physician has been good and mutually beneficial; but the average physician realizes that it is impossible to fulfil all requests made of him, and that he must either discriminate between them or discard them all.

Health officers frequently complain that practitioners are careless in complying with health department requests and mandates, and have attempted at times to force physicians to carry out their provisions through the use of police powers and by public criticism. Public criticism will not solve the problem, because it antagonizes the offender, misleads the public, and commits an injustice on the great majority of the profession.

Of interest in this connection was a discussion that took place at the 1922 annual meeting of the American Public Health Association in Cleveland, where the uninitiated were led to infer that the ordinary physician; not in public health, is ignorant, nonprogressive, noncooperative, short-sighted and generally antagonistic to all preventive measures. The chairman<sup>3</sup> in his open-

ing address took the attitude that the physician antagonizes public health activities on commercial grounds, and that he, therefore, is short-sighted, since it is good business to prevent contagious diseases. According to this theory, the physician, instead of being called in to make two or three visits and sign a death certificate, saves the patient for the chronic diseases of elderly life, when many visits will result. If it were true that the physician is a wholly commercial person, and my experience indicates that usually quite the reverse is the case, the argument is a poor one because the business of saving the child to profiteer on the aged would put off dividends until the next generation of physicians. A point worthy of much more careful consideration made in the same address was the observation that when one physician is the recipient of a case referred by another, it is customary to drop a courteous note of thanks, but that when a school physician sends a note to a child's parents calling attention to an obvious ailment of the child with instructions to "see the family physician," the latter generally tears up the note and attempts to prove that the school physician was mistaken. Among other speakers who discussed the paper, the remarks of Dr. Martin seem particularly pertinent. He pointed out that the medical profession could be divided into three groups: an upper third, made up of leaders of the profession—high minded men devoted to research, to close observation and to progress; a middle third, of strong, clear sighted, intelligent men who follow the leads of the upper third, and who form the bulwark of the profession; and a lower third, of self centered, poorly trained, nonprogressive individuals who form an antagonistic group and whose antagonism one must have as an index that he is in the right.

At a session of the Child Hygiene Division, a group composed largely of nurses and welfare workers, a New Jersey state official<sup>4</sup> presented an immense amount of statistical evidence to prove that the death rate was less when obstetrics was done by midwives than when carried out by physicians. Without questioning the total figures, one would like to know how many of the infant and maternal deaths were due to puerperal infection or to poor obstetric technic, and how many to pre-existing pathologic conditions and to concurrent diseases. It is a well recognized fact that pathologic pregnancies find their way to physicians, while the midwife's practice comes largely from the healthy women among the foreign element and hence are normal deliveries. It may be well to point out here that medically trained followers of men like Holmes and Semmelweis had reduced the obstetric death rate due to puerperal sepsis from about 10 per cent. prior to 1847 to less than 1 per cent. before infant welfare organizations as such had been thought of, and that the relatively less pronounced improvement since that time has been due to the strictest application of scientific medical knowledge. Under the circumstances, it scarcely seems just to infer that the discrepancy on the side of the physician is due to poor obstetric preparation and to carelessness, although that interpretation was made, and this before a group which has shown itself prone to become hypercritical on all possible occasions. The foregoing discussions are cited in the spirit of arousing the practitioner to eliminate any just causes for complaint which health officials may have, and not with the intention of increasing antagonism.

3. Discussion of John Dill Robertson's paper, "Challenge to the General Practitioner," read before Administration Section of American Public Health Association, Cleveland, Oct. 16, 1922. Paper published without discussion, *Am. J. Pub. Health* 13:1 (Jan.) 1923.

4. Levy, Julius: Maternal Mortality and Mortality in the First Month of Life in Relation to Attendant at Birth, *Am. J. Pub. Health* 13:88 (Feb.) 1923.



One of the resolutions of the meeting was based on the opinion that the physician generally is not keeping up with preventive medicine. It was pointed out that this was in part due to his medical school training, which is unbalanced in favor of treatment as weighed against prevention, and that *"it is essential that medical schools change their ideals of education before the general profession can be changed in its relation to the public."* The resolution was to the effect that a committee be appointed to suggest an outline of proper courses in public health and preventive medicine for undergraduate medical students and to confer with the Curriculum Committee of the Association of American Medical Colleges and with the various state medical licensing boards.

Numerous other influences might be discussed, for there are many "anti" societies which have appealed to law to have their ideas enforced, and many political and socialistic influences advocating health insurance and the like. There is the whole subject of industrial medicine, most of which is preventive in character; but I think I have cited a sufficient number of facts to emphasize the need of concerted action on the part of the medical profession in regard to a serious consideration of the part that the public expects it as a profession to play in the development of public health and preventive medicine. The statement has been made that health measures are directed toward "state medicine." Under lay leadership, "state medicine" may be brought about, but under medical leadership it is very unlikely. "State medicine" is to be avoided because it will impede medical progress. As medical progress is responsible for preventive medicine, the public should be given to understand that in advocating "state medicine" it is "killing the goose that laid the golden egg."

Under proper leadership and with the unhampered cooperation of the best medical minds, preventive medicine offers one of the greatest boons that civilization has yet known.

#### PREVENTIVE MEDICINE IN THE MEDICAL CURRICULUM

The problem of establishing satisfactory working relations between agents of the various health interests and medical practitioners already in the field is beyond the medical school; the function of preparing the future physician to fit in with the work is very definitely a part of its duty. Pritchett<sup>5</sup> has said, "The medical profession is rooted in medical education and will not rise higher than the soil in which it grows." The duty of the medical school is clear: it should establish adequate courses at once, and not wait to have them forced upon it. In Pennsylvania, steps have already been taken to include a group of questions in public health and preventive medicine among examinations for medical license. One set of "possible questions" has already been distributed by the board, and I am told that a second, much more comprehensive one is in preparation.

Medical instruction in public health may be directed toward any one of several objectives and, therefore, must vary accordingly. If it is the aim to prepare men for a public health career, the problem is a very different one from the instruction of medical men to practice preventive medicine as a part of their general work. If postgraduate work is under consideration, it must first be determined whether a complete course leading to a degree is to be undertaken, or whether a short course

planned to bring practitioners up to date in health measures is the object.

If the idea is to prepare medical health officers, measures for establishing a school of public health must be taken; several such schools have already been founded. These require a five year course for the combined degree of M.D. and Dr.P.H. (Doctor of Public Health). They offer postgraduate courses for medical men leading to the degree of Dr.P.H., and a four year course for health officers, leading simply to the degree of B.P.H. The courses of study given at such schools include bacteriology, hygiene, entomology, sanitary chemistry, sanitary engineering, industrial toxicology, industrial physiology, dietetics, sanitary surveys, epidemiology, vital statistics, health laws and legislation, public health administration, industrial hygiene, child hygiene, mental hygiene, public school medicine, health education and physical education. In order to compete with the schools already established, a large faculty consisting of many experts will be required. At a meeting held in Washington in March, 1922, the education of the "Health Officer of the Future" was discussed at great length. It came out in the discussion that there is no immediate need for more schools of public health because the salary available for health officers at the present time is insufficient to encourage many students to undertake the complete courses.

The problem under discussion does not deal with public health schools, or at present with postgraduate courses, but with the undergraduate instruction of the student in the medical school. We must first decide what parts of a general public health education are essential to good medical practice and consistent with the teaching facilities of the school; we must find a suitable amount of time and a place for the course in the curriculum; we must arrange for a certain amount of expert instruction in some of the more highly specialized subdivisions, and we must adopt some means of keeping the "preventive idea" constantly before the student.

Precedent for the amount of ground to be covered is naturally found in the curriculums of schools that are giving adequate courses in preventive medicine. There is considerable difference of opinion, however, about the amount of time that should be devoted to teaching health habits, conduction of health examinations for incipient disease, etc. Only a few days ago a physician asked, "What is the use of teaching health habits, when nobody can be made to change his habits, and everybody does just what he pleases, anyway?" Many medical men feel the same way, and a word on the subject may not be amiss.

Education in health habits has been most successful in teaching the children to form good health habits instead of bad ones. A man's willingness to adopt and acquire health habits undoubtedly depends on how much he has come to be dependent on unhealthy habits, how much self denial he must exert, how difficult of execution the health measure is, and just how badly he dreads the disease he hopes to prevent. One would not expect success in teaching abstinence to a chronic drunkard, but one does have success in teaching dietetic temperance to the average chronic nephritis patient with high blood pressure. Inability to educate men out of promiscuous venereal habits is the only excuse for venereal prophylaxis. Prophylaxis is admittedly a much less efficient preventive measure than continence, but it has actually accomplished a great deal when an attempt to enforce continence would have failed com-

5. Pritchett, H. S.: Relation of Medical Education to Medical Progress, New York M. J. 115:1 (Jan. 4) 1922.



pletely. Medical men are often inclined to feel a little ahead of dentists, but there are few better examples of preventive medicine than that of dental prophylaxis. The ease with which the public has been taught to consult the dentist for prophylaxis once or twice a year is remarkable. A short time ago I asked a successful dentist how much dental prophylaxis has decreased his practice; he replied that it had not decreased it, but had actually increased it and made his work much more pleasant. He stated that now he saw pyorrhea and dental caries in the early stages, and almost never saw the "rotten mouths" that were so common in his practice a few years ago. The time is not far away when routine health examinations will be as common as dental prophylaxis is today. There may be a tendency for routinization in dispensary work, but when a physician has one of the families of his own clientele educated up to annual health examinations he will be as careful as possible in every step of his examination; his success will depend on it.

*The Time and Place for Hygiene and Preventive Medicine in the Curriculum.*—The report of the Curriculum Committee at the thirty-second annual meeting of the Association of American Medical Colleges in 1922 advised the increase in the number of hours allotted to hygiene and preventive medicine from fifty-four to 170. The prospect of the addition of approximately 100 more hours for this purpose raises the question of an available source for that time. The clinical branches are anxious to increase rather than decrease the amount of time assigned to them so that they may be left out of the consideration. The suggestion has been made that the time be taken from the laboratory courses. There are strong arguments against any further reductions in bacteriology, immunology and pathology. In the opening lecture in bacteriology and pathology this year I tried to bring before the students a conception of the practical benefits to be derived from the long grind through the laboratory subjects. The point was first made that the student often gets impatient because he does not see the connection between the work and clinical medicine. It was pointed out to him not only that he was benefited by gaining an intimate knowledge of the causes, processes and morbid changes of disease and the recuperating powers of the tissues, but also that he was acquiring, by application, the habits of observation and analysis, familiarizing himself with the great principles of research, and most of all gaining unshakable confidence in the correctness of his knowledge. For example, the student who has had the experience of watching the development of tuberculosis in an animal following inoculation is not easily influenced by statements coming from disciples of cults which assert that tuberculosis is a "state of mind" and that the tubercle bacillus is a "myth," while to the man who has not had the training the statement may not seem so unreasonable. Rather than rob any of the present courses of their allotted time, I think it would be better to encroach further on the students' vacant time. For several years educational committees generally have been urgently demanding that medical schools decrease the number of hours required of students so that they may have time to think for themselves. As a rest and relaxation measure, the idea may be a good one, though its value as a means of developing the average student's intellect is questionable. In a recent communication, Dr. James Ewing expressed my feeling in the matter much better

than I have been able to do. He said: "Personally, I am not in favor of reducing the medical curriculum and allowing the students more time to think for themselves. I am much more concerned that they should have something proper about which to think."

Not only additional time, but also a suitable place for the course must be found. Hygiene and preventive medicine are very intimately associated, though they are not inseparable. Perhaps the most practical plan would provide for teaching hygiene in the sophomore year, and for giving preventive medicine proper in one of the last two years. During the second year the student's attention is focused on laboratory subjects: Bacteriology, and the preparation of vaccines and of other protective biologic products are fresh in his mind, and he has acquired an excellent foundation for knowledge of what constitutes good food, water, etc. He has had little or no clinical work up to that time, and hygiene furnishes added interest as a practical application of his scientific training. On the other hand, the best results in teaching the control of infectious diseases can be had only in the later years after the student has had clinical experience with such diseases and can appreciate the value of preventing them. In the University of Pittsburgh we are planning to give didactic and laboratory instruction in hygiene in the second year, and a lecture course in preventive medicine in the third year. In the course in hygiene, the influences on health and disease of food, water, air, soil and sewage disposal should be considered together with the preparation of protective biologic products, detection of carriers, the rôle of insects in the spread of disease, vital statistics, etc. The instruction in preventive medicine should be far more comprehensive. A centralized course should first be mapped out to include vaccine prophylaxis, control of carriers, the relation of the practitioner to the local health administration, effects of heredity, eugenics, and brief discussions of industrial hygiene, mental hygiene, health education, child welfare movements, etc. Secondly, arrangements should be made with the other departments to devote some time within their own courses to a discussion of preventive methods useful in their own subjects and which are too specialized or too technical for general discussion in the centralized course. Finally, the cooperation of the entire faculty should be obtained in keeping the "preventive idea" constantly before the student.

The latter plan was suggested by a statement made by Dodson,<sup>6</sup> who said: "Larger emphasis should be placed on prevention by every department in the school. When the instructor demonstrates typhoid, he should ask, 'Why did this patient get typhoid?' If the whole clinical curriculum presented subjects from the side of prevention, as well as from cure, much could be accomplished in a short time."

Acting on this suggestion, the Department of Hygiene of the University of Pittsburgh has solicited the help of every teacher in every department in the school in teaching preventive medicine. Some departments have greater opportunities for emphasizing prophylaxis than others. The department of medicine has perhaps the widest range of subjects. With every acute infectious disease, the means of spread should be discussed, the kinds and relative amounts of immunity afforded should be emphasized, and the means of controlling the spread to other persons mentioned. Much

6. Dodson, J. M.: Discussion of a paper at conference on the Education of the Future Health Officer, Washington, March, 1922.



of this is repetition, but it serves to fix the facts in the students' minds. Then there are the more technical subjects which fall under specialized instruction in medicine. For example, the discussion of prophylactic heart clinics, the technic for health examinations as well as those made purely for diagnostic purposes, and the hygiene of diet in some of the diseases of altered metabolism. A man said recently that he had known graduates of some of the best medical schools who could discuss metabolism very scientifically, but he had yet to find a single one who, without additional instruction, could make out an efficient economic diet for a poor family.

An excellent example of the complete plan for cooperative instruction in prevention is furnished by the subject of mental hygiene. The term is something of a scarehead, though the teaching can be carried out well in all three phases. One phase is that which the student would get in the centralized course in preventive medicine and which would include the effects on the mind of heredity, alcohol, other poisons, syphilis, emigration, etc., and a discussion of what various agencies are doing to improve conditions among mental risks. Another phase, the technical one, should be handled by the department of neurology because they are better prepared to teach it than any one else. In this division the student should be taught the forms of insanity in which preventive measures have had some success, the care of the insane, methods for making asylums more habitable, something about the influence of occupation on the insane mind, the effects of hydrotherapy, etc., and perhaps more important than many other things, what steps should be taken in the disposition and care of an obviously insane person who is at liberty in the community. The third phase, that of placing the sick or injured persons at rest and the importance of so doing, belongs in every field of medicine and surgery. *Students should be taught not to ignore anything which offers an opportunity of making the patient more comfortable.*

Dershimer<sup>7</sup> recently mentioned an instructive case in point: A very nervous woman, between 35 and 40 years of age, developed sudden abdominal pains and made her own diagnosis of stone in the kidney. Morphine and atropin in fair doses failed to lessen the pain, and there was no sediment or albumin, and no blood in the urine. Careful history elicited the fact that she had helped to take care of a patient with stone in the ureter a short time before. Further examination demonstrated that the symptoms of stone were limited to those which the patient had observed in the other case. The patient asked that a chiropractor be called, because her mother had been helped by one. She said that the chiropractor had made a sudden and very forcible pressure at a point on the abdomen, which she indicated. Dr. Dershimer replied that he could accomplish a similar cure by the same means, which he proceeded to do, and the pain stopped at once. After a few days the patient was carefully informed of the imaginary nature of her pains, and up to the time of the report had had no further attacks. Dershimer further reported that formerly his company had paid out more compensation for back injuries than for any other kind of accident, and that for several years past they had been paying special attention to all types of back injuries. The slightest injury is roentgenographed at once, the patient

is sent home in the company's car and placed at rest, and is instructed to report for reexamination next day if he feels like it, and to call the company physician if he does not. As a result, compensation for back injuries has been limited to the severe and unquestionable ones.

The instructor should find a lesson in such examples and never fail to impress on a student the necessity of going into the mental side of every case and of allaying suspicion and uneasiness in the patient's mind. When he does so he is teaching mental hygiene. Christian science, chiropractic, practical psychology and the like owe much of their success to the carelessness of the average physician and to his overlooking the mental side of his patient.

It is not necessary to go into many further examples, though I should like to mention some possibilities; for example, venereal disease prevention should be discussed during the courses in gynecology, obstetrics, skin diseases and genito-urinary surgery; prevention of blindness, in ophthalmology and obstetrics; child welfare work, in obstetrics and pediatrics; cancer prevention, in medicine, surgery, gynecology and the specialties; fatigue, in physiology; dietetics, in metabolism and medicine; prevention of general infection, tetanus, anthrax, etc., in surgery, and so on indefinitely.

It is well recognized that these matters are receiving consideration at present, and I do not mean to insinuate that they are not. I do mean that still more emphasis should be placed on them, and that the instruction should be more pointed, namely, that both the instructor and the student should be conscious, at the time, that preventive medicine is being discussed. No matter what the department, the point should be made that the specific measure is a preventive one. The teaching courses in all departments should be reviewed thoroughly, with the object of stressing successful preventive methods for the benefit of the students.

The teaching should be carried out with a view to informing the student of the best preventive measures available, and should be directed toward preparing him for leadership in progressive health movements. If the public is convinced that the physician and student are doing everything within their power to decrease sickness and prolong life, there is no danger that it will not continue to extend to them the protection and support they have always enjoyed.

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**Creosote Oil as a Mosquito Repellent.**—In a study of rural malaria in Yazoo County, Miss., by the U. S. Public Health Service, a marked difference in the number of anopheline mosquitoes found under railroad bridges and the number found under county road bridges, only a few yards away, was noted. Investigation disclosed that the railroad bridge timbers had been treated with creosote oil before being used whereas the county bridge timbers had not been so treated, and that by actual count the number of mosquitoes resting under the former was very small in comparison to the number resting under the county bridges. To continue the observation, a series of twenty-five houses in different sections of the county was selected, and an application of creosote oil to the rooms—one gallon to 420 square feet—was made. These experiments indicated that creosote oil is a noticeable repellent of anopheline mosquitoes, and that it was still effective ten weeks after application. The total duration of its effectiveness is still to be determined. Coogle (*Pub. Health Rep.*, March 9, 1923), who conducted the investigation, concludes that creosote oil as a mosquito repellent is particularly applicable to and desirable for use in houses of poor construction where screening and other antimosquito measures cannot be effectively employed.

7. Dershimer, F. W.: Practical Mental Hygiene in Industry, read before Industrial Hygiene Section, American Public Health Association, Cleveland, Oct. 17, 1922.



THE MORTALITY RATE FOLLOWING  
OPERATIONS ON THE THYROID  
GLAND\*

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The diseases of the thyroid, such as exophthalmic goiter, and adenomatous goiter with hyperthyroidism have lost their former place among serious and fatal surgical ailments. The present great reduction in surgical mortality demonstrates the benefit of medical and surgical team work in the diagnosis and classification of thyroid diseases. Medical treatment is curative or beneficial in certain forms of goiter. In types of the disease formerly so fatal if untreated, and also having a high mortality surgically, improvement may be obtained by proper care. The actual dangers from avoidable surgical accidents and complications are now better recognized. This is all the result of the greater attention, both medical and surgical, paid to diseases of the thyroid. Any discussion or argument, any fad, medical or surgical, which will lead to more care, will lower mortality, as a by-product, so to speak, and therefore is justified by the results.

In order properly to evaluate the significance of the surgical mortality statistics following operations for disease of the thyroid gland, many considerations must be borne in mind, the foremost of which are the method of classification of the various thyroid diseases, and the care and accuracy with which individual cases are diagnosed and assigned to such classification. The general custom of grouping all diseases of the thyroid together, and of determining the mortality rate on such a basis is more or less valueless, and it is even worse to base the rate on the total number of operations. Failure to describe the method of computation is misleading, and results in erroneous conclusions. For example, during the past year, 1,983 operations were performed on the thyroid gland at the Mayo Clinic, with only nineteen "surgical deaths," a mortality rate of 0.96 per cent. Such data, however, as will be seen from the following discussion, not only fail to reveal the real truth, but conceal facts which, when brought out, prove to be of great value.

The clinical classification of thyroid disease used in the present report is that developed by Plummer, in which the structural, functional and etiologic characteristics are correlated on fundamental grounds into nine distinct diseases: (1) diffuse colloid goiter, (2) adenomatous goiter without hyperthyroidism, (3) adenomatous goiter with hyperthyroidism, (4) exophthalmic goiter, (5) myxedema, (6) cretinism, (7) myxedema of childhood, (8) thyroiditis and (9) malignancy.

Of the foregoing types of disease, only the first four need be considered from the point of view of mortality, because at least 99 per cent. of all operations on the thyroid gland are performed on patients who have one of these four diseases. Since in the series there were relatively few cases of thyroiditis and malignancy, and since no deaths occurred in these cases, they will not be considered in this discussion. Myxedema and cretinism are, of course, nonsurgical conditions.

The accuracy of the assignment of each case to its correct classification before operation is aided by the

determination of the basal metabolic rate, and is verified after operation by pathologic examination of the thyroid tissue removed. Accepting the pathologic examination as correct, the clinical diagnosis has been found to be in agreement therewith in approximately 94 per cent. of the cases.

## DIFFUSE COLLOID GOITER

A diffuse symmetric enlargement of the thyroid gland, characterized pathologically by an excess of colloid in the acini and unassociated with symptoms of hyperthyroidism, is designated clinically as "diffuse colloid goiter." Except in very rare instances of extreme enlargement it is not a surgical condition; interest in it, surgically, lies in the fact that two errors of diagnosis are often committed. First and most important is an erroneous diagnosis of mild exophthalmic goiter in a young person in whom a colloid goiter is accidentally and independently associated with psychoneurosis, effort syndrome, or disordered action of the heart. That the condition of these patients may often be diagnosed as mild exophthalmic goiter is borne out by the fact that many reports on the pathology of exophthalmic goiter emphasize the finding of a diffuse colloid deposit without diffuse parenchymatous hypertrophy. Most of these errors can be eliminated by the accurate determination of the basal metabolic rate which, in this group, is normal, or below normal, while in exophthalmic goiter the metabolism is distinctly elevated. It is evident that in proportion to the inclusion of cases of nonhyperthyroid, or simple goiter, in the classification of exophthalmic goiter, the mortality of that disease will be apparently decreased. This point has been emphasized, not because it is of academic interest, but because the number of such cases that are erroneously diagnosed as exophthalmic goiter is large. Not one patient with diffuse colloid goiter and a normal basal metabolic rate was operated on at the Mayo Clinic during the past year. Another common mistake is to designate a large colloid adenomatous goiter simply as colloid goiter, thus confusing a disease which is often surgical with a disease that is but rarely surgical.

## ADENOMATOUS GOITER WITHOUT HYPERTHYROIDISM

An adenoma, or an adenomatous enlargement of the thyroid gland which is not causing constitutional symptoms and is not altering the concentration or character of thyroxin in the body, is classified as "adenomatous goiter without hyperthyroidism." This group includes those cases of colloid adenomatous enlargement already referred to as being often erroneously designated as colloid goiters. Large numbers of cases of adenomatous goiter pass through the Mayo Clinic each year for which operation is unnecessary, and these patients are not, therefore, operated on. One patient with adenomatous goiter without hyperthyroidism, but with respiratory obstruction, who had had a tracheotomy before coming to the clinic, died from associated status lymphaticus before thyroidectomy could be performed. During 1922, thyroidectomy was performed on 663 patients with adenomatous goiter without hyperthyroidism with only one postoperative death, making a surgical mortality by case of 0.15 per cent.

Deaths in nonhyperthyroid conditions must be accepted by the surgeon as potentially preventable by improved surgical technic. The occurrence of postoperative pulmonary infection is decreased by avoiding even temporary injury to the recurrent laryngeal nerve, and unnecessary handling, exposure and rotation of the trachea.

\* From the Mayo Clinic.



## ADENOMATOUS GOITER WITH HYPERTHYROIDISM

Adenomatous goiter with hyperthyroidism may be defined as a constitutional disease due to the presence in the thyroid gland of adenomatous tissue which, by maintaining an abnormally high and unregulated concentration of thyroxin in the body, causes an increased basal metabolic rate with the resulting secondary manifestations. The disease differs from exophthalmic goiter, and it is important surgically to recognize this fact, because patients even with intense hyperthyroidism from adenomatous goiter almost never die from the acute, typical "thyroid crisis" so common in exophthalmic goiter. The mortality in this condition is, however, likely to vary considerably from year to year, depending largely on the accidental association of degenerative organic changes from the long duration of the hyperthyroidism in a patient in whom the technical procedures are difficult, owing to the location of the adenomatous masses in relation to the thoracic strait and the recurrent laryngeal nerve. Likewise, the common occurrence of this disease in older and debilitated persons affects the death rate. Finally, the operative risk, whatever it may be, must usually be definitely accepted quite promptly after the patient comes under observation. Unlike exophthalmic goiter, the fluctuations in the intensity of the disease are less marked, and as soon as cardiac decompensation, if present, is relieved, little else can be done to improve the operative risk. Preliminary procedures, such as ligations, are so rarely beneficial that they are seldom performed.

During the year 1922, 201 patients with adenomatous goiter with hyperthyroidism came to thyroidectomy; there were seven postoperative deaths, or a surgical mortality of 3.48 per cent. Besides these, one patient with similar trouble died from myocardial degeneration and decompensation without operation. The apparent mortality rate can be readily decreased by including in this group patients with adenomatous goiter, uncomplicated by hyperthyroidism. In the series of cases referred to here, no case was considered as hyperthyroid unless there was an increase in the basal metabolic rate; all cases in which the basal metabolism was normal were classified as "adenomatous goiter without hyperthyroidism." If the mortality rate were determined for all cases of adenomatous goiter, including those with and without hyperthyroidism, it would be 0.93 per cent., or eight deaths in 864 cases. But a mortality rate determined in this manner, which unfortunately is so often the custom, is of no practical or scientific value, and is as absurd as if the mortality rate after appendectomies performed for chronic appendicitis, or between attacks, as well as for acute suppurative appendicitis with peritonitis was quoted as representing the mortality rate for the latter condition. On careful pathologic examination of the tissue removed from patients in this group with adenomatous goiter with hyperthyroidism, who died, diffuse parenchymatous hypertrophy was not found, thereby confirming within a negligible error the clinical diagnosis of adenomatous goiter with hyperthyroidism, as opposed to exophthalmic goiter.

## EXOPHTHALMIC GOITER

Exophthalmic goiter is a constitutional disease, apparently due to an excessive, probably an abnormal, secretion of an enlarged thyroid gland showing pathologically diffuse, parenchymatous hypertrophy and hyperplasia. It is characterized by an increased basal metabolic rate with the resulting secondary manifesta-

tions, by a peculiar nervous syndrome and usually exophthalmos, and by a tendency to gastro-intestinal crises of vomiting and diarrhea. The cause of the altered pathologic condition and activity of the thyroid gland is not known. The most disturbing factor from the surgical point of view is the ease and unexpectedness with which a so-called postoperative acute thyroid crisis is initiated, to which the patient often succumbs in from eighteen to thirty-six hours. The average natural course of the disease is not known; that many patients get well spontaneously is undoubted; that there is an appreciable "medical mortality" is equally true.

There were only eleven deaths following operation; all the patients who were given any type of surgical treatment for the thyroid gland during their present visit, and who died from any cause while under immediate observation in Rochester, are considered to have died from surgery. In all, there were 1,093 operations, giving a mortality based on the number of operations of practically 1 per cent. (1.005 per cent.). However, this percentage is distinctly misleading, as multiple operations, such as preliminary hot water injections and ligations, were performed on many patients in a condition too serious for thyroidectomy. That deaths followed these several procedures was due to bad judgment. That the mortality was low showed an average of good judgment in which surgical preparation and accomplishment must be included. The several procedures represent the gravity of the patient's condition, and each has its definite mortality.

During 1922, ligations or thyroidectomy were performed on 633 patients with exophthalmic goiter. On this basis, the mortality rate from eleven deaths is 1.74 per cent. While this is a true mortality rate, so far as it can be determined for this group of patients at the present time, yet it must be emphasized that some of the patients will come to further operative procedures during the next year, and that surgical procedures were started on certain others during the previous year. Therefore, this percentage cannot be considered as representing a final mortality rate by cases. Each year carries its average; yet, dividing the total number of deaths (eleven), by the total number of new patients with exophthalmic goiter coming to the Mayo Clinic during the year (491), which gives a mortality rate of 2.24 per cent., is fully as much in error in the opposite direction because a risk was accepted in 633 cases. The true mortality by cases, therefore, is less than 2.2 per cent., and greater than 1.7 per cent.; the percentage most exactly representing the true mortality by cases, for a single year for a disease necessitating multiple operations at varying intervals, is the average of the two extremes. On this basis the surgical mortality, by case, for exophthalmic goiter is slightly less than 2 per cent. (1.99 per cent.).

Six of the eleven "surgical deaths" followed either ligations (four deaths), or injection of hot water into the gland (one death), or the subcutaneous injection of procain, preparatory to further operative procedures which were abandoned (one death, not to be credited to procain, but to hyperthyroid crisis). It is beyond the scope of this paper to discuss the cause of death. This phase of the subject will be presented elsewhere; but as all deaths from whatever cause are included, it may be said here that in at least four of the eleven "surgical deaths" the operation was not the primary factor.

The general clinical improvement in the condition of the patient that occurs in the two to three months following ligation is on the average so definite that in all



probability the mortality rate from thyroidectomy is sufficiently reduced to decrease the mortality calculated by cases below what it would have been if thyroidectomy had been undertaken immediately; on this assumption the mortality rate for ligations must be accepted as a legitimate individual risk which results in the end in saving life.

After all, the safety of thyroidectomy is the point of paramount importance, as it is this procedure which places the patient in a relatively safe condition, even if it does not bring about an immediate complete cure. During the year, 523 partial thyroidectomies were performed on 521 patients with true exophthalmic goiter, with five deaths, which gives a surgical mortality, by case, for thyroidectomy of less than 1 per cent. (0.96 per cent.).

What are the factors that have permitted a reduction in the surgical case mortality to less than 2 per cent. in cases of exophthalmic goiter, and the reduction in the mortality from thyroidectomy in this disease to less than 1 per cent. (which was the mortality rate for 1921 in cases of nonhyperthyroid adenomatous goiter), and finally reduction of the mortality rate in the latter condition during 1922 to less than one sixth of 1 per cent. (0.15 per cent.)? The influence of the administration of iodine on this reduction will shortly be reported in detail by Plummer, and the details of the surgical technique, by Pemberton and Sistrunk. Suffice it to say here that the reduction in mortality is due to the close cooperation of the medical, laboratory and surgical services in seeking methods of avoiding or decreasing the frequency and severity of the so-called postoperative acute thyroid crisis.

#### SUMMARY

At the Mayo Clinic, during the year 1922, there were nineteen deaths following 1,983 operations on 1,497 patients for diseases of the thyroid gland, giving an operative mortality rate of 0.96 per cent. Such percentages, which are the common method of presenting statistics on goiter, not only fail to reveal the real truth, but conceal facts which, when brought out by a more detailed study, prove to be of great value. Statistics on surgery for goiter should be carefully and accurately analyzed, and the results presented for each disease on the basis of the number of cases.

An accurate basal metabolic rate is an index of the intensity of the disease in both exophthalmic goiter and adenomatous goiter with hyperthyroidism, and, therefore, in conjunction with other factors is of help in selecting the best time and type of surgical procedure. The basal metabolism is of even more importance as an aid in the establishment of a correct differential diagnosis of the various thyroid diseases, and as a result of its use many unnecessary and sometimes harmful operations are avoided.

In this report all patients who died while under immediate observation in Rochester after surgical intervention on the thyroid gland during their present visit are classified as having died from surgical procedures, regardless of the cause of death. The surgical mortality by case, according to Plummer's classification of thyroid diseases, is: adenomatous goiter without hyperthyroidism, 0.15 per cent.; adenomatous goiter with hyperthyroidism, 3.48 per cent., and exophthalmic goiter, 1.99 per cent. The mortality rate for thyroidectomy in exophthalmic goiter is 0.96 per cent. The surgical mortality represents the combined work of eight surgeons.

## IMPLANTATION OF BILIARY FISTULA INTO DUODENUM

### A NEW METHOD OF TREATMENT

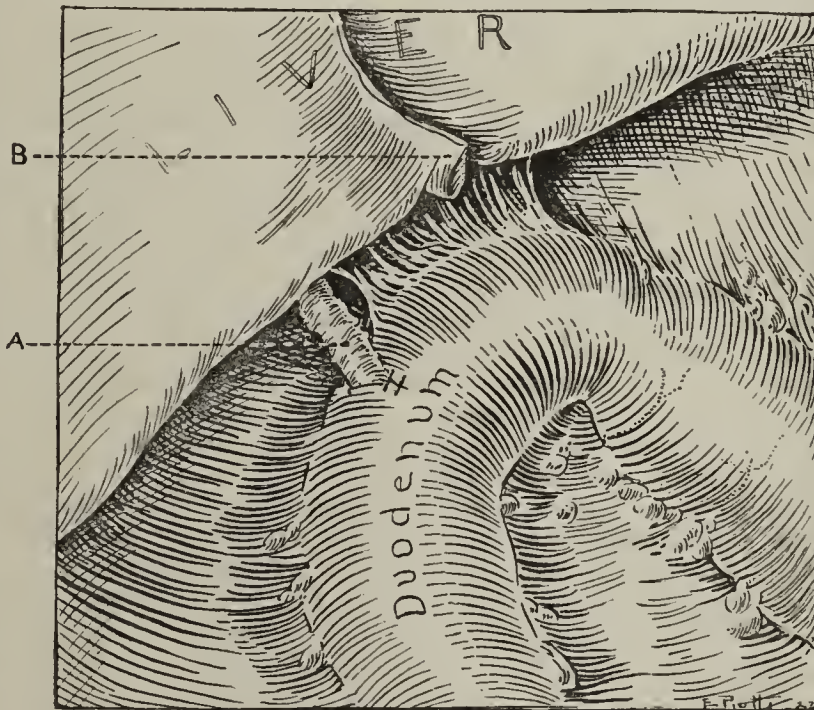
FRANK H. LAHEY, M.D.

BOSTON

The two cases here reported are published because it appears that Dr. Hugh Williams' case is the first successful transplantation into the duodenum of a common duct fistula; that my case is the second, and that the method is of sufficient simplicity and value to be included in the group of operative procedures available in the treatment of common duct fistula.

#### REPORT OF CASES

CASE 1.—G. E. M., aged 5 years, white, was operated on, Sept. 3, 1912, at Massachusetts General Hospital. The pre-operative diagnosis was embryonic tumor of the right kidney. A large retroperitoneal cyst was found but not identified. It was sutured to the abdominal wall. A section of the cyst



Implantation of fistulous tract into duodenum without dissection of tract from liver bed: A, fistulous tract implanted in duodenum; B, falciform ligament.

submitted to the pathologist was reported as suggestive of chronic inflammation of the gallbladder. The patient was discharged from the hospital, November 23, with a diagnosis of cyst of the biliary tract.

He reentered the hospital, May 12, 1913, with the statement that six weeks previous to admission the sinus backed up and became puffy, and the bowels were constipated. Since this time, the wound has backed up about every week with the same symptoms. Four days before admission, the patient began to complain of lumbar pain. The temperature was 103 F., and clots of "black stuff" were vomited. He was brought to the accident room, at 8:30 p. m., where a black stool was passed. Physical examination at this time showed a sinus in the middle of the scar of the old operation, draining bile freely. Over the left knee, there were three areas of discoloration. May 9, a blood transfusion was made by Dr. Vincent. The patient was seen in consultation by Dr. Hugh Williams, who advised operation on the biliary sinus. At this time, the stools were clay colored.

The condition improved up to June 25, when an operation for persistent and complete biliary fistula was performed by Dr. Hugh Williams. A circular incision was made about the old sinus, the abdomen was opened by excising the old scar 3 inches (7.5 cm.), the sinus being clamped. Adhesions on being separated revealed an hour-glass gallbladder about the size and shape of a large double peanut, with a cystic



duct about  $1\frac{1}{4}$  inches (3.2 cm.) below the abdominal wall. The gallbladder and cystic duct were removed, and the stump of the duct was tied with fine silk. The adhesions were further separated, and the fistulous tract was found to be continuous with the common duct. A probe could be easily passed down the fistula and up the common duct to the hepatic. The duodenum was adjacent and normal. There was a prolongation of the common duct to the duodenum, but it could not be probed, apparently being obliterated. An intestinal clamp was then applied longitudinally to the duodenum, but opened for one-quarter inch (6 mm.) and anastomosis was done between the fistulous tract and the intestine, the end of the tract being sewed into the side of the intestine with an inner layer of No. 0 plain catgut and an outer layer of continuous silk. A wick was introduced into the side of the suture, and the wound was closed. There was excellent recovery from ether anesthesia.

June 26, the stools showed bile.

June 30, the wick was removed.

July 12, the patient was able to sit up in a chair.

Aug. 4, he was discharged in splendid condition. The wound was dry and solid.

Jan. 16, 1923, Dr. Williams reported that the patient had been seen recently and was entirely well and had been so since the operation.

CASE 2.—Mr. G. G., aged 28, was operated on by me for cholecystitis and pancreatitis, Aug. 4, 1922, at the New England Baptist Hospital. The gallbladder was removed; the common duct carefully isolated, and opened longitudinally, and a drain inserted down to the pancreas. The tube was removed from the common duct at the end of fourteen days, following which all bile was discharged through the sinus. The stools became clay colored and remained so up to the time of the second operation, two and one-half months after the first. Since we were certain that the common duct was not cut off or injured at the first operation, it seemed probable that the persistence of the fistula was the result either of an obliteration or stricture of the common duct. Operation for the restoration of the biliary discharge into the intestinal tract was, therefore, undertaken, October 19.

Having in mind the possibility of considerable difficulty in finding and anastomosing the remaining segment of the common or the hepatic duct, I decided to dissect and preserve the fistulous bile tract in order that I might have it as a reserve to implant into the duodenum if necessary. An incision was therefore made around the fistulous tract and it was carefully cored out down to the under surface of the liver, care being taken to leave a thick wall of tissue about the tract.

The abdomen was opened, and when the common and hepatic duct area was exposed, it was found to be involved in such a mass of indurated tissue that I decided on immediate implantation of the fistula into the adjacent duodenum as the first procedure to be attempted. If this procedure failed, an attempt to find and anastomose the duct could then be made at a later operation. In the dissection of the fistula that ran along the inferior surface of the liver, care was taken not to free it from its liver attachment. The part that had extended from the liver edge to the abdominal wall was implanted in the duodenum, after the button of skin only had been excised. The dissected fistula, now represented by a tube of tissue, reached easily to the adjacent duodenum. A small opening was made in that structure by piercing it on the outer side with a sharp pointed hemostat. The opening was dilated until it would take a segment of No. 16 rubber catheter about 1 inch (2.5 cm.) long, about one half of this segment projecting into the duodenum. This was sutured to the wall of the duodenum and its external end was passed up into the open end of the fistulous tract, the end of which was brought down and sutured with interrupted No. 0 chromic catgut to the opening in the duodenum, and this anastomosis buried by inversion in the wall of the duodenum as with an appendix stump. The free portion of fistulous tract was then covered by omentum, as an additional precaution, and the abdomen was closed without drainage.

The wound healed soundly without leakage of bile, the stools being at once normally colored. The patient has pro-

gressed to date (three and one-half months after operation), with normal stools and no evidence of jaundice.

#### COMMENT

In addition to the foregoing procedure, the methods employed in the repair of permanent biliary fistula, in which the lower end of the duct is cut or obliterated, are: 1. Anastomosis of the end of the duct to the duodenum, jejunum or stomach. 2. Bridging of the gap between the end of the duct and the duodenum or stomach by means of a rubber tube, in some cases covered by attached omental grafts, in others entirely uncovered. 3. The fashioning of a new duct by means of a flap of gastric or intestinal wall and the anastomosis of this newly formed tube to the stump of the duct. Several successful operations by all these methods have been reported.

A search of the literature reveals the report of but one case similar to the two cases reported here. Von Stubenrauch<sup>1</sup> in 1906 reported an implantation of a persistent biliary fistula two months after an operation for drainage of the gallbladder and common duct for pancreatitis. In this case, the fistulous tract, 5 cm. in length, was introduced through the pylorus into the duodenum, and because of the resultant narrowing of the duodenum, an antecolic gastro-enterostomy was done. The operation was unsuccessful because of necrosis of the tract, and later a new duct was constructed from a flap of gastroduodenal wall.

The procedure undertaken in my case seemed logical to me for the reason that if the secretory pressure of bile is sufficient to keep an external biliary fistula permanently open, and this is an established fact, there seems no reason why it should not be sufficient to keep an internal biliary fistula open. If such is the case, as seems possible from Dr. Williams' and my cases, transplantation of the fistulous tract is a much simpler operation than the methods used hitherto, and still permits of their employment should this method prove a failure.

Priority as to the conception and successful employment of this method undoubtedly belongs to Dr. Hugh Williams.<sup>2</sup>

638 Beacon Street.

1. Von Stubenrauch: Chirurgical Congress, Deutsch. Gesellsch. f. Chir. 35: 39, 1906.

2. While a guest at the joint meeting of the New York and Philadelphia Surgical Societies, held at Mount Sinai Hospital, New York, Jan. 23, 1923, I heard Dr. Howard Lillenthal report, as a new method of treating biliary fistula, the implantation of a common duct fistula into the stomach, at which time the two cases here published were reported in the discussion. As this paper is being written, I have another case of biliary fistula (common duct) which has been transplanted into the duodenum by the same technic. All sutures are now out, and the stools are well colored with bile.

**Mentality of Foreign and Native Born Whites Compared.**—Statistics compiled by Prof. H. H. Laughlin, Sc.D., assistant of the psychopathic laboratory of the Chicago Municipal Court, and assistant director of the Carnegie Research Bureau, Cold Springs Harbor, N. Y., and sent to Washington, D. C., show that of a foreign born population of 13,920,692 in 1920, about 8,500,000 rated below the average in fundamental intelligence. Of the native born population of 81,108,000, about 39,800,000 were below the average mentally. Among the native white population the number below average amounted to 49 per cent., and among the foreign born to 62 per cent. In the two lowest grades, the disparity was even greater. In a study of the feeble-minded and insane, the statistics show that the native white population, with both parents foreign born, has 65 per cent. more than its expected ratio of feeble-minded. In the group in which one parent was foreign born and one native born, the percentage of feeble-minded was 90 per cent. above the expected average.



THE DISCOVERER OF THE MODE OF  
PRODUCTION OF BREATH SOUNDS

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In an article recently published in *THE JOURNAL*, I<sup>1</sup> reported the discovery that it was possible to abolish all breath sounds as heard over the larynx and the chest by a voluntary separation of the vocal cords. The discovery was entirely original on my part, yet it seemed incredible that so simple and easy a procedure as the voluntary widening of the rima glottidis should never have occurred to any one until the present time. A search through the literature now shows that I had been anticipated by nearly a century.

At the session of the Académie royale de médecine, June 10, 1834, Beau<sup>2</sup> described a case in which he heard a very marked bronchial souffle at the level of the subspinous fossa, in a patient with "effusion of the right pleura" who was breathing noisily. Wishing to know how much the noise of respiration contributed to produce the very loud bronchial breathing, he asked the patient to make less noise, but without changing the rhythm or depth of his breathing. It was then noted that the "tubal souffle" diminished in the same proportion as the respiratory sound in the throat. "I then asked," he says, "whether it would not be possible for him to breathe without making the least sound, and he succeeded in doing so after a few attempts, opening his mouth widely. I auscultated again and heard nothing. During all of this time," Beau continues, "respiration had not lost its frequency, and the chest walls rose as rapidly and as amply as before the experiment." In the case of other patients with bronchial breathing, the experimenter obtained similar results. "With all I caused it (the bronchial souffle) to be suspended or diminished in suspending or diminishing the respiratory sound of the throat. From these facts I conclude that the tubal souffle is not the result of the mechanical passage of air through the bronchi but is the resounding (retentissement) of a sound in the throat, and that it consequently differs from bronchophony only because in the latter the form of resounding is more conspicuous and less articulate (articulée)."

Beau then proceeded to study cavernous respiration, reflecting that there is the same relation between the cavernous souffle and pectoriloquy as exists between bronchial breathing and bronchophony, "the cavernous souffle being the index and, as it were, the condition of a perfect pectoriloquy." Experiments with consumptives decided the question that was in his mind. "I recognized that the cavernous souffle, like the bronchial souffle, was immediately dependent on the respiratory sound of the throat."

"But where and how," Beau goes on to inquire, "is the guttural sound produced? I sought light on this question by observing on myself what took place in the interior of the buccal cavity when one breathes naturally in a manner such as to cause a slight sound." Before a mirror, Beau noted movements of the uvula, more marked when the sound was loud, and concluded that the sound was the result of the breaking of the column of inhaled and exhaled air against the anterior and posterior surface of the veil of the palate. "But

is this sound not modified and even often produced by the shock of the column of air against the walls of the nasal and buccal cavities and also against the brim of the glottis? I believe so firmly but I can affirm nothing positively in regard to this, my intention being less to explain the cause of the respiratory sound of the upper throat (arrière-bouche) than the influence that it has on the production of the respiratory sounds of the lung."

## BEAU'S EXPERIMENTS

Beau then very logically asked himself "whether, if tubal and cavernous souffle are the effect of the resounding of the guttural sound, it is not the same with the sounds of vesicular and tracheal breathing." To answer this question, he retired to a quiet place and experimented with the aid of a pupil. The following are the most important of the conclusions that he reached in these experiments: 1. When the throat sound is suspended (and one suspends it easily by an instinctive dilatation of the superior respiratory passages), the vesicular sound, the bronchial, tracheal and cavernous souffles no longer exist. Respiration, though silent, is performed as usual; and, if one did not feel under the ear the thoracic walls alternately rise and fall, one might believe that the individual no longer breathed. 2. If one suspends the guttural sound in one of the two respiratory movements, one hears no tracheal or vesicular sound in that one of the two movements that is not accompanied by the sound of the throat. 3. If one produces a sound with the lips so as to blow in expiration and to make a whistling sound in inspiration, one hears the same sound in the trachea and in the vesicles. 4. There are introduced into the mouth of the subjects a few sheets of paper rolled in the form of a tube, large enough so that its diameter corresponds with that of the lips widely opened. This tube is pushed on to the middle of the tongue and is held in the direction of the isthmus of the throat. If in this position the subject holds his breath after a deep inspiration and one seizes the moment to blow through the tube against the veil of the soft palate in a manner to imitate the natural sound of the throat, one hears on auscultation tracheal and vesicular sounds, as when respiration was in progress. A note here gives a word of caution. It is important that the subject refrain from closing the glottis after the inspiration, and that he feel the free entrance of air into the larynx, "for one can see that an interruption in the continuity of the respiratory passages must prevent the sound produced against the isthmus of the pharynx from resounding beyond the point of interruption."

As for the origin of the sounds of respiration, "every respiratory sound transmitted by auscultation (that is, the sounds as they reach our ears) is the result of the resonance of the guttural sound in the column of air that fills the bronchial tree. The shock that this column experiences against the isthmus of the pharynx, or the glottis, determines an oscillation which is communicated rapidly throughout its whole extent and to its least ramifications."

## ADVERSE OPINIONS

Such an attack on the accepted doctrine of the day naturally excited interest, and several writers assumed the rôle of defenders of Laënnec's theory. Of these, two will be mentioned. Raciborski's "Précis de diagnostic" was translated into English by Minturn Post and published in New York in 1839. Raciborski, after summarizing Beau's views, denies that a sound produced

1. Bushnell, G. E.: The Mode of Production of the So-Called Vesicular Murmur of Respiration, *J. A. M. A.* 77: 2104 (Dec. 31) 1921.

2. Beau, J. H. S.: Researches on the Cause of Respiratory Sounds Perceived by Means of Auscultation, *Arch. gén. de méd.* Series 11, 5, 1834.



by blowing against the soft palate is heard in the lungs, and, having denied this, appears to think that all of Beau's claims are satisfactorily disposed of. He apparently did not attempt to repeat Beau's fundamental experiment, "the dilatation of the superior air passages."

This was done, however, by William Stokes, who discusses Beau's experiments in his "Diseases of the Chest," published in 1839. He states that Beau's theory is that the air, striking against the fauces and pharynx, causes vibrations that are communicated downward through the larynx and the trachea. Beau holds, he says, that the mere expansion of the (air) cells produces no sound, and supports the doctrine by adducing the fact that when the individual breathes so as to inflate the lungs without producing the guttural sound, the vesicular murmur ceases to be heard. "I have carefully repeated the experiments of M. Beau and feel convinced that his conclusions are erroneous because I have found in all cases in which his 'respiration silencieux' was performed that I could plainly hear a murmur of expansion in the lung. It is certainly not as loud as natural, but the reason of this is manifestly the fact that to produce silent respirations we must inflate the chest more gently and, of course, with less impulse on the cells of minute tubes." He then brings forward the argument that has had the most weight with more recent authorities who support the view of the intrapulmonary origin of the vesicular murmur. "We can hear a natural respiratory murmur in patients who do not breathe through the mouth and nostrils. Of this we can easily satisfy ourselves by examining a person who has been operated on for laryngeal obstruction. I have now examined eight of these cases and found in all that the respiratory murmur could be heard with ease."

#### BEAU'S TREATISE

The adverse opinion of such authorities, in the judgment of the medical world of that day, seems to have decided the question of the validity of Beau's conclusions in the negative. In 1856, twenty-two years after the appearance of his article, Beau published a work entitled: "Traité expérimental et clinique d'auscultation appliquée à l'étude des maladies de poumon et du cœur." The part of this work that is devoted to the question of the mode of origin of the vesicular murmur brings forward argument and report of experiments for the purpose of defending the propositions that he had enunciated at a so much earlier date. His views as to his fundamental experiments remain unchanged. He emphasizes with greater force the point that, if respiration is continued for some time in such a way that one phase is audible and the other inaudible over the chest, air must necessarily have been admitted, or expelled, during the noiseless phase, thus disposing of the objection that if the vesicular murmur is not heard during inspiration the reason is that air is not admitted. To support this point further, he tied a hog's bladder about the end of a tube, and breathed through the other end of the tube. The bladder, he says, expanded and collapsed. And, he adds, it was possible to abolish the sounds of breathing while using the bladder. But it was in vain that he thus republished and fortified his views. They seem to have attracted little notice and no following, and his name is rarely referred to by later writers on physical diagnosis. There is no occasion for surprise at this fact, for his theory of the production of the sounds of respiration was manifestly incorrect in the view of students of a later day, and that served to prejudice the acceptance of his experimental evidence.

It was Beau's misfortune that he made his discovery at a time when the rôle of the vocal cords in the production of the bronchial sounds of respiration had not been established as it now is. Nor had laryngology been erected into one of the recognized branches of medical science and art even at the time of the publication of his treatise. Liston,<sup>3</sup> in 1840, had reported the successful use of a laryngeal mirror which seems to have been similar to that now used by dentists. As he described it, the instrument was a speculum, or "a glass on a long stalk," and was used, of course, by direct illumination. Since Liston's time, nothing further seems to have been done until Garcia published in 1855 a series of laryngoscopic studies as to the mode of formation of the voice. Czermak began his laryngoscopic studies in the course of the winter of 1857-1858. During 1858, several articles were published in Vienna by him and by Turck, who disputed with him the honor of inventing the laryngoscope, and it is in that year that laryngologic literature may be said to have commenced. Czermak introduced a "large ophthalmoscope" as a reflector, and used artificial light, thus freeing the new art from its former dependence on the sun's rays, and making its systematic study possible. His work<sup>4</sup> appeared first in 1860.

#### VIEWS OF ANATOMY AND PHYSIOLOGY OF THE LARYNX

Beau's treatise, however, manifests some progress in acquaintance with the anatomy and physiology of the larynx. A change in his views as to the relative importance of the veil of the palate and of the glottis in the production of respiratory sound is shown in the following abstract.

The orifice of the glottis is mobile. Its lumen may be diminished until it disappears, or augmented until its diameter is that of the larynx. In the latter case the inferior (true) vocal cords fill the ventricles, and the superior cords efface themselves. When the lumen is normal (15 cm.), a distinct sound is produced in respiration, which increases with the narrowing of the orifice. The orifice of the glottis constantly presents an obstacle to the passage of air which causes vibrations. The glottic souffle is then heard. It is the sole normal sound that is connected regularly with the respiratory functions, and is the only sound with which henceforth we have to occupy ourselves. The opening of the larynx is immobile. It has a lumen of about 40 cm. If one accelerates the respiratory movements beyond forty-five respirations a minute (the vocal cords being fully appressed), a noise is produced which is heard loudest over the upper portion of the neck. The opening of the larynx has now become the narrowest part of the superior respiratory passages, and this orifice, which causes no sound when the air traverses it slowly, gives rise to sound when the air passes rapidly and in great volume.

From the foregoing, it appears that the larynx is now granted the chief rôle in the production of respiratory sound, but that the relation of the vocal cords to the sound is still not apprehended. The vocal cords for Beau were simply movable obturators which have the effect of increasing sound in proportion to their degree of approximation until their closure causes it to cease. The rima glottidis is still simply a crevice, and the sound produced on the passage of air through it is for him apparently dependent only on the size

3. Liston: Practical Surgery, 1840.

4. Czermak: The Laryngoscope and Its Employment in Medicine, Selected Monographs, New Sydenham Society, 1861.



of the aperture. It might be expected that the writer who so acutely compares bronchial breathing and bronchophony, on the one hand, with the cavernous soufflé and pectoriloquy, on the other, would take the next step and see that the mechanism that is known to originate vocal sound must be the one that likewise originates respiratory sound. He was familiar with the experiment of Legallois, who exposed the vocal cords by an incision in the living rabbit and knew their respiratory movements. But he could hardly have seen the larynx of the living man, and was ignorant of the fact that the vocal cords, which shrink into insignificance after death, in life as they overhang the cavity of the larynx are ready when not under willed tension to flutter with the least current of air. In other words, he did not understand that the edges of the relaxed vocal cords assume a rôle in breathing analogous to that of the tense cords in phonation. His statement that, with sufficient rapidity and force of the air current, laryngeal sound is producible when the rima glottidis is wide open could be confirmed only by continuous laryngoscopic observation during the production of the sound. The belief of Stokes that shallow breathing is a necessary condition for the suspension of the respiratory sounds is unfounded.

Beau, in his article, indicates the true nature of the mechanism of dilatation. Speaking of cases of asthma with very labored breathing, he says: "In asthma inspiration is brusque, instantaneous, *silent*, and gives no guttural sound; to make it the patient throws back the head and opens the mouth wide, and this in a convulsive manner. Expiration, on the contrary, is long and noisy. One hears in inspiration no vesicular, bronchial or tracheal sound, although the thorax rises. . . . All of the inspiratory muscles are in a state of spasm, but it is not, as Laënnec thinks, a spasm that narrows the respiratory passages; on the contrary, it is a spasm that dilates them. It follows that the air, traversing rapidly, encounters no obstacle in mouth, pharynx, and glottis, convulsively dilated; there can be then no production of guttural sound, and hence no tracheal or vesicular resonance of the sound." This passage is quoted, not because I wish to side with Beau in his polemic against Laënnec, but for the light that his observations throw on the nature of the inspiratory phase of respiration that is accompanied by intense dyspnea. Other writers state that the vesicular murmur is not heard over the chest. This is generally explained, no doubt, by the assumption that very little air is admitted into the lung. Still, while the lung is undoubtedly overfull of air, it remains overfull. Air is expelled at each expiration, with, however, great difficulty; aeration is imperfect, to be sure, but life is preserved. There can be, of course, no doubt that air is admitted to some extent into the lungs at each inspiration. Now, to one conversant with the slowness of the current of air that will produce respiratory sound when the vocal cords are in their normal relations of approximation, the entire absence of the vesicular murmur is a fact that is of considerable significance in this connection, for it shows that the vocal cords are not in their usual position. The sounds of the trachea during the inspiration of very dyspneic asthma have been studied, so far as I know, only by Beau, who reports their absence.

#### MECHANISM OF THE NOISE OF RESPIRATION

In ordinary inspiration, the vocal cords diverge from their position of rest; with slight dyspnea (and always more or less in horses), the alae nasi also dilate; in intense dyspnea, the patient instinctively throws back

his head, thus straightening the air passages, and opens his mouth wide. Whether the vocal cords are separated to their fullest extent at the same time is not known from other observations than those of M. Beau, but it is probable; the laryngeal muscles are capable of producing a much wider separation of the cords than that of normal inspiration, as I myself have demonstrated.

The process is conceived of in this way: The various dilating mechanisms of the upper air passages are linked together in a system, the various members of which are successively called into play as the nervous stimulation increases. The dilatation of the rima glottidis is the most important of all of the devices for the removal of impediments, even the slightest, to the access of the largest possible volume of air to the imperfectly aerated lung. When, therefore, the experimenter seeks to separate widely the vocal cords, he imitates the paroxysmal dilatation of extreme dyspnea. He throws back his head and opens his mouth wide and, as Beau says, he instinctively makes an effort to open the throat. This amounts chiefly to the activation of the laryngeal dilators, but is accompanied by the sensation of the activation also of the faucial musculature. There can be no question for one who is familiar with the method that, in bringing into play one portion of the dilating mechanism, one almost necessarily sets the whole process into automatic operation. With these muscular contractions is instinctively combined a mighty inhalation of air, so that after inspirations which have been successful in abolishing the vesicular murmur, the lung may be overfilled. Stokes' opinion, already referred to, that "to produce silent respiration we must inflate the chest more gently," is therefore incorrect; the experiment succeeds at first only when the chest is inflated ad maximum, although with more practice it is possible to acquire the knack of keeping the vocal cords separated without simulating so closely in other respects the dyspnea paroxysm.

The objection of Stokes that he could always hear a murmur of expansion simply shows that he had not mastered the method of Beau. It is extremely easy to open the larynx widely enough to eliminate the harsher tracheal sounds—several of my friends proved capable of doing this at the first trial. As I had no guide in my experiments, I for some time believed that the partial opening of the rima which I was effecting had been sufficient to eliminate the tracheal element of respiratory sound, and supposed that the remainder of the sound that persisted in the breathing represented the vesicular element originating within the chest. But further practice showed that the vesicular murmur could also be abolished when the cords were appressed against the walls of the larynx with a greater effort. When the idea occurred to me of checking up the success of the separation of the vocal cords by means of self-auscultation over the larynx through a binaural stethoscope, it became easy to control the procedure, and the complete dependence of thoracic on laryngeal sound was established to my satisfaction. If the larynx was silent during inspiration, an observer, listening over the chest, did not hear the vesicular murmur; and, conversely, if any sound was heard over the larynx, a sound was heard also over the lung.

Sound originating in the larynx and heard in the lung is carried down through the tracheobronchial tube to the air cells, as through a speaking tube. If this were all, tones of any pitch originating in the larynx would reach the ear applied outside the chest; or, more specif-



ically, the ear would hear tracheal breathing, which, of course, it fails to do if the pulmonary parenchyma is normal. The air cells, therefore, do not permit all manner of sounds to pass through them. The only sound that passes with ease is what we call the vesicular murmur, a deep-pitched sound. Investigators, among whom F. Müller of Munich and his associates are prominent, have shown that the pitch of the vesicular murmur and the pitch of the chest note of percussion are the same, and that both are approximately of the pitch of the fundamental tone of the thorax as a resonator. A perfect resonator answers tones of its own pitch and is silent to other tones. The thorax is not a perfect resonator from the standpoint of the physicist, but it would lead too far to discuss its peculiarities in the present connection. It is enough to say that the thorax is necessarily a resonator, just as all air-containing cavities with firm and elastic walls are resonators in the wider sense.

Beau, as has been shown by the preceding quotations, grasps at once the idea that the laryngeal sounds undergo resonance in the thorax. For him, a single sound in the upper air passages undergoes resonance in the various cavities connected with the respiratory apparatus, the differences noted in pitch and quality of tone being due, according to his idea, to the varying size of the cavities concerned. We would say today that laryngeal sound is a noise made up of a large number of individual tones, and that tones are selected by the various resonators (for the bronchi are also resonators) which are of or near to their fundamental tones. Sounds that have been amplified by resonators may owe their characteristics almost entirely to the resonator, and this is more likely to be true of weak tones, such as those of respiration. Just as the tones of the organ are not the tones of the air blast or of the reed, but of the pipes that are stimulated through these means to the production of vibrations of their own proper periodicity, so any noise that is present in the respiratory passages during inspiration, however created, if it contains tones of the proper rate of vibration, will give rise to a sound in the lungs that has the same pitch as that of the vesicular murmur, it may be to a sound indistinguishable from the vesicular murmur by its quality.

Beau is aware of the fact that sound is very easily produced by a current of air that issues from a narrow into a relatively wide air space. In his experiment with the hog's bladder, he is careful to call attention to the point that in this experiment a tube must be employed with an internal diameter at least equal to that of the trachea, which, he states, is about 2 cm. A narrower tube, he says, would produce sound at its extremity. Beau was clear-headed enough to perceive that it would be fatal to the success of his experiment if, though he held the larynx open and abolished the vesicular murmur, he nevertheless permitted a sound to be created within the apparatus which was capable of simulating that murmur. He thus practically solves the dilemma that his experiments create. The experiments have shown that the vesicular murmur depends on laryngeal sound; yet what seems to be the vesicular murmur may be heard, as Stokes, and many others, point out, though the current of air does not pass through the larynx at all in respiration. In view of his ignorance of the physiology of the larynx and of the laws of sound, M. Beau's clearness of vision is extraordinary.

One writer ranged himself at his side in this question. Robert Spittal,<sup>5</sup> in reviewing Beau's article of 1834, states it as his opinion that the guttural sound is loudest and has its main origin at the upper part of the larynx, and is probably produced at the rima glottidis, "where the air in passing to and from the lungs and meeting an impediment to its free passage is thrown into sonorous vibrations." The persistence of respiratory sounds observed by Raciborski in a rabbit, the trachea of which had been cut through, so that the animal breathed through the opening, Spittal thinks, does not affect the theory of Beau. It does not appear that any other writer up to the present time has entertained the possibility that the tracheotomy tube, or other apparatus, that side-tracks the vocal cords might itself become a source of sound. Yet it is extremely difficult, unless one resorts to the precautions urged by Beau, to avoid the production of sound by air which passes through a tube situated, like the tubes under consideration, within resonant cavities, because amplification by these cavities will increase the loudness of a sound that was insignificant, perhaps scarcely audible, outside the body.<sup>6</sup>

As reported in the previous article, I once underwent a laryngoscopic examination in connection with my experiment. The examination was prolonged; the laryngeal muscles wearied under the comparatively unwonted strain; they began to quiver. The resulting quivering of the vocal cords was seen by the laryngologist and felt by the subject. For those who listened with stethoscopes over the lungs, it was made apparent by intermittent sounds. The minimal projection of the vocal cords, as they oscillated in the tremulous movement, was therefore sufficient to produce sound audible over the lung. That sound, however, alone was heard, and under the circumstances it was readily identified by its interrupted character as of laryngeal origin; otherwise the experiment would, no doubt, have been adjudged a failure. This experience shows clearly enough what extreme care must be used to prevent sound from causes so insignificant as to be readily overlooked.

Another point, Beau was only too much inclined to the belief that any and all sound in the upper respiratory tract would excite the lung sound; but later writers, as a rule, do not seem to appreciate the full significance of the fact that, independently of such special conditions as result from operative or other instrumental interference, sound may be produced in the upper air passages by vibrations other than those of the vocal cords, which is distinguished with difficulty from the true respiratory sounds. Spittal quotes Magendie<sup>7</sup> as stating that he (the latter) had noticed the sounds referred to by Laënnec as being formed in the back part of the mouth and in the nasal fossae (which Laënnec thought had no effect on respiratory sound), and thinks that they may have some influence on those perceived in the human chest. But we do not need a great man of the past to confirm these views. Does not every auscultator take pains that his subject shall breathe normally, making no noise in the throat or at the lips? Why, if not because such abnormal sounds are transmitted to the lung and may confuse the true breath sounds? And

5. Spittal, Robert: Experiments and Observations on the Cause of the Sounds of Respiration, Edinburgh M. & S. J. 138: 99, 1839.

6. Baas (Deutsch. Arch. f. klin. Med. 9:257) first, after Beau, maintained the laryngeal origin of respiratory sound, modified in the infundibula to become vesicular breathing. He explained the persistence of inspiratory sound when the trachea is cut below the larynx by supposing that the sound originated from the striking of the current of inhaled air against the edges of the forkings of the bronchi. According to him, there is no expiratory breath sound under such conditions.

7. Magendie: Lectures, Lancet, 1834-1835, p. 793.



if abnormal admixtures are thus readily transmitted, what difficulties stand in the way of the transmission of the breath sounds themselves from larynx to lung?

#### VALUE OF BEAU'S DISCOVERIES

I have been able to confirm by my own experiments the statements of Beau as to the mode of production of the vesicular murmur, of tracheal breathing and of bronchovesicular breathing. I am therefore perhaps better fitted than any other to value at their true worth the discoveries of M. Beau, and it affords me great satisfaction to be in the position to rescue from oblivion, so far as I may, the work of an able man who was in advance of his time.

Beau's discoveries cannot be neglected by students of physical diagnosis, for they are fundamental for a correct understanding of the mode of production of breath sounds, both normal and abnormal. Here, at last, we have the problem put on an experimental basis. It is unnecessary to detail the results of theorizing on these points, for every one knows the variety of hypotheses that have been propounded, especially with regard to the origin of the vesicular murmur. Only one thing seemed settled, and that correctly, namely, the fact that the sound of expiration, as heard over the lung, is conducted from the larynx; but even this the latest writer on the subject, Martini,<sup>8</sup> puts again into question on the ground that bronchial breathing is heard over the seventh cervical vertebra when a tracheoscope is in position, and therefore has its origin in the bronchial tubes.

As I am not in active practice, I have not been able to conduct experiments as to the origin of morbid breath sounds, with the exception referred to above, for in this field the experimenter is obliged to depend on the patient. Beau was fortunate in finding patients both docile and at the same time intelligent enough to acquire quickly the art of opening the larynx.

It is to be hoped that observers who have control of clinical material will apply Beau's method to the study of the mode of origination of the morbid breath sounds.

#### IS ORTHOSTATIC ALBUMINURIA A UNILATERAL DISORDER?

CLARENCE QUINAN, M.D.

SAN FRANCISCO

Pavy, in 1885, described an affection of the kidneys in which albumin is present in the urine while the patient is up and about, but disappears after rest in bed. Most of his patients were young and apparently healthy persons. Although he was aware that the urine usually remains free from albumin during recumbency, nevertheless he gave it as his opinion "that albumin may be persistently present and yet not necessarily mean that a grave condition exists." Since then, his description of the now familiar orthostatic albuminuria has been confirmed in every particular.

There is but one pathologic report in the literature of the subject. Heubner found a single minute lesion, measuring 1 by 5 mm., in the right kidney of a girl, aged 10 years, who had a cyclic albuminuria, and who died of a cystic glioma of the brain. Otherwise both kidneys were normal.

In this paper I bring together for what they are worth the results of some kidney fixation experiments

in a marked case of orthostatic albuminuria. The object of the investigation was to determine, if possible, whether this disorder is always left-sided. My results seem to show that such is not the case. However, as the data are quantitative in character and cover a period of eight years, they may be useful in a small way to others.

Previous work of pertinent interest deals with (1) palpatory albuminuria, (2) movable kidney and lordosis, (3) clinostatic albuminuria and (4) ureteral catheterization.

#### PALPATORY ALBUMINURIA

Menge, in 1900, demonstrated that albuminuria can be easily induced by manual palpation of the kidneys. His patients, twenty-one in number, all had movable kidneys. In twenty patients the right kidney alone was movable; in one patient both kidneys were movable. Albuminuria was noted in fifteen patients after palpation of the kidneys. In one instance, after manipulation of the right kidney, catheterization of the ureters revealed an albuminuria limited to that side. Menge believes that various unknown factors determine the palpatory sensitivity (*Empfindlichkeit*) of the organ. He suggests that pressure from without, possibly that due to the clothing, may be a contributory factor in orthostatic albuminuria. Schreiber, Zebrowski and Seelig confirm Menge's results, while Gomolitzky was successful in only eight out of thirty-five cases.

This direct reaction of the cortical pulp to external pressure, and the conditions that govern it, as a practical research problem, may have received less attention than it deserves. The fact seems to be established, however, that manipulation of the renal cortex causes albumin to appear in the urine.

Many workers entertain the idea that orthostatic albuminuria connotes a venous stasis due to compression of the renal vein. Here, it is held, renal mobility and lordosis facilitate obstruction.

#### MOVABLE KIDNEY AND LORDOSIS

Nivière describes the case of a man, aged 20, who had a movable right kidney and orthostatic albuminuria, and he declares that a firmly applied abdominal bandage gave the patient great relief.

Mosny had a similar experience in the case of an hysterical young woman of the same age, who had a slightly movable left kidney. He states that when this kidney was supported with a proper bandage the albuminuria disappeared.

Lury tried to control orthostatic albuminuria in children by manual fixation of the kidneys. This procedure was carried into effect with the child's body bent in lordosis on the knee of an assistant. Albumin completely disappeared from the urine of four patients after fixation of the left kidney, and in three patients after fixation of the right kidney. In four other patients, in order to obtain urine free from albumin, it was necessary to support both kidneys. He does not express an opinion as to the value of bandaging in the treatment of movable kidney, but other workers object to this procedure. Menge, for example, emphatically warns against massage of the kidney region and the use of supporting bandages in nephroptosis. Sutherland, also, who has had considerable experience with this plan of treatment, condemns it.

Jehle made the important discovery that lordosis, in some persons, may exert a definite influence in postural albuminuria, and that, even in the horizontal decubitus, albuminuria can be induced by lying on a hard pillow.

<sup>8</sup> Martini, Paul: Studien über Perkussion und Auskultation, Deutsch. Arch. f. klin. Med. 139: 257.



Just what this curious phenomenon signifies is still problematic. It is usually held to indicate an obstruction of the renal circulation at some point external to the organ. But the explanation that it is due to compression of the renal vein by the advancing lumbar arch, in lordosis, would be more convincing if it were not for the fact that orthostatic albuminuria commonly occurs in movable kidneys. Moreover, cyclic albuminuria is not invariably orthostatic in type.

#### CLINOSTATIC ALBUMINURIA

Rolleston, in 1902, was first to note the clinostatic form of albuminuria. He states that "in some patients with considerable splenic enlargement, rest in bed or in the recumbent position may be accompanied by albuminuria, and the albumin may disappear from the urine when the patient assumes the erect position."

Amblard made a similar observation in three gouty patients. The urine collected in the period from midnight to 4 a. m. was albuminous—as much as 1 part per thousand—but was free from albumin throughout the day.

Dufour and Muller were able to prove that clinostatic albuminuria is not necessarily of mechanical origin. Their patient, a boy, aged 16, had an intermittent clinostatic albuminuria. They finally discovered that albumin made its appearance in the urine only after the act of masturbation, and therefore attributed it to nervous exhaustion.

#### URETERAL CATHETERIZATION

Vorpahl catheterized both ureters of a girl, aged 12 years, who had orthostatic albuminuria and a left lumbar scoliosis, and found that the albumin came from the right kidney alone. The urine from the left kidney was normal.

Von Stejskal states that in three of his patients the albuminuria was bilateral. Of these, in one patient, he could detect no difference between specimens of urine from the two kidneys. Of the remaining two patients, the albuminuria was predominantly right-sided in one and left-sided in the other.

Sonne found that the albuminuria was left-sided in two out of six patients catheterized in lordosis. He advances the idea that orthostatic albuminuria is always left-sided, and that it is due to compression of the left renal vein by the lordotic vertebral column, the pressure probably being transmitted through the abdominal aorta.

#### REPORT OF CASE

*History.*—E. T., a man, aged 23, seen, Jan. 20, 1915, who was apparently in good health and whose family history was negative, had an attack of whooping cough in his seventh year, following which albumin was discovered in the urine. It had persisted ever since. In 1910, he was confined to his bed for five weeks with "kidney trouble"; he felt worn-out. Otherwise he had always been free from sickness. He was an ardent sportsman, and for a number of years followed the life of a "field-naturalist." In 1916, he enlisted in the U. S. Army, for service on the Mexican border. Subsequently he transferred to the aviation service, in which he rose to the rank of captain. He was enabled to pass all physical examinations by substituting for his own urine that of a comrade. Shortly after the armistice was declared, after two years of continuous flying duty on the western front, his health broke down. He "got weaker and weaker, lost a lot of weight, and slept heavily." The urine at this time was lessened in quantity and dark in color. He had no localized edema nor any spasmodic symptoms. One month's rest in bed on a milk diet, together with relief from active duty, restored him to his usual health. Since leaving the army, his work, that

of "outside solicitor" for a transportation company, had kept him almost constantly on his feet. Sept. 14, 1922, he complained of feeling exhausted; he had "gas-pains" and gastric distress. Rest, laxatives and a smooth diet gave relief. At present, January, 1923, he has every outward appearance of vigorous health.

*Examination.*—The patient, Jan. 20, 1915, was well developed, muscular, and of erect and athletic figure. There was no lordosis in the upright posture. His height was 5 feet 8 inches (173 cm.), and he weighed 148 pounds (67 kg.). With the exception of a slight facial pallor, he looked physically fit. The right kidney was freely movable; the left could not be felt. In other respects, the examination of the trunk was negative. The superficial and deep reflexes were normal. The eyegrounds were normal. No enlarged glands were felt. The urine contained a large amount of albumin. There were a few hyaline casts in the sediment. He was instructed to bring for examination samples of urine collected (1) before rising from bed in the morning, and (2) after being up and about for some time.

January 22, the two urine samples collected January 21, and a third sample voided at 3 p. m., contained, respectively, 0.75, 6 and 7.5 parts per thousand of albumin. A diagnosis of orthostatic albuminuria was made.

It was not until early in May, 1922, after the lapse of seven years, that I was enabled to resume the study of this patient.

May 4, 1922, the general physical status remained as reported in January, 1915. Blood counts showed 4,500,000 red cells and 7,900 leukocytes. The differential count was: polymorphonuclears, 62; small lymphocytes, 32; large mononuclears, 3; eosinophils, 1, and transitionals, 2. The blood pressure was 122 systolic, 85 diastolic, and was not appreciably modified by change of posture. The eyegrounds were normal. The orthostatic albuminuria persisted. Quantitative precipitation of the urinary proteins took place, on the water-bath, at from 73 to 75 C. The albumin was not precipitated in the cold by acetic acid.

#### EXPERIMENTS WITH A KIDNEY SUPPORT

*Technic.*—For a period of five months, from May to October, 1922, various experiments were carried out with a view to control the orthostatic albuminuria by unilateral kidney fixation. This work was facilitated by the employment of the simple mechanical device illustrated in Figure 1. This clamp can easily be taken apart or assembled, and with it one kidney can be braced up securely without exerting pressure on or impeding the movements of the other one. In applying it, we first slightly raised the pelvis on a pillow. The clamp was then adjusted in place, the sliding block was moved to the desired point, some wadding was slipped under the bearing surface, and after the kidney had been pressed upward with the hand, it was held in any desired position by pressure applied with the screw-nuts. Throughout the work, all the urine samples were obtained at the same hour of the morning, before breakfast. In a typical experiment, specimens were taken at 7, 7:20 and 7:40 a. m. The patient voided the first specimen while still in bed, and applied the clamp immediately thereafter. He then assumed the vertical position and moved about as he pleased. At 7:20 the clamp was removed, and the No. 2 specimen was collected. At 7:40 a. m., twenty minutes after the removal of the clamp, the third and final specimen was obtained. The amount of albumin in each sample of urine was determined by Esbach's method.

*Results.*—Forty experiments were made, in all, and 120 samples of urine were examined.

*Appearance:* The No. 1 specimens, voided at 7 a. m., usually were clear and normal in appearance. The two specimens collected during the ensuing forty minutes, on the contrary, were never quite clear, and they often more or less resembled suspensions of gum arabic.

*Specific Gravity:* The specific gravity of the urine collected before the patient rose from bed varied from 1.014 to 1.023. The mean value found for thirty-five of the No. 1 specimens was 1.018. Specific gravity determinations by



weight, on an analytic balance, Jan. 18, 1923, gave values for the urine samples collected on that date as presented in Table 1.

Albumin: Speaking in a general way of the albumin determinations, the results show that the orthostatic albuminuria was not in the least affected by the supporting of either kidney alone or both kidneys together. Lordosis could be ruled out. The grand averages given in Table 2 were obtained from 120 determinations.

At first, the relatively low values obtained for the No. 2 specimens seemed to indicate that the clamp retards albumin elimination. That this is not the case, however, became

TABLE 1.—Specific Gravity in Orthostatic Albuminuria

Specimen No.	Time	Posture	Specific Gravity	Albumin Parts per Thousand
1	7:00 a. m.	Horizontal	1.0150	9.90
2	7:20 a. m.	Vertical	1.0160	3.75
3	7:40 a. m.	Vertical	1.0161	5.00

TABLE 2.—Average Albumin Output in the Urine in Orthostatic Albuminuria (Five Months' Period)

Specimen No.	Posture	No. of Sp. Examined	Albumin Parts per Thousand
1	Horizontal	40	1.24
2	Vertical	40	4.30
3	Vertical	40	7.60

evident before long, for in every experiment this sample proved to be intermediate in value between the other two. Obviously, therefore, a time element governs the eliminating mechanism; the albumin elimination curve rises gradually.

One rather striking fact may be mentioned that seems to be of some practical value in connection with the treatment of this disorder. During the first three months, it was observed that the No. 1 specimens, voided before the patient rose from bed, contained from 1.5 to 2.5 parts per thousand of albumin. The presence of so much albumin in the urine during recumbency was surprising, because the usual clinical symptoms of nephritis were absent. The blood pressure was 122, the heart sounds were not accentuated, he had no head-

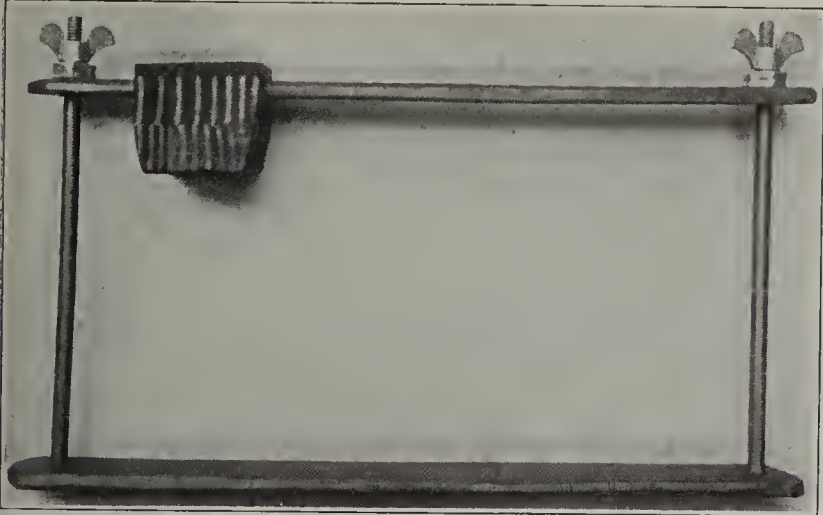


Fig. 1.—Kidney fixation clamp, 7½ by 12 inches; a wooden block 2 by 2¼ by 2 inches slides on a thin strip of ash wood measuring 1½ by 13 inches; the screw bolts are 8 inches long.

ache, and there were no other signs of chronic uremic intoxication. It seemed unlikely, therefore, that such a pronounced clinostatic albuminuria could be regarded simply as an expression of chronic interstitial nephritis. Subsequent experiments strengthened this impression, for it was found possible in the course of time to reduce the nocturnal albuminuria either (1) by having the patient sleep with the foot of the bed raised from 2 to 4 inches, or (2) by a small daily dose of cascara sagrada, with a light mercurial purge once a week.

Figures 2 and 3 give a fair idea of the way the albumin output is affected by this treatment. I suppose these simple measures produce their good effects by counteracting a general tendency to visceroptosis. At night, the gravity pull on an inclined plane promotes replacement; by day, the evacuation of the lower bowel perhaps minimizes a drag in the opposite direction. Whatever the explanation may be, a



Fig. 2.—Esbach tests: appearance after twenty-four hours; A, horizontal specimen, 7 a. m., patient recumbent; B, first vertical specimen, 7:20 a. m.; C, second vertical specimen, 7:40 a. m.; kidneys free.

combination of these two principles, together with plenty of rest and a smooth diet in which milk predominates, is worth trying in any case of orthostatic albuminuria in which reconstructive treatment seems worth a trial.

All the urine samples collected in the vertical position (Nos. 2 and 3) gave uniformly high albumin values. But as

TABLE 3.—Albumin Elimination During Period of Eight Years in a Case of Orthostatic Albuminuria

	Albumin in Parts per Thousand		
	7:00 a. m. Patient Horizontal No. 1	7:20 a. m. Patient Vertical No. 2	7:40 a. m. Patient Vertical No. 3
Jan. 20, 1915.....	0.75	...	6.0
May 4, 1922.....	2.25	4.0	8.0
Jan. 18, 1923.....	0.90	3.75	5.0

the figures noted from week to week do not vary much from the general averages already given, a detailed report of them seems unnecessary.

The fairly constant character of the albumin values in this case is best shown in a comparison of the data noted at different times throughout a period of eight years (Table 3).

COMMENT

A man, aged 30, erect of figure, muscular and free from lordosis, for at least eight years has had a clinostatic albuminuria with slight evidence of nephritis. The clinostatic albuminuria varies from 0.4 to 2.5 parts per thousand of albumin; the orthostatic albuminuria from 5 to 8 parts. Most of the time his health has been excellent, but, at rare intervals, he has



had attacks of "kidney trouble." Mentally, he is highly temperamental, and he is rather easily depressed. His right kidney is freely movable. Experimentally, the orthostatic albuminuria is not affected by the supporting of either kidney alone or both kidneys together. On the other hand, the clinostatic albuminuria can be greatly reduced by having him sleep with the foot of the bed raised a few inches. How are these facts to

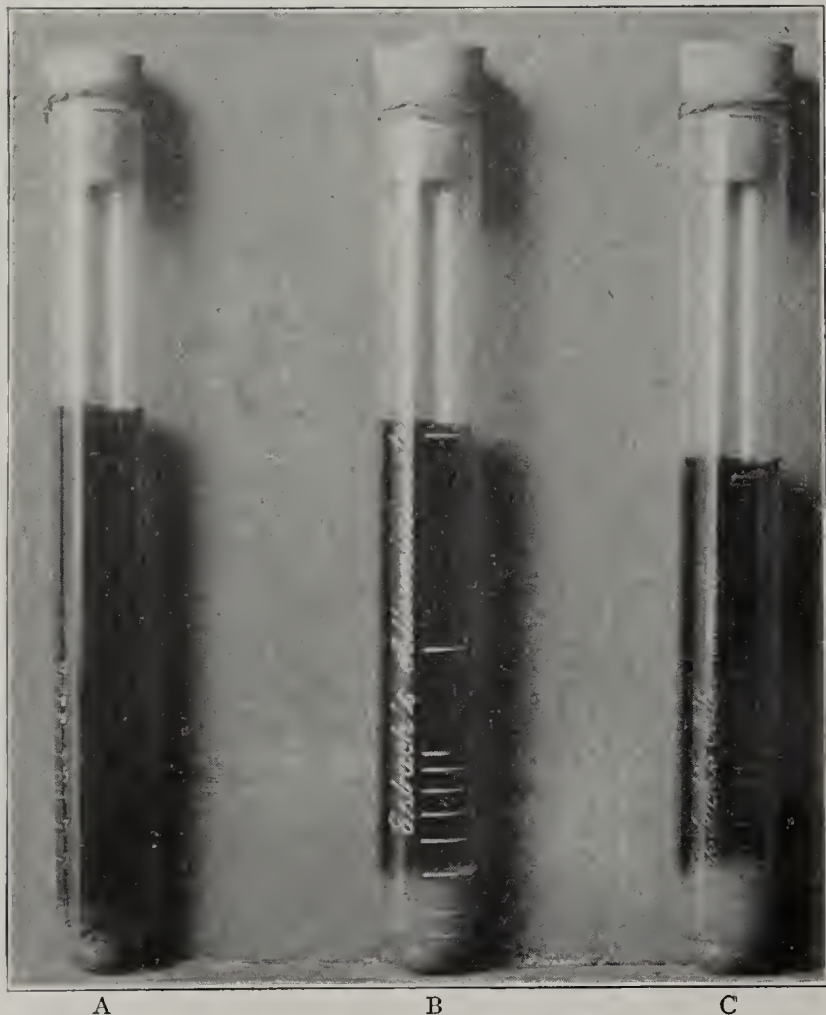


Fig. 3.—Esbach tests: appearance after twenty-four hours; effect of raising foot of bed 4 inches; A, horizontal specimen, 7 a. m., patient recumbent; B, first vertical specimen, 7:20 a. m.; C, second vertical specimen, 7:40 a. m.; kidneys free.

be interpreted? Obviously, they lend no support to Sonne's theory that orthostatic albuminuria must be left-sided. On the contrary, the circumstance that the clinostatic albuminuria quickly diminishes when the bed is raised would tend to focus attention on the freely movable right kidney as the seat of the disorder. Unfortunately, I was unable to examine this patient by ureteral catheterization, and therefore cannot settle this point by direct evidence.

#### CONCLUSION

I would suggest that the results which other workers have obtained by various experimental methods are of such a conflicting character that it appears impossible to uphold a purely mechanical theory of orthostatic albuminuria. There are most likely several unknown factors to reckon with, one of which, quite possibly, will have to be sought in the autonomic nervous system.

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**Tuberculosis Campaign.**—For the time being, it seems the part of wisdom for the organized tuberculosis movement to broaden its horizon and its scope; to take cognizance of all of those agencies and means of health promotion which may contribute to the efficiency of its work, looking forward to a day when it will become practicable to consolidate all of those organizations whose work is so closely akin.—George T. Palmer, *Am. Rev. Tuberc.* 3:275 (July) 1919.

## CONGENITAL SARCOMA OF KIDNEY IN A CHILD OF TWENTY-NINE DAYS \*

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The object of the report of this case is to emphasize (1) the value of complete cystoscopic examination in children; (2) the fact that urograms are just as essential in the examination of infants as in that of adults, and (3) that local anesthesia may be used for nephrectomy in infants.

#### REPORT OF CASE

*History.*—A boy, aged 29 days, admitted to the urologic service of the New Haven Hospital, Nov. 22, 1921, the first child in a family in which there had been no other pregnancies, gave an unimportant family history. At birth, which was natural and spontaneous, the weight was 7 pounds 8 ounces (3,398 gm.). During the first, third and fourth days of life, the child passed blood in the urine. On the fourth day especially, the urinary passage resembled pure blood which was bright red. Blood was also noticed in the stools at this time, by the family physician. Subsequently, no blood was noted from either tract. The child, although a breast-fed infant, did poorly and lost weight, so that when 14 days old, it weighed only 5 pounds 4 ounces (2,378 gm.). It then began to gain, took the feedings well and slept well. The stools were often green and their passage was attended by a moderate amount of colicky pain. Vomiting and regurgitation were present, but were not a marked feature until a week before entry to the hospital, when the child vomited half or more of every feeding. The mother had noticed that the abdomen had gradually become larger, and she had thought it unusually large since birth.

*Physical Examination.*—The weight was 7 pounds (3,171 gm.); rectal temperature, 99.6 F.; pulse, 96. The child was pale and poorly nourished. There were no congenital malformations of head or extremities. The main features of interest were found in the abdomen, which was enlarged, especially on the right side. Collateral circulation was present in the large, distended superficial veins of the abdominal wall. The outline of a mass could be seen in the right side during respiration. Palpation revealed a mass filling the whole right side of the abdomen and extending a finger's breadth beyond the navel. The lower border reached to the crest of the ilium and the symphysis pubis. Superiorly, the mass escaped beneath the costal margin. The demarcation between it and the liver was not definite. The upper border of the liver, as noted by percussion, reached to the fourth interspace in the right nipple line. The lower pole of the mass was rounded and smooth. Its surface was also smooth and tense, and gave the sensation of a cystic tumor.



Fig. 1.—Course of ureter and transverse position of the kidney pelvis. The kidney tumor occupies the right side of the abdomen, replacing the intestine to the left.

The lower border reached to the crest of the ilium and the symphysis pubis. Superiorly, the mass escaped beneath the costal margin. The demarcation between it and the liver was not definite. The upper border of the liver, as noted by percussion, reached to the fourth interspace in the right nipple line. The lower pole of the mass was rounded and smooth. Its surface was also smooth and tense, and gave the sensation of a cystic tumor.

\* From the section of surgery, Yale University, and the surgical clinic of the New Haven Hospital.



It descended slightly with respiration, and could be moved slightly upward and a little to the left. The percussion note over it was everywhere flat. The spleen was not enlarged. The left kidney could not be felt. A roentgenogram showed that the right side of the abdomen was occupied with a mass which pushed the intestines over to the left side.

*Cystoscopic Examination.*—Enough ether was administered to produce relaxation, so that a child's cystoscope could be introduced. The bladder capacity was 100 c.c. The inner

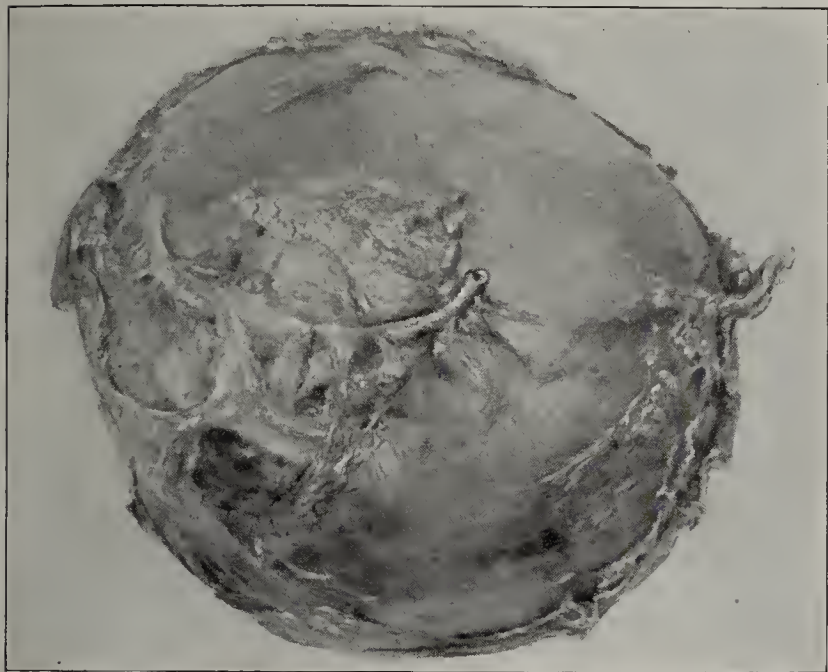


Fig. 2.—Kidney tumor showing the ureter.

surface of the bladder was of normal appearance. The ureteral orifices were large, and were normally situated. The left functioned, but the right did not. A No. 5 catheter was passed for a distance of 4 cm. up the right ureter, where it met an obstruction. No function was obtained, while the left could be seen to act more rapidly than normal. An effort was made to take a urogram, 7 c.c. of sodium bromid solution being injected. The roentgen ray showed the ureter to be well filled and its course abnormal. It passed from the right side upward, toward the left opposite the second lumbar vertebra on the left, thence upward and outward toward the right side. The pelvis of the kidney was crescent shaped, and lay more or less horizontally, opposite the twelfth dorsal vertebra. The large and small intestines were seen on the left side of the abdomen.

*Laboratory Findings.*—The urine was free from blood, albumin, pus cells and casts; the red blood count was 2,920,000; hemoglobin, 65 per cent.; white blood count, 9,800; differential count: polymorphonuclears, 70 per cent.; large mononuclears, 6 per cent.; small mononuclears, 22 per cent.; transitionals, 2 per cent. A blood smear showed nothing of note. The Wassermann reaction was negative.

The clinical diagnosis was cystic tumor of the right kidney, most probably sarcoma.

*Operation.*—A nephrectomy was done under local anesthesia (procain, 1:200). The tumor was so large that approach was made through the right rectus muscle by an incision extending from the costal margin to the pelvis. The muscles were separated, and the peritoneum was opened, exposing the tumor, which extended from the liver above and overlapped it, to the pelvis below and to the umbilicus medially. It was adherent above to the liver and gallbladder, medially, to the ascending colon, and at its lower pole, to the cecum and appendix. The adhesions were carefully freed, and the tumor was mobilized. But, as it was otherwise impossible to demonstrate the pedicle, the cyst was tapped, and about 100 c.c. of blood and gelatinous fluid was aspirated. The pedicle was then clamped and ligated. The wound was closed in layers, with a small rubber tissue drain inserted at the lower angle. The patient withstood the procedure quite well, showing marked shock only when the pedicle was being held tense.

*Convalescence.*—The postoperative course was uneventful save for slight superficial infection of the wound, which was controlled with mercurochrome-220 soluble. The skin separated, but the muscle sutures held. Although the child was markedly emaciated, and the transformation from breast to artificial feeding was in process, it gained weight, and was discharged in thirty-four days, completely cured. There was a bulging of the right side of the abdominal wall, as a result of weakness of the right rectus muscle, but there was no hernia. This bulging persisted for about six months. The child was seen recently, twelve months after operation. It now weighs four times the original weight, and is able to walk at the age of 13 months. So far as can be determined, there is no recurrence of the tumor.

*The Tumor.*—Grossly, the specimen was a cystic kidney, the size of a grapefruit. Section showed that it consisted of one large cyst, not connected with the pelvis, which was flattened, and extended along the side of the thin wall of the cyst. The ureter was of normal size and was patent. There was a very small amount of renal tissue, which extended along the pelvis and included the cyst wall. The cyst contained sanguineous fluid, organized blood clot, and grayish white, soft, friable tissue. There were also small areas of yellowish white tissue projecting from different portions of the cyst wall, the greater portion of the growth being opposite the pelvis, but not involving the cavity of the pelvis, which was normal, white and glistening. Several blocks were cut for histologic examination.

Microscopically, the thin wall of the cyst showed a simple fibrous wall, and in places a thin layer of kidney tissue presenting no other changes than that due to pressure. The tumor consisted of a dense mass of spindle shaped cells, which in most sections were densely packed together. In a few areas, the structure was more delicate, simulating a myxomatous tissue, with relatively long fusiform-like cells separated by a small amount of nonstaining intercellular stroma. The tumor cells were large and showed marked variation in size and shape, and in the chromatin of their nuclei. Many of the cells were deeply pyknotic. No typical mitotic figures were seen. There were occasional minute focal accumulations of brownish pigment. There was nothing to suggest a mixed tumor.

The pathologic diagnosis was congenital spindle cell sarcoma of the kidney.

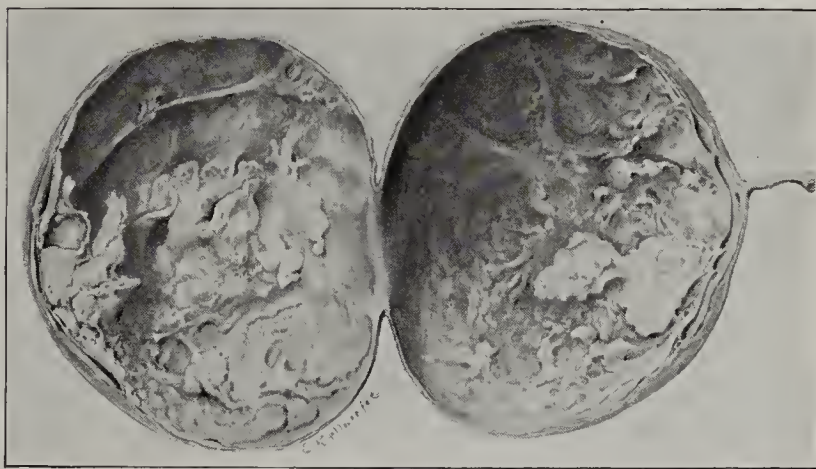


Fig. 3.—Kidney tumor: cross section.

#### COMMENT

The literature is not lacking in case reports of congenital sarcoma of the kidney, but one finds surprisingly few cases followed by cure. Morris,<sup>1</sup> Albarran and Imbert,<sup>2</sup> Rosenstein,<sup>3</sup> Kelynack<sup>4</sup> and Walker<sup>5</sup> discuss the subject thoroughly and correlate the clinical and operative data up to the year 1900; but since then there

1. Morris, H.: Diseases of the Kidney, 1886.
2. Albarran, J., and Imbert, L.: Les tumeurs du rein, Paris, 1903.
3. Rosenstein, Samuel: Pathologie und Therapie der Nierenkrankheiten, 1870.
4. Kelynack, T. N.: Edinburgh and London M. J., 1898.
5. Walker, S.: Sarcoma of Kidney, Ann. Surg. **26**, July, 1897.



have been only a few scattering references to single cases. Many of these do not indicate progress. Walker<sup>5</sup> presents the details of seventy-four cases, and shows, in an analysis of 138 cases, that congenital sarcoma is most commonly found between the first and the second year, when 19.5 per cent. occur. From 6 months to 1 year, 13 per cent.; under 6 months, 5 per cent.; at birth 6.5 per cent., and from the seventh to the eighth month of embryonic life, 2 per cent. are seen. The case here reported belongs to the group under 6 months, and the discussion will be limited to sarcomas appearing during the first six months and the first twelve months. Walker,<sup>5</sup> in his series of seventy-four cases, gives an account of two patients aged under 12 months—one, 11 months, who died two days after a nephrectomy, and one 6 months, who was operated on by Schmidt<sup>6</sup> successfully and remained well for four years. No cases are reported in detail below the sixth month. This condition must be more rare than reports would have us believe.

The causes for such tumor growth are hypothesized as: 1. Trauma, as there was a history of injury in thirty out of 142 cases. Rindfleisch sought to explain by "the injury done to the regulating nerve fibers thus permitting their abnormal growth." 2. Misplaced

embryonic tissue (Cohnheim's theory). 3. Heredity, as a predisposing factor. 4. Stone as an irritating influence, which is seldom seen in adults and never in children. 5. Exanthems, especially scarlet fever. Infectious diseases are so common in children without the development of renal sarcoma that little credence can be placed here.

The diagnosis in many of the cases was delayed until several months after the onset of symptoms. Early diagnosis is the panacea for malignant conditions. Now that cystoscopy has been so perfected that ureteral catheterization and even pyelography are possible in infants both male and female, we may expect early diagnosis and better results.



Fig. 4.—Section of kidney tumor showing junction of kidney and tumor tissues. (Low power.)

If there is any question of doubt about an abdominal mass being liver, kidney or something else, a diagnosis of the kidney lesion can be accurately determined so that we need no longer hesitate, "won-

dering what it is." So far as can be ascertained, my patient is the youngest male infant in whom a diagnosis of congenital sarcoma of the kidney has been made by the cystoscopic method. The cardinal symptoms of tumor, pain, hematuria and cachexia, although all present during some phase of the tumor develop-

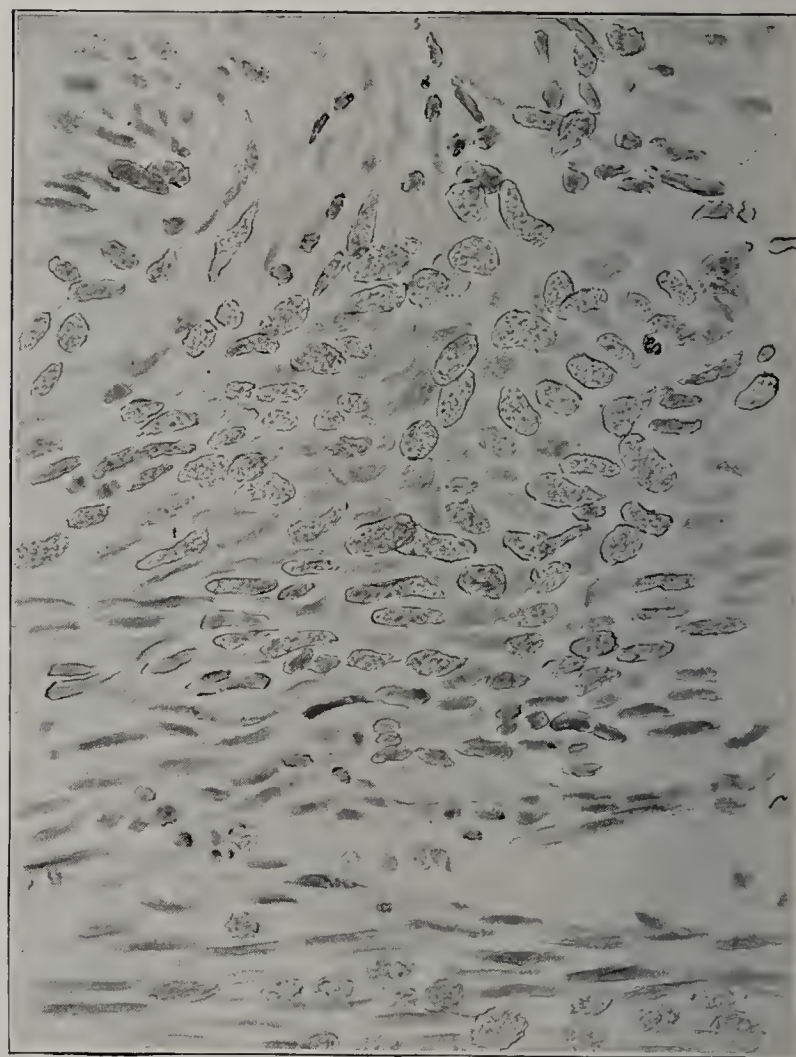


Fig. 5.—Section of kidney tumor. (High power.)

ment, were not obvious in many cases. Tumor, being the most prominent sign, was confused with enlarged liver. Secondary symptoms of pressure were common, especially those of pressure on the stomach, such as noted in the case here reported. There was no ascites, edema or varicocele, yet the superficial abdominal veins were prominent, indicating both pressure and collateral circulation.

The operative mortality is so appalling that operation seems almost inadvisable; but with the newer methods of anesthesia and with better knowledge of preoperative and postoperative difficulties, we should hear better reports following nephrectomies in children. In Walker's series of seventy-four cases, twenty-seven patients died of shock and hemorrhage. Eight in this group who were under 2 years of age died within four days. The anesthetic administered was ether or chloroform. Granting that children take general anesthetics well, it may be assumed that, since 38 per cent. died as a result of the operation, the anesthetic played a much greater part in the mortality than was thought. In my case, operation was performed under local anesthesia successfully; and only at one time did the infant show signs of shock, and that while the pedicle was being held tense. Drug stimulation was not necessary. Hypodermoclysis of 150 c.c. of physiologic sodium chlorid solution was given between the scapulae twice during the first twenty-four hours after operation. Fluid

6. Schmidt: München. med. Wchnschr. 39: 256, 1892.



ingestion is just as important in infants as in adults, to allay shock and promote renal secretion.

Added to the appalling statistics of operative mortality are the discouraging end-results, due to recurrences and metastasis. Congenital sarcomas grow rapidly and prove fatal early. Walker reports that without operation these patients live 8.08 months, and with operation, 16.77 months. In his series of seventy-four cases, only one patient under 1 year was cured by operation, and only four under 14 years, a percentage of 5.47 cures. Recurrences took place in from three to eighteen months. No child under 2 years who died of recurrence lived longer than eleven months after the operation. Hence, it is fair to believe that, since my patient was only 29 days old when operated on, has gained four times its weight, has lived twelve months, and is in perfect health, without any signs of recurrence, a cure may be expected.

330 Cedar Street.

## FRACTURE OF THE SPINE OF THE TIBIA

RICHMOND STEPHENS, M.D.

NEW YORK

The condition with which we are concerned in this paper is one of rather extreme rarity. In reviewing the literature, it is difficult to find very much written on the subject. In all probability, the injury occurs more frequently than the records would indicate, as in the last six years I have seen two cases.

### REPORT OF CASES

CASE 1.—In the fall of 1917, at Base Hospital No. 9, American Expeditionary Forces, a patient was brought in with a severe knee injury. He was about 19 years old, and while playing football was tackled round the knees and thrown to the ground. He experienced a severe twist in his knee as his body lunged, and when he attempted to get up the knee was found to be severely injured. Several hours after the accident he came under our observation, and at this time presented an extremely painful, swollen and discolored knee. There was extensive ecchymosis, heat, increased fluid, and almost complete limitation of motion. There was no marked lateral mobility. A roentgenogram (Fig. 1) showed a fracture of the upper end of the tibia in the knee joint with a fragment including the entire spine of the tibia, which was definitely separated but displaced upward very little. An ice bag was applied, and the leg elevated and immobilized with a posterior splint. Unfortunately, I was unable to see the patient later, as he was transferred after a short time to another hospital. I also regret that I have no records on this case except the roentgenogram. The foregoing notes are not complete, as they are merely from memory.

CASE 2.—J. H. V., aged 16, admitted to the Hospital for Ruptured and Crippled, Aug. 2, 1922, was tackled about the knees in November, 1921, while playing football, and thrown violently to the ground. As he fell he felt something snap in the left leg, and experienced sudden, severe pain in the knee. He was treated for a few days for a "sprained knee" by a lodge physician. For four months he was unable to use the leg, from that time had pain in the joint when stretching out the leg, and found the knee stiff after sitting for any length of time. Examination was negative except for the left knee. On walking there was a slight limp. There was no tenderness, redness, swelling, heat or discoloration. No lateral mobility was found, and flexion was normal, but extension was limited about 10 degrees. A roentgenogram (Fig. 2) taken at this time showed a fracture of the external tubercle of the spine of the tibia, with two small fragments detached

but not much displaced. This picture, along with the limitation of complete extension, established the diagnosis.

August 3, a large, U-shaped incision through the skin and subcutaneous tissues was made about the patella, giving a flap with base upward, which was retracted. A longitudinal cut was then made through the center of the quadriceps tendon, the aponeurosis over the patella, and the patellar ligament. The patella was then split along this line with a chisel, and the fragments were retracted laterally. Most of the fat pad behind the patella was removed, and an excellent exposure of the joint was thus obtained. The spine of the tibia was found to be fractured, just as one would expect after seeing the roentgenogram. The small bone fragments were embedded in fibrous tissue, and in this way attached to the tibia. The crucial ligaments were seen posterior to the fracture, and appeared normal, as did all other structures in the joint. Moving the knee demonstrated that this mass became



Fig. 1 (Case 1).—Fracture of upper end of tibia in the knee joint, with the fragment including the spine of the tibia.

jammed between the femur and tibia and prevented extension beyond 170 degrees. The mass of fibrous tissue, including the bone fragments, was excised, and full extension was then possible. The fragments of the patella were allowed to go back in place, and the longitudinal incision was closed with three chromic and several plain cutgut interrupted sutures. The patella was not sutured. The skin incision was closed with continuous plain catgut sutures. An alcohol dressing was applied and a tight muslin bandage from toes to groin, with the leg extended and the foot elevated.

There was no unusual reaction after the operation, and the wound healed by primary union. Active motion was instituted immediately, and walking was begun on the tenth day. At this time motion was painless and was free from 90 degrees to 170 degrees. The patient left the hospital on the eighteenth day with normal function. The patient was seen two months later and again five months after operation, and at both times walked without a limp, had normal motion, and stated that he had had no discomfort of any kind. A roentgenogram taken after the operation merely showed that the fragments of the tibial spine had been removed.



## COMMENT

This case may be considered solely a fracture of the spine of the tibia. In the majority of cases there is some injury to the crucial ligaments. If this case had been seen early, I believe that the conservative treatment of rest and immobilization would have been tried; but from the findings at operation it was certainly proved that there would always have been limitation of complete extension, and discomfort due to the jamming of the mass between the femur and tibia.

Fracture of the spine of the tibia has never received much consideration, although some of the cases referred to by Fosdick Jones<sup>1</sup> date back prior to 1873. The first operation was performed by J. Hogarth Pringle, and reported by him in 1907. The best account of the lesion was by Sir Robert Jones<sup>2</sup> in 1913, when he reported a group of seventeen cases of injury to the spine and crucial ligaments. Fosdick Jones mentioned these and nine other cases, and also reported seven cases from Denver. This total of thirty-three cases up to this time has led to the belief that the condition is



Fig. 2 (Case 2).—Anteroposterior view showing two fragments of external tubercle of spine of tibia.

extremely rare, but I rather think this is a false impression. So far it has apparently not been considered of sufficient frequency to be noted in textbooks of orthopedic surgery or fractures, as I was unable to learn much on the subject from such sources.

The cause of this lesion is always some severe traumatism, usually something that holds the leg and causes the body to twist violently with the strain at the knee joint. It is associated so frequently with rupture of the crucial ligaments that it more or less makes us consider the two together. In most cases of fracture there is a rupture of one or both crucial ligaments or else a severe injury with torn lateral ligaments and fracture of the tuberosities of the tibia when the spine fracture is really of secondary importance.

The mechanism involved in this fracture may be one of two types. The spine may be broken off by impingement of a femoral condyle, most likely the external margin of the internal condyle, directly on the tibial spine. Freiberg<sup>3</sup> lays considerable stress on the proximity of these two structures, and shows how the spine may injure the condyle in the condition with which he deals. The other possibility, and to me the

most likely mechanism, is that in a twisting injury the strain is brought on one or both of the crucial ligaments, and if they do not rupture they tend to damage the bone at their insertion. Sir Robert Jones refers to this type as an "avulsion." A very unusual case was reported by Kahle<sup>4</sup> of fracture of the internal condyle of the femur by pull of the posterior crucial ligament. In this case the fracture occurred at the upper end of the ligament rather than at its insertion into the tibia. In fractures about the ankle we see fragments of the internal or external malleolus which have been pulled off by the lateral ligaments, showing that the ligaments often can stand more strain than the bone near their insertion. This I consider a parallel condition to our present one.

If cases are seen early, the diagnosis may be made in severe injuries of the knee with signs of pain, tenderness, swelling, limitation of motion, particularly complete extension, and with lateral mobility in some of the cases. When seen late, as in the second case here reported, there may be only slight blocking of full extension, and some discomfort. The diagnosis can really be definitely made only by roentgen-ray examination.

The treatment should be conservative, with ice bag, rest and immobilization, even for many weeks if the patients are seen soon after injury. In the late cases this treatment may be tried, but I believe that operation is most always necessary. If the crucial ligaments are ruptured, they will generally become repaired by the conservative treatment; but in rare cases it may be necessary to suture or reconstruct them.

The operation is best accomplished through a split-patella route, as advocated by Jones.<sup>5</sup> This gives excellent exposure, and does not lead to any ill effects on the structure of the joint.

From the scanty literature, we must assume that the ultimate result in all cases is very satisfactory, as no unsuccessful cases have been reported.

## CONCLUSIONS

1. Fracture of the spine of the tibia is a rather unusual condition, but not so rare as one would assume from reviewing the records.

2. It is due to a severe traumatism, usually of the twisting variety.

3. Rupture of the crucial ligaments is a frequently associated lesion, and is probably due to pull by these ligaments.

4. Diagnosis is difficult without the roentgen ray.

5. Conservative treatment is usually successful in recent cases, and occasionally in old cases.

6. In old cases, particularly with blocking of extension, operation is indicated.

7. Operation through a split-patella incision is the best, and removal of the offending fragments is very easy.

8. The final results are excellent in all cases; for, if the conservative treatment does not give a perfect recovery, operation will accomplish this end.

119 West Fifty-Eighth Street.

4. Kahle, R. R.: Knee Block from Avulsion of Bone Fragment by Posterior Crucial Ligament, *J. A. M. A.* **67**: 33 (July 1) 1916.

5. Jones, Robert: Notes on Military Orthopedics, 1917.

1. Jones, S. F.: *Colorado Med.* **17**: 217 (Aug.) 1920.

2. Jones, Robert, and Smith, S. A.: *Brit. J. Surg.* **1**, No. 1, 1913.

3. Freiberg, A. H.: Osteochondritis Dissecans, *J. Bone & Joint Surg.*, January, 1923.

**Value of Pasteur's Discovery.**—Huxley estimated that the money value of Pasteur's vaccination treatment was sufficient to cover the war indemnity paid by France to Germany in 1879.



APPLICATION OF SWIMMING POOL  
SANITATION TO THE PUBLIC  
BATHING BEACH\*WILLIS P. BAKER, M.D.  
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WASHINGTON, D. C.

The approved sanitation of swimming pools requires attention to certain details of construction, treatment of water used and regulations for the bathers entering the pool. Pools constructed with smooth or glazed walls and rounded corners lend themselves to easy cleansing. An overflow gutter about the edge serves to skim off floating debris and acts as a cuspidor for the bathers. The desire for some active disinfectant within the water itself has made the addition of chemical substances more popular than either ozone or ultra-violet ray treatment, both of which sterilize the water outside the pool. Chlorin is the disinfectant of choice because of its ease of application, either as chlorinated lime or as liquid chlorin, because of its high germicidal property and its low cost. Bathers are usually required to take a complete shower bath with soap before entering the pool, and those suffering from any infectious disease are excluded.

Commonly the pools are of two types: the "fill and draw" pool that is cleaned out and refilled at stated intervals, and the "constant refiltration type," in which the water circulates continuously through certain treatment devices outside the pool, the water being used over and over again.

The nature and source of the water being the same as that supplied to the community for drinking purposes, it is apparent that its control and treatment in

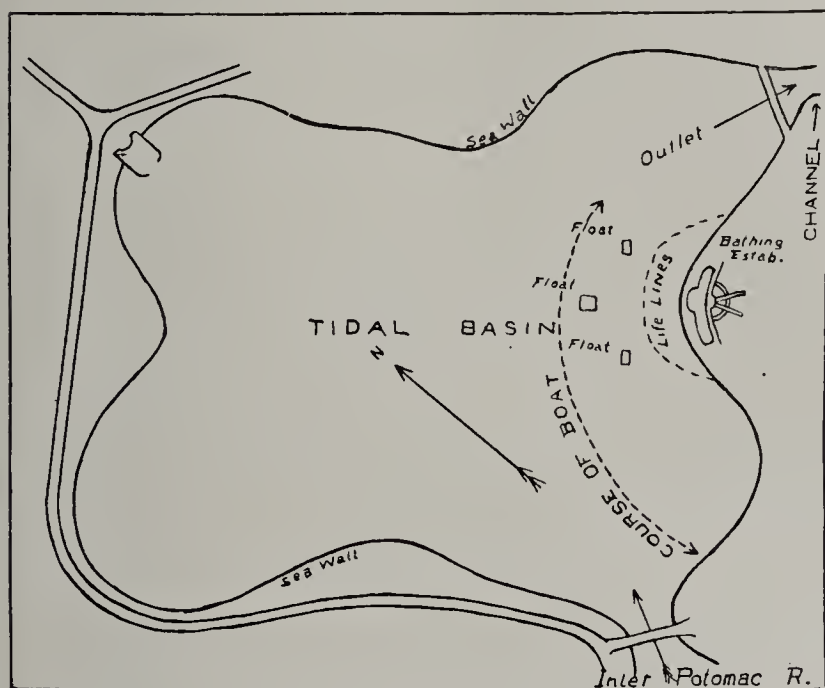


Fig. 1.—Situation of Tidal Basin and route of Chloroboat.

swimming pools aim to prevent the spread of communicable disease from one person to another, by disease germs introduced into the water by carriers of such organisms. A disease virus being liberated into the water by one bather might infect another bather if the germicidal property of the chemical in the water was not sufficient to destroy it. Such infections as the typhoids, dysentery, diphtheria, tuberculosis, common

colds, streptococcus infections, conjunctivitis, skin infections, vulvovaginitis and some protozoal infestations are susceptible of being transmitted in this manner.<sup>1</sup>

The bathing beach on the shore of a lake, river or ocean is not commonly suspected of assuming a rôle in the transmission of these infectious diseases. The reason for this supposed freedom from danger lies in the enormous dilution at once apparent. However, aside from the possible transmission of disease from an infected bather to a susceptible one, the problem of infectious disease arising from water polluted by sewage is becoming more important at the bathing beaches near all large cities. Even when domestic sewage



Fig. 2.—Chloroboat; engine in bow of boat forces water through the chlorination device, the treated water being reintroduced at the stern of the boat through a double hose which extends 3 feet below the surface.

passes through a disposal plant, there is still danger of pollution by the fluid effluent from it. The chemical engineer's statement that he is discharging an "effluent which is clear," of "high relative stability," "non-putrescible," and containing an "optimum dissolved oxygen content" cannot be accepted by the sanitarian as proof that this water is not dangerously polluted with disease producing micro-organisms.

For example, such a clear, chemically satisfactory effluent from the modern sewage disposal plant at Baltimore contains more than 250,000 bacteria for each cubic centimeter, with a high percentage of acid formers (presumptive *B. coli*). Sedimentation, storage, digestion, filtration and aeration have removed the putrescible organic content, but the bacteria contained in the sewage may have largely passed through. Successful chemical disinfection of raw sewage, or the liquid effluent from disposal plants, has been successfully carried out by several municipalities. Here again chlorin seems to be the disinfectant of choice.

## TIDAL BASIN IN WASHINGTON

In Washington, D. C., the public bathing beach is located on the shore of an artificial lake, called the Tidal Basin (Fig. 1). At high tide this basin contains approximately 323,000,000 gallons of water, and is 110 acres in area and 9 feet deep. It connects with, and obtains its water from the Potomac River; a tidal gain and loss equivalent to about one fifth of the volume of the basin occurs twice daily. By means of automatic gates, water enters with the incoming tide from the Potomac River and discharges at ebb tide into the Washington Channel.

Sewage from the city of Washington, with a population of 467,000, is disposed of untreated by pumping it into midstream of the Potomac River, 2½ miles below the bathing beach. Water within the Tidal Basin is highly polluted with this sewage, as is apparent by chemical and bacteriologic analyses.

\*From the Laboratory Division, Army Medical School, and Office of U. S. Public Buildings and Grounds.

1. It is theoretically possible that certain helminth diseases are also transmissible in this way.



## CHLORINATION OF TIDAL BASIN WATER

To overcome this condition, the U. S. Army engineer officer in charge of United States public buildings and grounds has attempted chlorination of the water within the basin. At first the Potomac River water was chlorinated at the entrance gates. This showed a beneficial effect on the water within the basin; but from the bacteriologic point of view it was not wholly satisfactory. In an attempt to attain greater safety by treating the beach water more directly and continuously, a chlorinating apparatus was mounted on a motor boat which could closely circuit the beach, especially during bathing hours, and thus treat this water more directly.

A standard United States Navy motor boat was equipped with a dual M. S. V. pedestal type of chlorin control apparatus. This is a recently developed apparatus, is extremely simple and rugged, and is well adapted to the rough handling and vibration of a small open boat. A high speed four-cylinder gasoline motor connected with a centrifugal pump is mounted in the bow of the boat. The water pressure is maintained within desired limits by regulating the speed of this

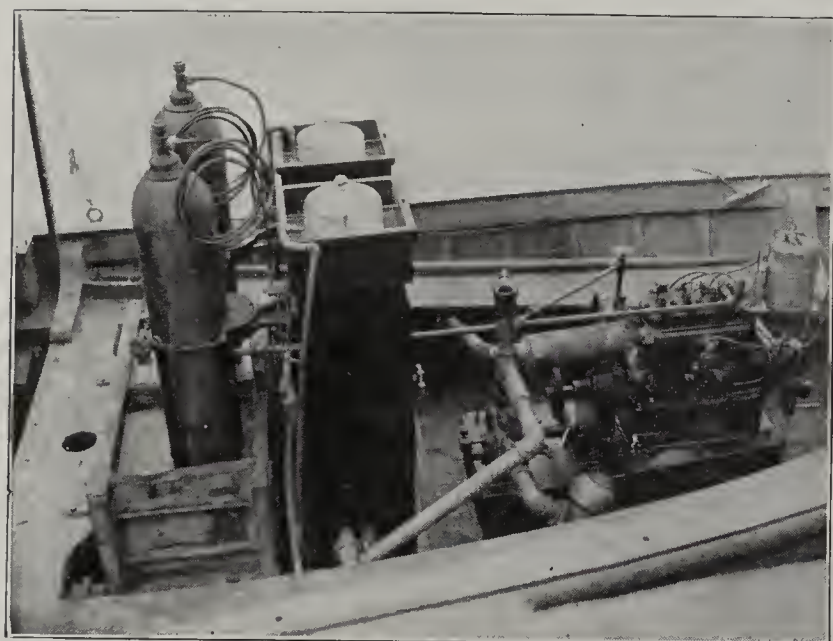


Fig. 3.—Chlorin control apparatus and water pump.

engine, and thus also the rate at which chlorin gas is admitted to, and absorbed by, the water in the vacuum bell jar. Between 600 and 800 pounds of liquid chlorin is introduced daily, chlorination being started one hour before bathers are admitted to the water and continued throughout the bathing period. An attempt is made to maintain a residual chlorin content of between 0.02 and 0.5 part per million in the beach water.

There are two operators in the boat; one, the pilot, attends to the marine engine; the other operates the chlorin apparatus and water pumping engine. The latter man makes frequent rough qualitative tests for free excess chlorin in the water by taking a 50 c.c. Nessler tube of water and comparing the color developed by the addition of 0.5 c.c. of orthotolidin solution with that of prepared standards. The proximity of the boat to the beach and the speed of chlorin introduction are governed by these simple analyses.

During the past season, daily quantitative tests for residual chlorin and complete bacteriologic analysis of beach water were carried out in the laboratories of the Army Medical School. Samples for these tests were collected independently at different hours each day, and at different places and depths within the life lines on the beach. They have shown a residual of chlorin

varying between 0.01 and 0.8 part per million, the average sample showing about 0.2 part per million. The bacteriologic analyses have been particularly satisfactory. From a total count of more than 175,000 bacteria for each cubic centimeter contained in the water entering from the Potomac River, chlorination has caused

TABLE 1.—Sanitary Chemical Analysis (Parts per Million) of Water Entering from Potomac River (Average of Several Determinations)\*

Odor .....	None
Color .....	25
Turbidity .....	Very slight
Total solids .....	115
Ignition .....	Slight charring
Alkalinity as calcium carbonate.....	125
Cl as chlorids.....	15
N as nitrates.....	None
N as nitrites.....	0.008
Sulphates as sulphuric acid.....	None
Oxygen consumed .....	5
Free ammonia .....	0.026
Albuminoid ammonia .....	0.035
Temporary hardness as calcium carbonate..	65
Permanent hardness as calcium sulphate....	95
Iron .....	0.5

\* Standard Methods of Water Analysis, American Public Health Association, 1920.

a reduction to an average of less than 100 bacteria for each cubic centimeter; the *B. coli* in untreated water from 500 for each cubic centimeter to its occasional presence in two or three of five 10 c.c. portions. It has been noticed that anaerobic lactose fermenters are not affected by chlorin of this concentration. These organisms belong to the *Clostridium welchii* group.

TABLE 2.—Bacteriologic Analysis of Untreated Potomac River Water\*

Total count.....	175,000 per c.c.
Total red colonies on lactose plate.....	500 per c.c.
Lactose broth fermentation.....	+ in 0.1 c.c.
Bacillus coli confirmed.....	+

\* Standard Methods of Water Analysis, American Public Health Association, 1920.

## RESULTS OF BATHING BEACH SANITATION

Several hundred thousand persons bathe at this beach each season, and no water-borne infections traceable to such bathing have occurred during the last two seasons. No objection to the chlorin in the water has been made by the bathers. If the concentration of free chlorin is kept below 0.5 part per million, its presence is not even detectable by the average bather. Life guards who have been in the water more or less every day for two seasons have shown no irritation of the skin or mucous membranes.

TABLE 3.—Bacteriologic Analysis of Water on Bathing Beach\*

Total count.....	100 per c.c.
Total red colonies on lactose plate.....	4 per c.c.
Lactose broth fermentation.....	± in 10 c.c.
Bacillus coli confirmed.....	±

\* Standard Methods of Water Analysis, American Public Health Association, 1920.

Regulations at this beach exclude persons suffering from contagious diseases. While such a regulation seems desirable, its strict enforcement does not seem practicable when applied to the general public. The same may be said of the shower bath preliminary to entering the beach. The question of expectoration and cleansing of the nostrils while bathing seems more



serious, and yet 90 per cent. of all bathers do this frequently and quite unconsciously.

It is thought that this chlorin treatment takes care of any ordinary soiling of the water by infected bathers along with the destruction of bacteria from the constant sewage pollution, and that its continuance represents a cheap insurance against water-borne epidemics.

## PRIMARY CARCINOMA OF THE LIVER\*

B. J. CLAWSON, M.D.

AND

V. S. CABOT, M.D.

MINNEAPOLIS

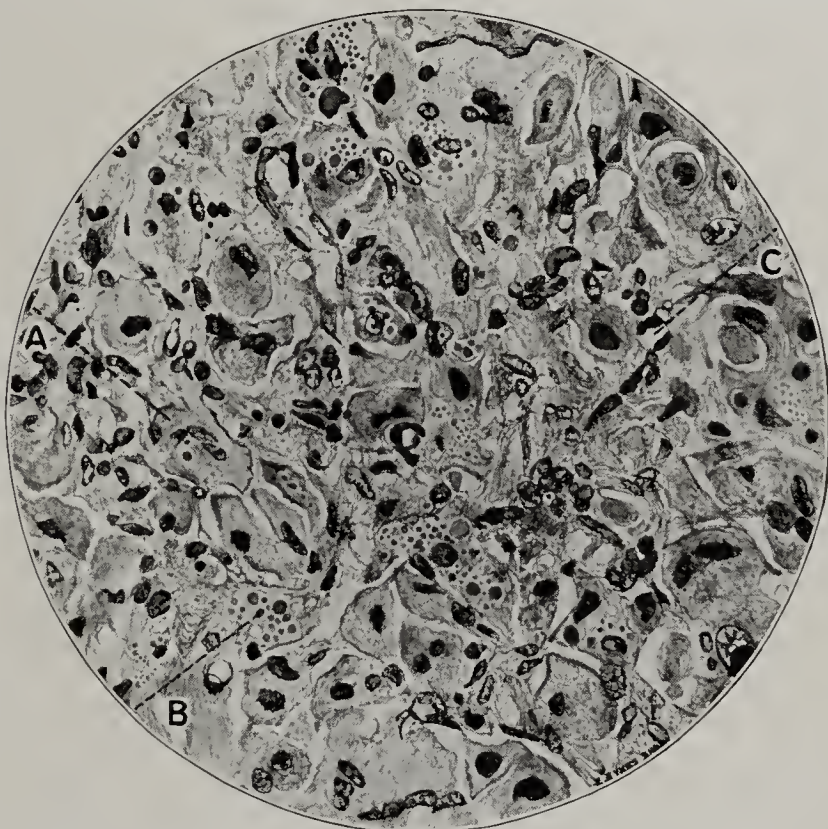
Data concerning primary carcinoma of the liver previous to 1870 are apparently not to be relied on, as primary and metastatic carcinomas were not well differentiated. The many writers reporting primary carcinoma of the liver agree that it is rare. In 1890, von Hansemann<sup>1</sup> gave a report of 258 cases of malignant epithelial tumors of the liver, four of which were primary. Goldzieher and von Bokay,<sup>2</sup> in a series of 6,000 necropsies, found eighteen definite primary carcinomas. Eggels,<sup>3</sup> in his review of the literature up to 1901, reported 163. Karsner<sup>4</sup> reviewed the literature up to 1911, and reported nine cases coming under his observation. Winternitz<sup>5</sup> summarized the reports up to 1916, and decided that primary carcinoma of the liver occurred in from 0.028 to 0.3 per cent. of all necropsies. In a series of 3,700 postmortem examinations at the Johns Hopkins Hospital, he found three cases. Many scattered individual cases have been reported since 1916. In general, these reports agree with those previously given. In the 5,100 necropsy reports at the University of Minnesota there is but one primary liver carcinoma—the one reported in this paper.

This condition has been found at practically all ages. Griffith<sup>6</sup> compiled fifty-seven cases in children ranging in age from 1 year to 16 years. Wollstein and Mixsell<sup>7</sup> reported a case in a child of 4 months. Dansie<sup>8</sup> compiled twenty-three cases in children under 2½ years of age. In the cases reported by Eggels<sup>3</sup> and Yamagiwa<sup>9</sup> the majority were found in the sixth and seventh decades. Karsner<sup>4</sup> concluded that primary carcinoma of the liver was more frequent in men than in women, and occurred most frequently in the fifth and sixth decades.

A relationship seems to exist between cirrhosis of the liver and primary carcinoma. Karsner agreed with most of the reports in stating that cirrhosis was present in almost all cases. In 107 cases reviewed by Winternitz, cirrhosis was present in 87 per cent. Pirie<sup>10</sup>

emphasized the significance of cirrhosis as a predisposing factor in the relatively large number of primary carcinomas of the liver in the natives of Africa, and suggested that schistosomiasis might be the cause, since this has been shown experimentally to be a cause of cirrhosis of the liver. The frequency of cirrhosis is greater in the liver cell type than in the intrahepatic bile duct cell type. Both Winternitz and Karsner are convinced that these tumors are unicentric in their development.

The liver cell carcinomas, according to Ewing,<sup>11</sup> fall into three anatomic groups: the primary massive liver cell carcinoma, the multiple liver cell carcinoma, and the carcinomatous cirrhosis. The first occurs as a single yellowish friable mass in either or both lobes, but mostly in the right. Commonly, several smaller secondary tumors are present in the liver. Both primary and secondary tumors tend to become soft, necrotic and hemorrhagic. The blood and bile color makes them resemble the melanoma from which they



Section of tumor from pancreas, reduced from a drawing  $\times 325$ : A, multinucleated cell; B, bile pigment; C, capillary.

must be differentiated. A more or less wide variation in histologic structure exists, yet there is always a close resemblance to liver cells in morphology and staining properties. The cellular arrangement may be in cords closely resembling liver cell cords, in adenomatous clusters, or all order of cell arrangement may be lost and the cells may assume a diffuse irregular arrangement. The second gross type or the multiple liver cell carcinoma differs from the solitary type by the presence of many tumor nodules throughout the liver, none of which are more definitely primary than the others. The third group shows a diffuse arrangement in a diffusely cirrhotic liver. The individual cells in all these types vary in size and shape and are acidophilic, with large or small, irregular, hyperchromatic or hypochromatic nuclei in which frequent mitotic figures are present. Giant cells and multinucleated cells are frequent. Bile is commonly but not always found in the tumor cells.

Extrahepatic metastasis is not uncommon. Metastasis into adjacent parts, such as the periportal, pancreatic and retroperitoneal lymph nodes, frequently

\* From the Department of Pathology, University of Minnesota Medical School.

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2. Goldzieher und von Bokay: Der primäre Leber Krebs, Virchows Arch. f. path. Anat. **203**: 75, 1910.

3. Eggels: Ueber das primäre Karzinom der Leber, Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's) **30**: 506, 1901.

4. Karsner, H. T.: A Clinicopathological Study of Primary Carcinoma of the Liver, Arch. Int. Med. **8**: 238 (Aug.) 1911.

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6. Griffith, J. P. C.: Primary Carcinoma of the Liver in Childhood, Am. J. M. Sc. **155**: 79 (Jan.) 1918.

7. Wollstein, M., and Mixsell, H. R.: A Case of Hepatoma in an Infant, Arch. Pediat. **36**: 268 (May) 1919.

8. Dansie, C. B.: Primary Malignant Growth of the Liver in Infants, Lancet **2**: 228 (July 29) 1922.

9. Yamagiwa: Zur Kenntniss des primären parenchymatösen Leberkarzinom (Hepatoma), Virchows Arch. f. path. Anat. **206**: 437, 1911.

10. Pirie, J. H. H.: Hepatic Carcinoma in Natives of Africa and Its Frequent Association with Schistosomiasis, M. J. South Africa **17**: 87, 1921.

11. Ewing: Neoplastic Diseases, Ed. 2, p. 682.



occurs. Metastasis into other parts of the liver is common. Catsaras<sup>12</sup> reported a case in which there was metastasis into the head and neck of the right femur. The lungs are a common site in general metastasis. In Eggels' series of 163 cases, definite metastasis occurred in 66 per cent.

#### REPORT OF CASE

A white man, aged 22, was always well until the summer of 1921, when he had several periods of suffering from epigastric pain and nausea, each period lasting three or four days. In March and April, 1922, he had similar attacks. About the last of May, 1922, he began having persistent epigastric pain, which continued until his death, Oct. 30, 1922. The sclera first became icteric, June 22, 1922. A mass was palpated in the liver immediately below the costal margin. The urine contained bile. The blood contained 4,900,000 erythrocytes and 9,100 leukocytes. The blood Wassermann reaction was negative at all determinations. July 8, 1922, the abdomen was explored. About 100 c.c. of a yellow, scrous fluid was found in the peritoneal cavity. The liver was studded with many yellowish masses varying in size from 1 m. to 1.5 cm. The gallbladder was thickened and matted in a mass involving the cystic and hepatic ducts. A diagnosis of inoperable carcinoma was made. The patient made a good recovery from the operation, but his condition grew worse with an increasing icterus until death occurred.

A necropsy limited to the abdomen was made on the day of death. The body was poorly nourished, and a marked icterus was present. There was no ascites. The liver extended 10 cm. below the costal margin, and was much enlarged. A large, whitish, hard nodule was present in the right lobe. Numerous smaller, greenish white nodules were scattered over the surface of the liver. On section, a large tumor mass was seen to occupy most of the right lobe and part of the left. The mass was greenish red to white, was firm, and grossly resembled a melanoma (a tumor from which bile stained hepatomas must be differentiated). Several other similar smaller masses were scattered through the liver. The gallbladder was thickened, and was studded with many tumor nodules. Bile could not be expressed from the common bile duct. An involved lymph node was pushed into the lumen of the hepatic duct. The lymph nodes about the pancreas and bile ducts, and those in the retroperitoneal region were greatly enlarged and similar in appearance to the tumor in the liver. A tumor mass was present in the pancreas which was similar in appearance and consistency to the tumor in the liver.

Histologically, in the uninvolved liver a considerable amount of cirrhosis was present. In the area near to the tumor mass, scattered here and there, were typical solitary tumor cells which showed large irregular hyperchromatic nuclei often containing mitotic figures. Giant cells were present. There were also many lymphocytes and polymorphonuclear leukocytes in the cirrhotic areas. The cirrhosis was more or less diffusely distributed, but the bulk of it was in close relation to the periphery of the lobules. In the tumor mass, connective tissue trabeculae extended irregularly through areas of the tumor. A few bile ducts were present. There was no attempt to form lobules. Many capillaries were found throughout the tumor. The tumor cells were arranged mostly in cords of single cells, which branched and anastomosed. Some areas were adenomatous in appearance, but the large part of the tumor showed a diffuse, irregular grouping of the tumor cells. Large multinuclear cells and giant cells were numerous. The individual cells varied greatly in size. Some nuclei were hyperchromatic, while others were hypochromatic. Many mitotic figures were present. Many of the cells were darkly stained with bile pigment, which was removed from sections by treating with chloroform. This pigment can also be removed by soaking sections for a short time in a 10 per cent. solution of sodium hydroxid. This does not differentiate the pigment from melanin, for some melanins are soluble in alkaline solutions.

Sections of a melanotic tumor were treated with chloroform, but the melanin was not affected. The structure of the metastatic nodules in the pancreas and lymph nodes was similar to that of the large tumor in the liver, except that no bile ducts were found.

This tumor seems to be an example of the massive solitary liver cell carcinoma. It is similar to most of the previously described liver cell carcinomas in structure, in being associated with cirrhosis, and in producing metastasis into adjacent parts.

#### TRYPANOSOMA CRUZI IN THE TISSUES OF THE ARMADILLO\*

BOWMAN CORNING CROWELL, M.D.

CHARLESTON, S. C.

In 1912, Chagas<sup>1</sup> reported finding *Trypanosoma cruzi* in the hind gut of *Triatoma geniculata*, which was collected in the burrows of the armadillo (*Tatusia novemcincta*) in the zone in which American trypanosomiasis is endemic. Following this he found the trypanosomes in the blood of the armadillo, from which he was able to infect guinea-pigs, and these presented all the phenomena of parasitization by *Trypanosoma cruzi*. Since then the trypanosome has been found in

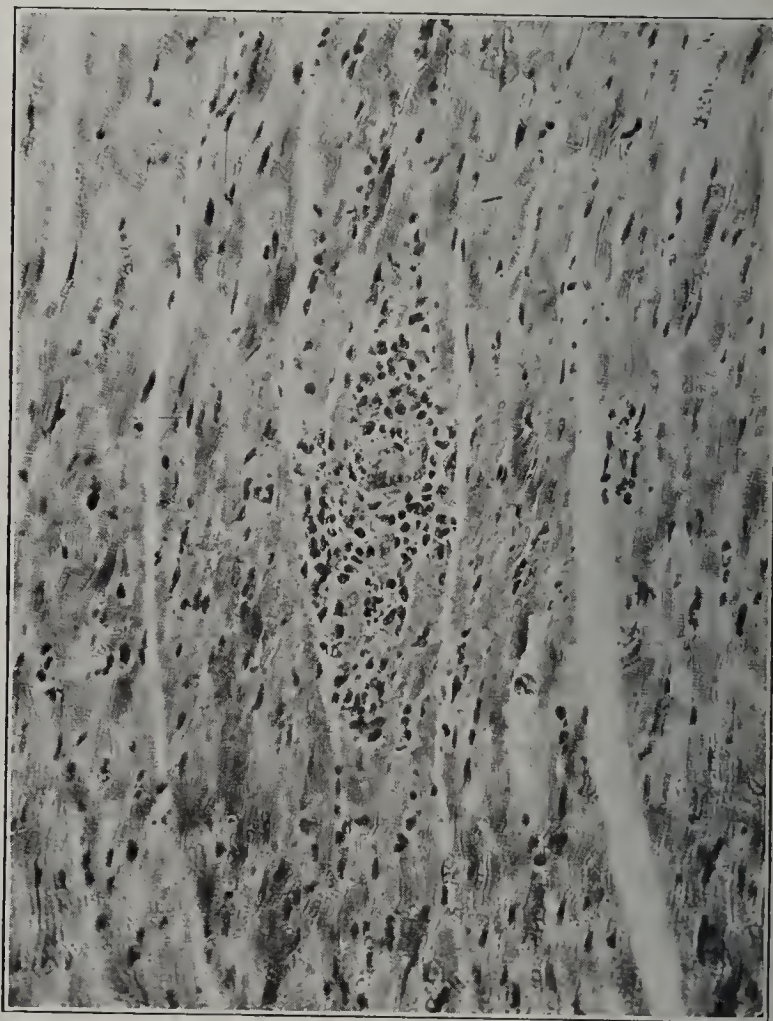


Fig. 1.—Section of heart of armadillo (infested with *Trypanosoma cruzi*), showing perivascular infiltration with mononuclear cells.

the blood of the armadillo in places far removed from human habitations.

From these findings Chagas concluded that the armadillo is the vertebrate reservoir of *Trypanosoma cruzi*. The trypanosome of the armadillo is carried by *Triatoma geniculata*, which accidentally frequents human residences, infecting human beings; and the

12. Catsaras: Liver Cancer with Metastasis in Bones, Ann. de méd. 10: 295, 1921.

\* This work was done at the Oswaldo Cruz Institute, Rio de Janeiro.  
1. Chagas, C.: Brazil-med., 1912, No. 30.



human infection is carried on by *Triatoma megista*. *Triatoma infestans* and *Triatoma sordida* have also been found infected, and Chagas concluded that several kinds of blood-sucking insects may act as hosts to the trypanosomes of vertebrates. He further referred to the possibility that this is a case in which the parasite of a wild animal may adapt itself to the human organism and carry an infection, or, vice versa, that a disease-

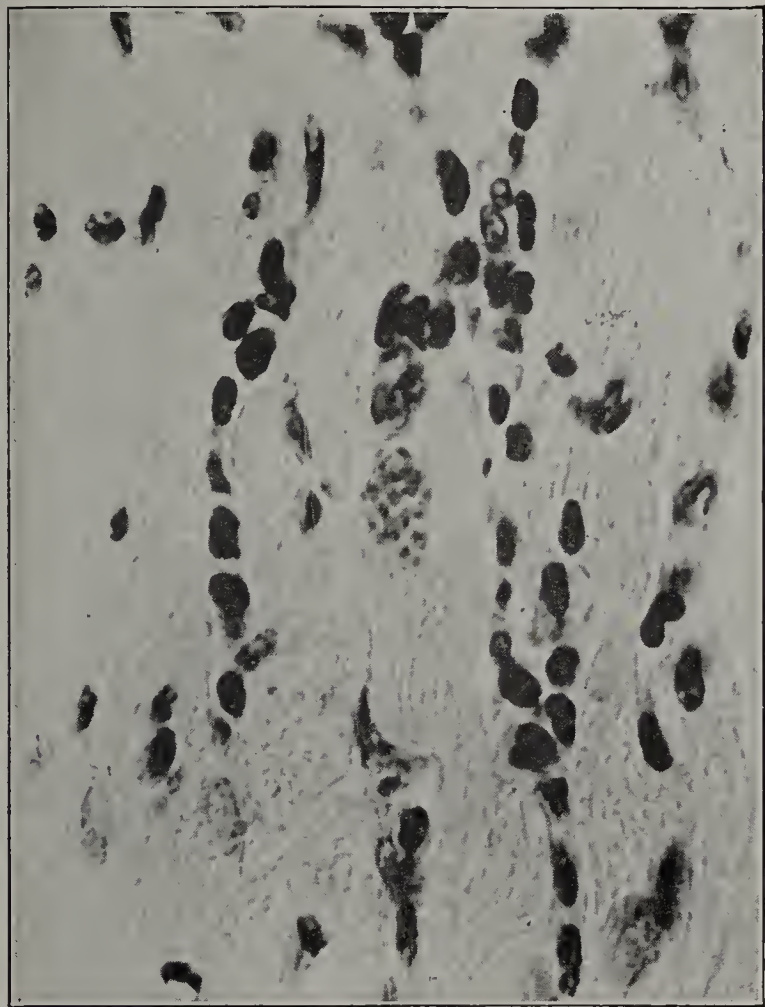


Fig. 2.—Section of heart of armadillo showing parasitization of muscle fiber by *T. cruzi*.

producing parasite of man may adapt itself to a wild animal, perhaps without pathogenic action.

*Trypanosoma cruzi* has also been found in domestic animals, such as the cat and dog, in households heavily infested by *Triatoma megista*, which is generally recognized as the chief transmitter of the human disease.

Up to the present time, the parasite has not been demonstrated in the tissues of the armadillo, nor have lesions attributable to it been described in this animal.

I have recently had the opportunity of examining an armadillo that was brought to the Oswaldo Cruz Institute from Lassance, the center of the endemic zone of Chagas' disease. This armadillo was captured in the wild state and presented a spontaneous infestation with trypanosomes. These trypanosomes were numerous in the peripheral blood, were morphologically identical with *Trypanosoma cruzi*, and infection experiments on guinea-pigs have proved their identity with that parasite.

This armadillo I killed with chloroform, and performed a necropsy at once. The gross necropsy findings were not striking, other than the presence of a hemopericardium due to cardiac puncture performed to withdraw blood for inoculation of the guinea-pigs.

Examination of the heart of this armadillo has shown the presence of lesions of the myocardium, which will be described and illustrated in detail, and parasitization of the cardiac muscle fibers. An interesting finding was the presence of a parasitic thrombus in a small artery in the myocardium, this thrombus being

literally filled with *Trypanosoma cruzi*. The trypanosome in this heart assumes the same rounded, leishmania-like form that it does in the human cases. The trypanosomes were rare in the sections that have been studied, thus presenting an analogy with the chronic cardiac human cases.

Neither lesions of the myocardium nor parasites were found in sections taken from the apex of the heart. Further sections taken from the region of the auriculo-ventricular sulcus showed a marked infiltration of the type that I have come to consider characteristic of the trypanosome infection. Thus encouraged in the search for parasites, I was soon able to demonstrate them as illustrated. The infiltration is almost exclusively of the mononuclear type of cells, occurring in small groups scattered about the vessels and between the muscle fibers. In some cases the accumulations of cells form veritable cuffs about the vessels, of a thickness of from seven to ten layers of cells. Between the muscle fibers there are seen strands of these cells, and there is also a considerable multiplication of the nuclei of the muscle fibers. Fibrosis is not present except to a very slight extent just beneath the epicardium. This lesion is similar in many respects to that encountered in human syphilis, and is identical with that found in human trypanosomiasis. The lesion has not been described as a characteristic of trypanosome infections in the heart when the infection is with other trypanosomes than

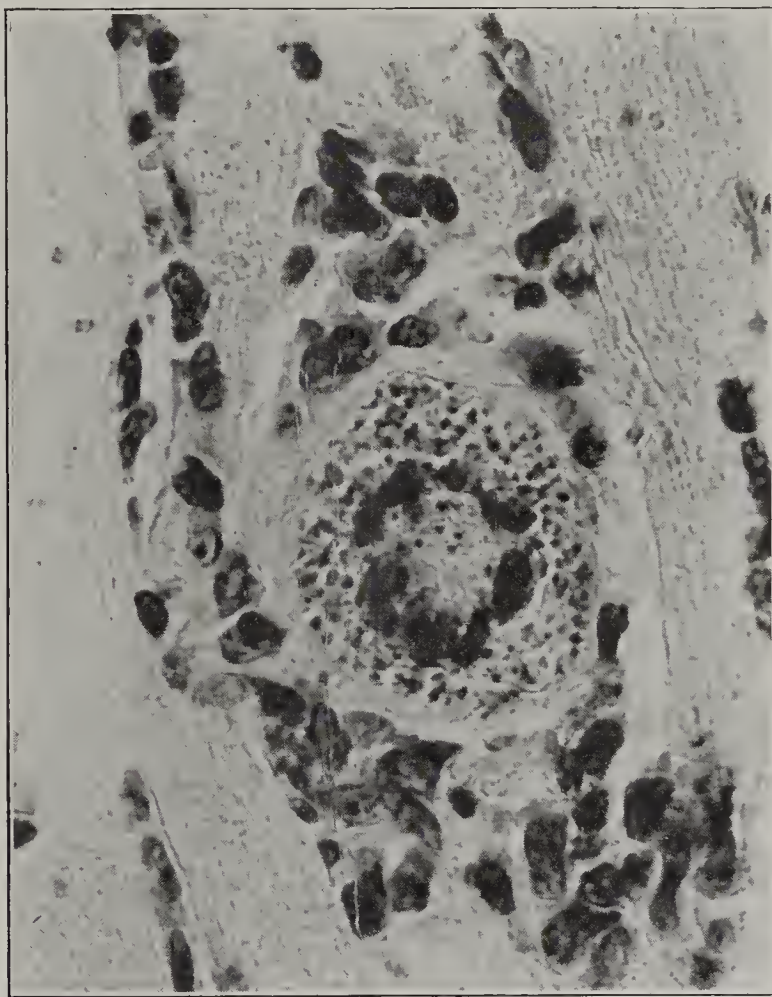


Fig. 3.—Section of heart of armadillo showing *T. cruzi* within a thrombus.

*Trypanosoma cruzi*, but I have abundant material showing that it is a characteristic of this infection, and forms one of the best criteria for the diagnosis of the disease.

The parasitized fiber that is illustrated, when seen in one plane, shows approximately fifteen of the trypanosomes, in some of which all the features of this form of the trypanosome can be seen. In the region of this fiber there is a considerable infiltration between the muscle fibers, but the fiber itself does not appear to



have undergone regressive changes. On the contrary, it appears somewhat broader than the neighboring fibers.

The other organs of this armadillo showed no discoverable histologic lesions that could be attributed to the parasitization.

This finding of the parasite and lesions attributable to its presence in the heart of the armadillo is of significance in showing that the trypanosome is essentially a histoparasite in all animals examined, and that it is pathogenic for the armadillo, although this pathogenicity may be slight.

## CALCIFICATION OF THE OVARY

### REPORT OF CASE

T. C. BOST, M.D.

CHARLOTTE, N. C.

This case is reported because of its interest and because of the rare occurrence of the condition. Moschcowitz<sup>1</sup> in 1916 compiled five cases and made a pathologic study of the specimens. Dicken<sup>2</sup> has since reported another case. The case here reported brings the total to seven. The specimen is the largest on record.

In this group of studied cases, two specimens contained osseous tissue in addition to calcium. They all were of stonelike consistency, with no ovarian tissue present. This does not include the cases in which there were mere deposits of lime in the ovary, which have occasionally been observed by the pathologist and also by the surgeon at the time of operation.



Fig. 1.—Specimen as removed, with fallopian tube attached (actual size).

### REPORT OF CASE

*History.*—B. M., aged 38, married, with one son, aged 16, gave a negative family history, and previous personal history which had no bearing on the case up to the age of puberty. The menses began at 14, were fairly regular and normal for about ten years, and then gradually became very irregular, with menorrhagia and metrorrhagia and severe attacks of cramplike pain in the back and lower abdomen. These grew more frequent and progressively worse, especially as to pain in the back, radiating down the left leg. Also the irregular bleeding became more marked. There were no miscarriages.

1. Moschcowitz, Eli: Bull. Johns Hopkins Hosp. 27:71 (March) 1916.  
2. Dicken, W. E.: J. Oklahoma M. A. 9:107 (May) 1916.

*Examination.*—The general appearance was somewhat anemic, but the patient was well developed and rather obese. There was a slight tenderness over the lower abdomen, and a very hard irregular mass with limited mobility was palpable above the pubes. On pelvic examination, two lateral masses could be made out in addition. All were only slightly movable, with slight tenderness. There was a slight bloody discharge with no characteristic odor. The cervix was apparently normal. Urinalysis revealed nothing abnormal. The leukocyte count was 9,000; red blood count, 3,900,000; hemoglobin, 80 per



Fig. 2.—Specimen sawed open with probe inserted in tube.

cent. Wassermann reaction was negative. The preoperative diagnosis was fibromyoma of the uterus and ovarian cyst.

*Operation and Result.*—The uterus contained a large multiple fibroid about the size of a half-gallon measure; the right ovary was degenerated into a cyst about the size of a small orange, and the left ovary was of stonelike hardness and about the size of a hen's egg. All were involved in very dense adhesions, evidently of long standing. Panhysterectomy was done. The patient made a good recovery and returned home in two weeks. I have recently heard from the patient and from her physician that she has been completely relieved, and is in good health two years after operation.

*Pathologic Report* (by Dr. Eli Moschcowitz).—The specimen consisted of a mass measuring 4.75 by 3.75 by 3 cm., apparently occupying the site of the ovary. A normal fallopian tube was attached to the upper surface of it. The mass, which was long and hard, with a surface rough and shaggy, was slightly uneven, but the general shape was that of a flattened egg. On section, the mass was found to consist of a very dense calcified structure covered by a very thin fibrous capsule. The lower surface of the mass resembled bone in structure, consistency and color. The surface was comparatively smooth and mottled yellow. No soft tissue was noted in any portion. The tissue appeared of uniform bony hardness.

*Microscopic Structure:* There was uniform calcification of a comparatively dense hyaline connective tissue matrix. The lime was deposited in various sized irregular masses, many of which are confluent. The masses were irregular in outline. The edges appeared scalloped or crenated, and the deposition of lime followed the structure of the connective tissue matrix, so that it appeared spongy and even vacuolated. Sometimes the lime had been deposited in a larger connective tissue space, so that it appeared encapsulated. In places, the lime deposit did not quite fit the enclosing capsule, so that there



was a space between the outer margin of the lime deposit and the capsule. This space sometimes contained a granular débris; at other times, the lime deposit contained a central cavity, which was empty or contained the lime granular débris. The connective tissue framework was practically acellular and contained few and isolated blood vessels. In no portion was any formation of osseous tissue noted. The diagnosis was calcification of the ovary.

#### COMMENT

Calcification has been described as occurring in various body tissues. It is not a very uncommon pathologic phenomenon.

In the instances in which this process has been studied, it has been observed that it occurs only in areas of tissue that are dead or inert; for instance, necrotic areas due to caseation or coagulation necrosis, tuberculous glands, pleuritic thickenings, atheromatous plaques, heart valves in the circulatory system, thyroid glands, various kinds of tumors, notably fibromyoma, and walls of various kinds of cysts, walls of long standing hernial sacs, long retained dead fetuses and old scars from traumatic wounds.

Thus, it is observed that calcification possesses a peculiar predilection for connective tissue structures that have undergone sclerotic or hyaline degeneration, which, owing to their complete lack of blood vessels, can justly be regarded as inert tissue. The corpora albicantia can be cited as examples. Moschcowitz, in his study of specimens collected, showed that discrete deposits of lime were made within the hyaline connective tissue matrix, in the corpus albicans as a base, and that these deposits coalesce and form a solid amorphous calcareous mass. This being true, it is

trated with lime. In each instance, the corpus albicans was involved and four distinct stages were recognized: (1) an early discrete multiple deposit within a healed corpus luteum; (2) a definitely circumscribed deposit of amorphous lime within a corpus albicans; (3) the formation of primary haversian canals, and (4) true bone formation.

Calcification occurs only in dead tissue, and ossification occurs only after a preliminary calcification.

Medical Building.

### *Clinical Notes, Suggestions, and New Instruments*

#### A CASE OF ECTOPIC PREGNANCY AT TERM WITH LIVING CHILD

B. J. O'NEILL, B.S., M.D., AND W. W. CRAWFORD, M.D.,  
SAN DIEGO, CALIF.

*History.*—Mrs. B., aged 39, born in Denmark, who had been married thirteen years and had never before been pregnant, was seen, April 4, 1922, when suffering from influenza.

*Examinations.*—Routine examination revealed a pregnancy of about six months. The patient gave a history of regular menstruation up to about six months before, and thought the cessation was due to change of life. She had not noticed any increase in size of the abdomen, and gave no history of nausea or of quickening.

June 6, she was again seen, and a diagnosis of pregnancy of about seven months was made. The heart and lungs were normal; the pelvic measurements were adequate, and the fetal heart tones were clear and distinct to the left of the umbilicus. The urine showed a small ring of albumin and a few casts. The blood pressure was: systolic, 140; diastolic, 90; and there was some edema of the feet and ankles. A rigid diet and rest were prescribed, in spite of which the amount of albumin steadily increased, the blood pressure gradually rose and edema became rapidly more marked, until, June 29, the albumin was 2.1 per cent., by Purdy's method. Casts were very numerous; the blood pressure reached 210, systolic, 155, diastolic, and there was very marked general anasarca, moist râles in the chest and rapid irregular heart tones. On this date, black spots were noticed before the eyes, and severe headache and dizziness developed. The eye-grounds were not examined and no vaginal examination was made. A diagnosis of pregnancy of about eight months with impending eclampsia was made, and an immediate cesarean operation was decided on.

*Operation.*—This was performed at St. Joseph's Hospital, June 29, at 7:30 p. m., under gas and oxygen anesthesia. The abdomen was opened by a right rectus incision, and a dark, bluish, smooth mass, resembling an ovarian cyst, was revealed. On palpation, fetal parts were felt, separated from the hands by a thin membrane, which ruptured almost at once, with a gush of water. The baby was lifted out in the usual way, the head offering considerable resistance. The cord was clamped, and the baby was revived by an assistant, with no more difficulty than is usual in a cesarean section.

After removal of the child, there was a fair amount of hemorrhage, which was controlled by pressure with gauze. Exploration now revealed the presence of a uterus somewhat enlarged and containing a subserous fibroid the size of a half-walnut on top of the fundus, and a large pea-sized fibroid on the posterior surface. The right adnexa were normal. The left tube was about 6 inches (15 cm.) long, and the expanded fimbriated extremity was directly continuous with the cavity formed by the membranes, as shown in the accompanying illustration. The placenta was thin and widespread, being planted on the posterior surface of the left broad ligament and on the sigmoid and the intervening pelvic wall, beside being adherent to both the large and the small intestine. The placenta thus formed the left and upper side of the sac. The left ovary was not identified, but was prob-



Fig. 3.—Roentgenogram of specimen, showing density as compared with steel probe.

quite possible to conceive of this sequence of events. Yet, with the highly specialized function of the ovary, with its many cycles and with a degenerating hyaline connective tissue matrix resulting each time, it is surprising that lime is not more frequently deposited. With such a deposit, it is not so easy to understand why it enlarges to many times the size of the ovary itself, as in the case here cited.

In the cases which go on to the formation of osseous tissue, Moschcowitz has pointed out that the process is entirely analogous to physiologic endochondral ossification, the difference being that, instead of being cartilage, the matrix is hyaline connective tissue infil-



ably spread out in the wall of the sac. Actively bleeding vessels entered through adhesions from the large and small intestines, and some very large vessels entered the placenta from the broad ligament.

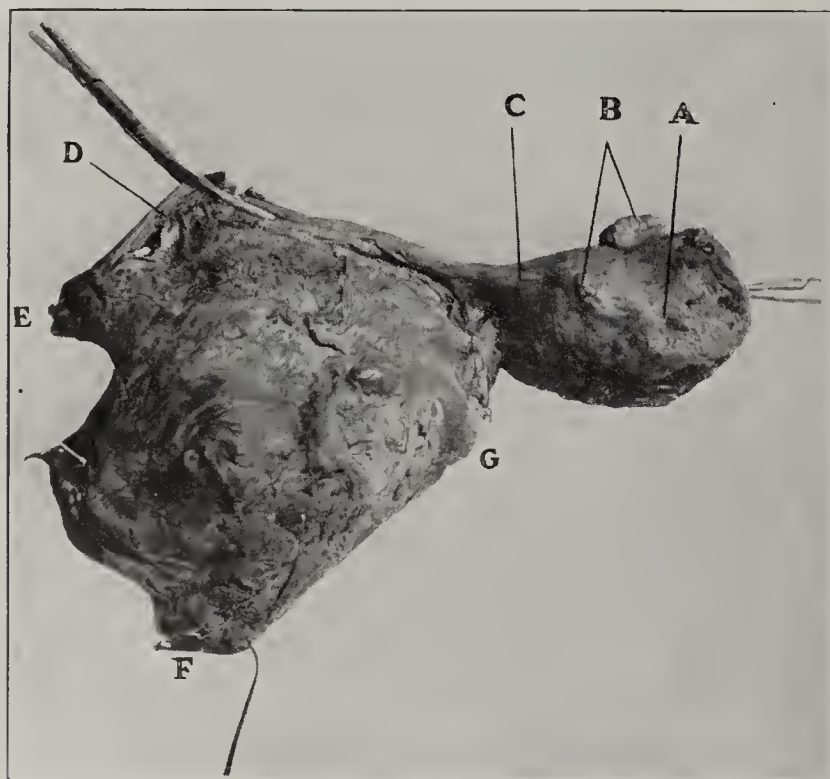
While bleeding was controlled by pressure and clamps, the adhesions were rapidly freed, and the upper part of the uterus containing the fibroids was removed, together with the left tube and the placenta and sac, as completely as possible. A large number of vessels were tied and the raw surfaces covered with peritoneum, the sigmoid being sutured over the stump of the uterus. The right adnexa were conserved. Closure was made without drainage, the entire operation consuming about fifty minutes.

The baby, a boy, weighing 6 pounds and 3 ounces (2,800 gm.), had hair and well developed nails, indicating birth at practically complete term. The skull was somewhat deformed from resting on the sacrum, and there was a moderate calcaneovalgus of the right foot, a marked talipes equinovarus of left foot and a partial dislocation of left hip, with indication of some bony pathologic process in the left knee.

*Course.*—The postoperative course for both mother and child was uneventful. The urine cleared up rapidly, the albumin disappearing in nineteen days. The eyes cleared rapidly; the headaches disappeared, and the mother left the hospital in good condition on the twenty-second day.

Up to the present time, after seven months, there has been no return of albumin, casts or any toxic symptoms. Blood pressure is now, systolic, 130; diastolic, 80. The patient weighs 145 pounds (66 kg.). Normal weight before pregnancy was about 155 pounds (70 kg.).

The baby had slight fluttering of the eyelids for a few days, but no convulsions. There being no lactation, he was kept in hospital five weeks on artificial feeding. At 7 months, his weight is 16 pounds (about 7.3 kg.). The shape of head has improved a good deal, but it is still somewhat deformed. Orthopedic treatments have been carried out since the second month, and the right foot is practically normal. The left foot, knee and hip are considerably improved.



Uterus and portion of sac (posterior view): A, uterus; B, fibroids; C, D, tube; D, beginning of fimbriae; E, F, G, portion of sac, which is adherent to under surface of tube and posterior surface of broad ligament. There is no demonstrable connection between tube and sac at any place except extremity of tube, D.

#### COMMENT

The presence of a complete tube with the sac starting at the fimbriated end and the disappearance of the ovary would indicate that fecundation took place either in the fimbriated extremity of the tube or in the ovary itself. As to the diagnosis of the case, a vaginal examination would have helped to make it more definite, but this was omitted on account of the decision to terminate the pregnancy by cesarian section.

The fact that the uterus did not surround the fetus made the mass smaller than normal, so that pregnancy was apparently of about eight months' duration; whereas, in reality, it was at term.

First National Bank Building—Timken Building.

#### CONGENITAL PERFORATE SOFT PALATE AND DOUBLE UVULA, WITH REPAIR OF PERFORATION

JOHN H. TRINDER, M.D., FORT SAM HOUSTON, TEXAS  
Major, Medical Corps, United States Army

This case shows two anomalies: a defect in the soft palate and two distinct uvulas. Both were corrected at one operation. The tissue for the graft was generously provided by Nature.



Perforate soft palate, two uvulas, with repair of perforation: A, before; B, incision of uvula; C, after.

#### REPORT OF CASE

A white man, aged 26, a private in the Air Service, whose family and previous personal history was negative, had a perforation of the soft palate at birth. In 1920 an unsuccessful attempt was made to close it. On admission to the hospital he had a central perforation of the soft palate, 1 cm. long by 0.5 cm. wide. He also had two normal sized uvulas, symmetrically placed, lateral to the median line of the curtain of the soft palate. His speech was somewhat blowing in character, and he regurgitated fluids. As he expressed it, he "drank water like a chicken," by getting a mouthful and raising his head in the air and then swallowing. He was somewhat under weight, 135 pounds (61 kg.), with a height of 67½ inches (170 cm.). Food often lodged in this perforation.

Oct. 22, 1922, under procain, 1 per cent., by injection, the left uvula was split in the lateral plane, and the dissection extended upward and outward over the soft palate, thus making two mucous flaps. The edges of the perforation were denuded and the anterior flap turned upward and inward, and sutured around the margin of the perforation. The posterior flap was then turned upward and outward, covering the denuded area of the soft palate, extending over as far as the beginning of the tonsillar fold, and sutured in place. Union took place by first intention with the exception of a pinpoint area at the upper angle.

At present the perforation is closed, except a minute hole at the upper angle. The patient no longer regurgitates. The speech has decidedly improved, and he has gained in weight. The accompanying illustrations show the condition before and after operation.

Station Hospital.

#### CONGENITAL DISLOCATION OF THE HIP, WITH INTRACAPSULAR EXOSTOSIS

CARROLL L. STOREY, M.D., DETROIT

*History.*—M. B., aged 13, a schoolgirl, seen, Nov. 10, 1920, complained of pain in the left hip and knee, of one year's duration. The family history was negative for bone tumors or congenital dislocation of the hip. The patient had had no serious illnesses. Birth had been difficult, with breech presentation, and instrumental delivery following version. No abnormality of the hips was noted at this time. The patient walked at the usual time, but had always limped. No relief was sought for the painless limp, until the child was 11 years



of age, when the limp became worse and was accompanied by pain in the left hip and knee. A physician made a diagnosis of rheumatism. The pain and limp had continued.

*Physical Findings.*—The general physical examination was negative. The patient walked with a marked left-sided limp, with characteristic left side-sway when weight was shifted to the left leg. The left leg was  $1\frac{1}{4}$  inches (45 mm.) short. There was limitation of motion in all directions, more marked in abduction and hyperextension. The trochanter was 1 inch (25 mm.) above Nélaton's line. Trendelenburg's sign was positive on the left. Passive motion of the joint was not painful. The diagnosis at this time was congenital dislocation of the hip.

Roentgen-ray examination confirmed this, and in addition disclosed an intracapsular exostosis projecting from the under surface of the neck of the femur (Fig. 1). The other joints were normal.

*Operation and Result.*—Feb. 8, 1921, the hip joint was approached through a Smith-Peterson incision, and the capsule incised, which incision disclosed the head of the femur resting on the wing of the ilium above and behind the acetabulum. Extending downward, forward and inward from the under surface of the neck of the femur was an exostosis about  $1\frac{1}{2}$  inches (40 mm.) long and three-quarters inch (20 mm.) thick at its narrowest part. The exostosis had a broad base, a narrow neck and a mushroom-like head, the surface of which was free and covered with small, cartilaginous excrescences. The growth was entirely intracapsular and free except for a narrow line of attachment to the capsule at the inner border of the base, neck and head of the exostosis. The growth was removed and an attempt made to reduce the hip, but the patient developed shock symptoms and the effort was given up. Following the healing of the wound, heavy traction was applied to the leg for three weeks. Then an attempt was made to reduce the dislocation by the closed method, the

15 degrees outward rotation. There was no adduction or abduction deformity. At this time the patient was under treatment by baking, massage, and active and passive motion. A roentgenogram, July 14, 1922, showed no recurrence of the dislocation, but the head of the femur was being absorbed gradually and with loss of cartilage (Fig. 2). No evidence of the base of the exostosis could be seen. At present (Jan. 24, 1923) the left hip is practically stiff in 25 degrees of



Fig. 2.—No trace of exostosis, July 14, 1922. The dislocation has been reduced; some bone absorption has taken place, and the hip is stiff in a useful position.

flexion and 15 degrees of outward rotation. The patient is able to walk without fatigue and without pain.

The special point of interest in this case is the intracapsular exostosis. I have not been able to find a similar case in a thorough search of the literature. This case presents none of the ear marks of the type of multiple hereditary deforming exostoses described by Ollier and Ehrenfried under the name of chondrodysplasia. A traumatic displacement of osteogenic tissue from the epiphyseal line seems the most reasonable conclusion as to the etiologic factor.

10 Peterboro Street.

#### A SIMPLE, INEXPENSIVE AND EFFICIENT EXTENSION APPARATUS FOR TREATING FRACTURES OF THE TIBIA AND FIBULA

E. M. STANTON, M.D., SCHENECTADY, N. Y.

The principle of a screw-controlled extension apparatus rigidly attached to a divided plaster cast has long been used by a number of surgeons in the treatment of certain simple and compound fractures of both bones of the leg. The screw-extension apparatus so far described has been of a rigidly built type, often quite expensive and procurable only through instrument makers. This type of apparatus is usually not available when needed; and, when it is available, often the mechanical perfection of its construction tends to make it too rigid to be readily adapted to the exigencies of individual cases. The screw extension apparatus employed by me is so constructed that it can be readily fitted to any cast at any point from the ankle to the knee, and can be altered at will to meet any special requirements of individual cases.

Figure 1 illustrates the general construction of the extension units. Six pieces of  $\frac{3}{4}$  by  $\frac{1}{8}$  inch strap iron from 8 to 10 inches long are drilled about  $\frac{3}{8}$  inch from one end with



Fig. 1.—Intracapsular exostosis of left hip in connection with dislocation, Nov. 13, 1920.

Bradford hip machine being used. This attempt was successful. The thigh was immobilized in a position of 90 degrees of flexion, abduction and outward rotation. Roentgen-ray examination showed the reduction complete.

The last cast was removed, Dec. 9, 1921, and treatment given to reduce stiffness. This was not successful. May 20, 1922, under gas anesthesia, the thigh was forcibly adducted and extended, followed by baking, massage and manipulation daily. June 7, 1922, there was three-quarters inch shortening, with 35 degrees flexion deformity of the hip. There was also



a hole a little larger than the diameter of the  $\frac{1}{4}$  inch bolts used for the extension screws. Each piece is bent at a right angle about 1 inch from the drilled end. These pieces are now applied to the cast in pairs and held in place by plaster-of-Paris bandages, as shown in Figures 2 and 3. The holes in each pair of the extension pieces should line up to admit the extension bolts. For extension screws, we use  $\frac{1}{4}$  inch bolts usually 4 or 5 inches long. Each must be provided with four nuts placed one on each side of each extension piece.

The strap iron and bolts can be procured in almost any village, and the extension pieces can be made from the strap iron in a few minutes with a hack saw and a hand drill. If the bolts used for the extension screws are not already threaded along the entire shaft, a  $\frac{1}{4}$  inch die, to thread the bolt down to the head, will also be needed. In Figure 1, one of the pieces of strap iron has been bent to fit the front of the cast over the ankle and foot. We have found it advisable to bend the ends of the irons distal to the extension screws so that they will dig into the cast slightly and thus prevent slipping if the extension is applied before the plaster has had time to set firmly.

In treating fractures by this method, the leg is held in an ordinary pillow and side splint or other appropriate retention

with the fact that the leg is to be handled very gently, and that if he will completely relax and avoid sudden muscular contractions, there will be almost no pain associated with the application of the cast. While the cast is being applied, every effort is made to keep the knee and foot in good orthopedic relationship; but no effort which might produce pain is made to improve the position of the fragments at the site of fracture. The cast is usually allowed to harden for twenty-four hours before the extension apparatus is applied, although it can be applied as soon as the plaster has set.

After the plaster has hardened, the extension irons are applied at three equidistant points, usually one on each side and one in front, with the bolts opposite the point of fracture. Before the bolts are inserted, the cast is cut entirely around at the level of the fracture, and in compound fractures, an additional portion of the cast is cut away, if necessary, to allow for dressings.

Extension is obtained gradually, thus being accomplished without causing pain or exciting muscle spasm. In oblique or comminuted fractures with considerable shortening, we try to gain about  $\frac{1}{4}$  inch a day. In compound fractures in which there is danger of breaking down barriers to infection, we are often satisfied with a slower rate of correction.

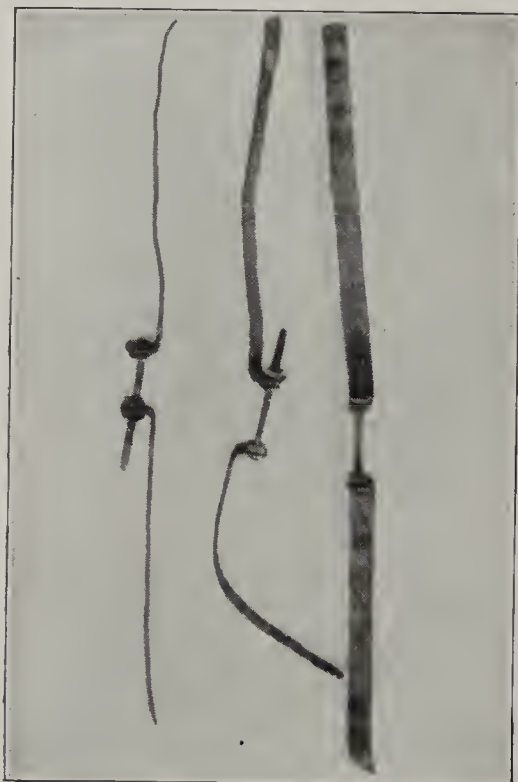


Fig. 1.—A set of extension units separate from the casts.



Fig. 2.—Extension apparatus applied to fracture of middle third of left leg.



Fig. 3.—Extension apparatus applied to fracture of middle third of right leg. Spaces between upper and lower halves of cast are filled in with plaster before the extension units are removed.

apparatus until the swelling has subsided. In compound fractures, if there is no systemic evidence of infection, the original dressing is not disturbed for a period of eight or ten days, after which the dressing is changed and the cast applied. In simple fractures, the cast is applied as soon as the swelling has subsided.

Since the pressure from the extension comes against the knee and foot, it is absolutely essential that these points be properly padded. For this purpose, we use a good grade of felt, about  $\frac{1}{4}$  inch thick, fitted over a cotton stocking. The felt must be cut to fit the knee and foot accurately, and the edges of the felt pieces should be stitched together so as not to become displaced while the plaster is being applied. In compound fractures, a small sterile dressing is applied before the stocking is put on.

With properly applied padding, the extension pressure is applied evenly against the sides of the heel, the malleoli and the dorsum of the foot, and we have never had any trouble due to pressure. In obese patients, we have sometimes observed trouble owing to the upper half of the cast slipping upward over the knee; but, if the cast is applied properly, this is not likely to occur.

Except in children, no anesthetic is used; but before the cast is applied, a special effort is made to impress the patient

The apparatus was originally designed to treat a compound comminuted fracture of the lower third of the tibia and fibula which came into our hands eight weeks after occurrence, at which time there was  $2\frac{1}{4}$  inches of shortening. Full extension was obtained in about twelve days, without anesthesia, without pain and without any exacerbation of the rapidly subsiding infection. Complete extension was easily maintained until firm union had taken place, and the ultimate result was practically perfect. Since then, we have employed this method in all fractures of the leg in which there has been any tendency toward shortening.

Taken together, the three points of extension form a rigid junction between the upper and lower halves of the cast, and yet any one or two can be readily bent so that, by the application of greater extension at one side or by the releasing of the extension at another, any degree of angular deformity may be corrected at will. Even lateral deformities may be corrected by the insertion of wedges here and there.

The ability to obtain and maintain slow, painless correction of deformity without exciting muscle spasm is of distinct advantage in the treatment of simple fractures. In compound fractures, the ability to obtain and maintain gradual correction of deformity is an essential factor of success. Next to



asepsis, the chief rule for preventing infection in compound fractures is to avoid active manipulation in the region of the fracture. Nearly all surgeons realize that it is dangerous to reoperate in a compound fracture until long after the wound has closed. Many surgeons, however, fail to realize that it is almost equally dangerous actively to manipulate the fragments of a compound fracture a few days or weeks after the accident. We have many times seen compound fractures progress without active infection for about ten days, when, with the wound practically healed and no evidence of active infection, the surgeon has felt called on to improve the position of the fragments, with the immediate result of developing an active infection.

With the slow correction method, the first ten days or more of treatment can be devoted entirely to the avoidance of infection. In my practice, this consists chiefly in leaving the original dressing severely alone unless symptoms of active infection develop. Later, shortening and deformity can be corrected by moving the fragments so gradually that protective granulation tissue and other barriers are not broken down, and therefore no opportunity is allowed for active infection to develop.

When union has progressed to such a degree that there is no longer danger of recurrence of shortening, the extension cast may be removed and a new cast applied; or occasionally, as shown in Figure 3, it may be deemed advisable simply to fill in the space between the two halves of the cast with plaster, and then remove the extension apparatus from the original cast.

Medical Arts Building.

CORNPEAL ULCER CURED BY TONSILLECTOMY:  
REPORT OF CASE

CHARLES B. WILLIAMS, M.D., MINERAL WELLS, TEXAS

Mr. P. O. B., aged 35, an oil field contractor, came to me, April 12, 1922, for treatment of corneal ulcer of the left eye. He had been an active, healthy man save for an attack of what was diagnosed as influenza in January, 1922, from which he seemed to have never quite fully recovered. About the middle of March, a foreign body, presumably a small piece of steel, that had injured the left eye was removed in Fort Worth, where the patient remained during the following three weeks under the care of a competent oculist.

When first seen by me there was a shallow ulcer of the left cornea covering the inner third of the surface, with a deep area about 1 by 2 mm. at the upper, inner margin of the pupil. Iritis was not particularly marked. Pain was sufficiently intense to interfere with sleep.

METHODS OF TREATMENT

In routine fashion I examined the patient's nose and throat at the first sitting, giving possibly a bit closer attention than usual on account of the history. The nose and sinuses were apparently normal, as seemed also the tonsils, save for two or three open crypts in the right tonsil, from which was expressed a little mushy debris. The left tonsil appeared normal. The dilated crypts in the right tonsil were cleaned and treated with mercurochrome-220 soluble a number of times during the following month. Microscopic examinations of scrapings from the ulcer revealed nothing significant.

From April 12 to May 13 I tried various methods of treatment. Feeling that there must be some systemic cause for the condition, I repeatedly pressed the patient for a history of syphilis or gonorrhea, but always received a negative reply. Finally I gave the left tonsil a forcible squeezing, and it literally burst open an encapsulated abscess in the submerged upper pole, from which about a dozen drops of thick, creamy pus was expressed. On the following morning both tonsils were enucleated, and the left showed a concealed cavity about 7 mm. in diameter lined with a complete sac, which came away intact. By the third day after operation, the corneal ulcer showed improvement. The patient was discharged ten days after the tonsils had been removed, with the ulcer completely healed.

Special Article

THE CARE AND FEEDING OF  
INFANTS

(Continued from page 847)

[NOTE.—This is the thirteenth of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

FEEDING DURING DIFFERENT PERIODS OF THE  
FIRST YEAR

*The First Four Weeks of Life.*—During the first two or three weeks of life, lesser relative quantities of food must be given than is recommended for later periods. During the first week, skimmed milk may be used in place of whole milk in amounts approximating 1 ounce to the pound of body weight. During the second week, the skimmed milk may be gradually replaced by whole milk, so that at some time during the third week the infant will be receiving one or more ounces of whole milk per pound of body weight. By the fourth week the infant can usually take the recommended 1½ ounces of milk per pound of body weight. Beginning with the addition of 0.5 gm. of cane or milk sugar for each pound of body weight, these can be increased to 1 gm. by the beginning of the second week, and to 2 or 3 gm. by the beginning of the third week. At all times an endeavor should be made to administer at least one sixth of the infant's body weight in water during the twenty-four hours.

Such mixtures must of necessity show a lower caloric value than will meet the infant's needs for growth and development, but, as suggested, the weak formulas should be used for mixtures for the new-born, and the strength increased according to the infant's tolerance. When there is positive evidence that the mother will have an insufficient milk supply, the milk mixtures should be increased in strength somewhat more rapidly during the first two weeks, or larger quantities fed than outlined in Table 27.

TABLE 27.—Diet for New-Born Infants During the  
First Four Weeks of Life

	1st 48 Hrs.	3d to 4th Days	5th to 6th Days	7th, 8th and 9th Days	10th, 11th and 12th Days	13th and 14th Days	3d Wk.	4th Wk.
Milk (whole), ounces.....	..	..	..	3	4	6	8	11
Milk (skim), ounces.....	..	6	8	5	4	4	2	..
Sugar (cane), drams.....	1	1	2	2	2	3	4	6
Water (boiled), ounces....	16	10	8	8	8	8	8	10
Calories in mixture.....	15	81	118	148	158	215	250	321
Feedings:								
Amount in ounces.....	1	2	2.5	2.5	2.5	3	3	3.5
Number daily.....	6	6	6	6	6	6	6	6
Intervals in hours.....	4	4	4	4	4	4	4	4

These mixtures should be boiled for three minutes over the direct flame, or a double boiler may be used. In the latter case the water in the outer vessel should boil for eight minutes. Boiled water should be added to make up the original quantity.

*Additional Foods from the Second to the Sixth Month.*—The milk mixtures may be supplemented by the following additions to the diet:

*Cereal waters* may be used as the diluent beginning with the second month. These are best made from



whole cereals, as the dextrinized flours are devitalized. From one-sixtieth to one-thirtieth ounce (from 0.5 to 1 gm.) of cereal for each pound of body weight may be used for making the amount of cereal water desired in the mixture.

*Orange juice* should be begun during the second month, beginning with one-quarter teaspoonful, diluted with water, twice daily, and increasing gradually until from one-half to 1 ounce is given by the end of the sixth month.

*Cod liver oil*, either phosphorized or plain, should be started by the third month, beginning with 5 drops daily, and increasing to 1 teaspoonful twice daily, by the end of the sixth month.

*Cereal gruels* (oatmeal, farina, cream of wheat) can be started by the beginning of the fifth month. They should be well cooked. The gruel can be added to one of the midmorning meals and later to the evening meal as well, starting with one-half teaspoonful and increasing gradually until 2 or 3 tablespoonfuls is given twice daily.

#### BARLEY, OATMEAL AND RICE WATER

Soak 2 tablespoonfuls of the cereal grains in water overnight, pour off the water, add 1 quart of fresh water, and boil down to 1 pint (which takes about two hours). Add boiled water to make 1 pint, if necessary. Strain through fine cloth. Keep in icechest.

Cereal water may be from barley, oatmeal or rice flours by using 1 rounded tablespoonful to  $1\frac{1}{2}$  pints of water, boiling it for twenty minutes in an open stew pan, and stirring constantly.

#### CEREAL (OATMEAL, FARINA, CREAM OF WHEAT)

2 tablespoonfuls cereal.

$\frac{1}{2}$  pint water.

$\frac{1}{2}$  pint milk.

1 pinch salt.

Cook in double boiler for one hour.

*Additional Foods from the Sixth Month to the End of the First Year.*—A broth and vegetable meal may be gradually substituted for the midday meal. This is best given as a vegetable soup. Feeding should begin with 1 ounce, gradually increased to 8 ounces, 1 ounce of milk mixture being omitted for each ounce of soup given. If less than a full feeding is given, the meal should be finished with sufficient milk mixture, from a second bottle, to make a full feeding.

#### VEGETABLE SOUP (LAMB, CHICKEN, VEAL)

$\frac{1}{4}$  pound of lean meat cut into small pieces.

1 potato, moderate size.

1 carrot.

2 stalks of celery.

1 tablespoonful of pearl barley.

2 tablespoonfuls of rice.

2 quarts of water.

1 pinch of salt.

Finely divide the vegetables. Add vegetables, barley and rice to the water. Boil down to 1 quart, cooking three hours. Add salt. Rub vegetables through a fine sieve. When in season, spinach, tomato, peas and beans may be added to the soup stock, if desired.

If kept in the upper compartment of the icechest against the ice, it may be used on the second day, but never later.

*Strained vegetables* (spinach, carrots, potatoes) may be added in small portions by the eleventh or twelfth months as a side dish. There is little advantage in so using them before this time, for the vegetables in the soup, when rubbed through a fine sieve, are incorporated in the broth.

*Toast or dried bread crumbs* may be added to the soup, if desired.

*Stewed fruits* (apples and prunes) may be fed in small quantities by the end of the first year. So far as their accessory food value is concerned, they are inferior to orange juice.

An infant should be taught to drink from a cup at least once daily in the latter part of its first year. This also holds true for the taking of its semisolids from a spoon.

*Iron medication* may be begun in the second half of the first year or earlier by administering some of the organic iron preparations or small doses of inorganic preparations, such as iron and ammonium citrate, one-half grain, twice daily.

#### EXAMPLES OF APPLICATION OF FEEDING RULES FOR WHOLE MILK DILUTIONS

*Normal Infant, Aged Three Months.*—This infant should weigh 11 pounds (average birth weight, 7 pounds, plus 4 pounds, representing a gain of 5 ounces weekly for thirteen weeks).

Estimating  $1\frac{1}{2}$  ounces of milk per pound of body weight, the result is  $16\frac{1}{2}$  ounces of milk.

Adding 3 gm. of cane sugar per pound of body weight, or 1 ounce for each 10 pounds, the result is  $1\frac{1}{10}$  ounces of sugar, or  $2\frac{1}{4}$  level tablespoonfuls for 11 pounds.

To make the total daily quantity 33 ounces (3 ounces of fluid per pound of body weight) it is necessary to add  $16\frac{1}{2}$  ounces of water to the quantity of milk used.

The baby should be fed five or six times daily, and should receive  $5\frac{1}{2}$  or  $6\frac{1}{2}$  ounces of the mixture at each meal.

For practical purposes cow's milk may be considered as averaging: fat, 4 per cent.; protein, 3.5 per cent.; carbohydrate, 4 per cent.

The amounts of the various elements in the mixture and the grams of each and calories per pound of body weight in the milk mixture as given above, for a normal 3-months old infant, weighing 11 pounds, are given in Table 28.

TABLE 28.—Amounts in Mixture for Normal Infant  
Aged Three Months

	Protein	Fat	Carbo- hydrate	Salts Gm.	Cal- ories
Milk (16.5 oz. = 495 c.c.).....	17.3	19.8	19.8	3.46	346
Water (16.5 oz. = 495 c.c.).....	....	....	....	....	....
Sugar (1.1 oz. = 33 gm.).....	....	....	33.0	....	132
Total mixture (33.0 oz. = 990 c.c.)...	17.3	19.8	52.8	3.46	478
For each pound of body weight.....	1.575	1.8	4.8	0.31	43

We thus find that the infant fed on the prescribed diet receives 33 ounces of the mixture containing: fat, 1.8 gm.; protein, 1.575 gm., and sugar, 4.8 gm. for each pound of body weight.

The infant receives 43 calories per pound of body weight.

Orange juice and cod liver oil should be included in the diet.

It should be remembered that the needs of the individual infant are to be covered, and some infants need food of a higher caloric value for each pound of body weight.

The mixture may readily be strengthened to meet indications for more fat and protein by the addition of milk or cream, and for more carbohydrates by the addition of flour and sugar. With the addition of more milk, the water should be decreased.

Infants inclined to vomit part of the feeding will often retain the food to better advantage by being fed



small quantities (2½ ounces to the pound of body weight for the day) of a more concentrated mixture.

**Normal Infant, Aged Eight Months.**—The infant should weigh 17¼ pounds (average birth weight 7 pounds, which should be doubled in the first five months—14 pounds, plus a gain of 4 ounces a week for the remaining thirteen weeks—31¼ pounds).

The following mixture will be prepared:

One and one-half ounces of milk per pound of body weight, equals 26 ounces.

Water to make 1 quart, equals 6 ounces.

Sugar, 1½ ounces. As previously stated, the amount of sugar to be added is usually limited to 1½ ounces, further carbohydrate needs being furnished by the addition of cereal waters or cereals.

Starch, one-fourth ounce, or 8 gm. (approximately ⅓ ounce, or 0.5 gm. per pound).

This is to be fed in four feedings of 8 ounces each, and the fifth may be replaced by a soup and vegetable meal. A cereal feeding (from 2 to 4 tablespoonfuls) can also be given with one or two of the meals, part of the bottle of milk being poured over it, and the meal being finished with the remainder of the bottle.

TABLE 29.—Amounts for Normal Infant Aged Eight Months

	Protein	Fat	Carbo- hydrate	Salts Gm.	Cal- ories
Milk (26.0 oz. = 780 c.c.).....	27.3	31.2	31.2	5.46	546
Water (6.0 oz. = 180 c.c.).....	....	....	....	....	...
Sugar (1.5 oz. = 45 gm.).....	....	....	45.0	....	180
Starch (0.25 oz. = 8 gm.).....	....	....	8.0	....	25
Vegetable soup (8.0 oz. = 240 c.c.)...	2.0	4.5	8.0	2.4	144
Cereal (1 hpg. tblspoonful 1.0 = 30 gm.)	....	....	15.0	....	50
Total feeding.....	29.3	35.7	107.2	7.86	945
For each pound of body weight.....	1.7	2.1	6.2	0.46	55

Further needs of the individual child may be supplied by concentrating the milk until 1 quart of whole milk is given, the carbohydrates in the mixture being gradually decreased and given in another form, as gruel or custard.

**Underweight Infant, Aged Three Months, Weight Eight Pounds.**—For beginning, this mixture should be prepared: milk, 12 ounces (1½ ounces for each pound of present weight); water 12 ounces; cane sugar, 8/10 ounce (1½ level tablespoonfuls, or 1/10 ounce or 3 gm. for each pound). This mixture is sufficient to make six feedings of 4 ounces each.

To meet the requirements of this infant for growth and development, the needs of a full-weight infant of the same age must be approximated as rapidly as the infant's tolerance for food permits. These increases can usually be made rapidly, if the infant is well other than for its underfeeding. The first increases are made in the carbohydrates by further addition of sugar and cereal water, until one-tenth ounce (3 gm.) per pound of sugar and from one-sixtieth to one-thirtieth ounce (0.5 to 1 gm.) per pound of cereal flour, are added in the form of cereal water. These increases are calculated on the basis of average full weight (11 pounds for this age). The milk can be increased until from 1½ to 2 ounces per pound of full weight, or from 16.5 to 22 ounces for the total mixture is given. The total fluids should represent a minimum of 3 ounces per pound.

If the infant is suffering from digestive disturbances, it may be necessary to begin with 1 ounce of milk or even less per pound of its present weight, that is, 8 ounces or less in the mixture, adding only 1 or 2 gm. of sugar per pound. It must, however, be remembered that the infant will require 32 calories for each pound

of body weight to sustain it; and if it is underfed for too long a period, inanition will result.

With equal simplicity, errors in the mixture received by infants seen in the daily routine of practice may be interpreted almost at a glance.

Example: An infant, aged 5 months, weight 12 pounds, on bottle feedings of milk, 15 ounces; water, 20 ounces; sugar, 2 ounces; feeding, 7 ounces, times, 5. Bowel movement three times daily.

An average infant at this age should have doubled its weight to 14 pounds and should therefore be receiving a minimum of 21 ounces of milk and 1 4/10 ounces of sugar. The error lies in the quantity of fat and protein, which is too small in proportion to the quantity of sugar. This, in most instances, would account for the increased number of stools and subsequent stationary weight.

(To be continued)

## New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

**SULPHARSPHENAMINE.** — Sulpharsphenamina. — The salt, disodium 3,3'-diamino-4,4'-dihydroxyarsenobenzene-*N*-dimethylenesulphonate, NaOSO<sub>2</sub>.CH<sub>2</sub>.NH.OH.C<sub>6</sub>H<sub>3</sub>.As:As.C<sub>6</sub>H<sub>3</sub>.OH.NH.CH<sub>2</sub>.O<sub>2</sub>SONa+4H<sub>2</sub>O, adjusted by the addition of inorganic salt to an arsenic content of 18 to 20 per cent. The arsenic content of 3 parts of sulpharsphenamine is approximately equal to 2 parts of arsphenamine. According to claims, it differs from neoarsphenamine in having two side chains instead of one and in that the sulphur has a valence of four (with an extra oxygen atom) and not two as in neoarsphenamine.

**Actions and Uses.**—The same as those of neoarsphenamine over which it is claimed to have the advantage of somewhat greater stability of solution in the presence of air, and of permitting subcutaneous injection.

**Dosage.**—For intramuscular or subcutaneous use the drug is dissolved in sterile, freshly distilled water in the proportion of about 0.1 Gm. to 0.3 Cc.; for intravenous use a greater dilution is desirable, about 0.1 Gm. to 2 to 3 Cc.

Sulpharsphenamine is an orange yellow powder possessing an odor resembling that of sulphur dioxide and arsine. It is readily soluble in water yielding a yellow solution which is acid to litmus (*distinction from neoarsphenamine which is neutral and sodium arsphenamine which is alkaline*). On standing over night, the solution darkens and a precipitate is formed.

A freshly prepared solution of sulpharsphenamine (1:100) yields no immediate precipitate on the addition of diluted acetic acid, whereas neoarsphenamine yields a precipitate sooner (*distinction from arsphenamine*). The general reactions with silver nitrate and ferric chloride, the tests for the presence of sulphur, the assay and the toxicity tests are the same as those for neoarsphenamine.

**Sulpharsphenamine-Abbott.**—A brand of sulpharsphenamine-N. N. R.

Manufactured by the Dermatological Research Laboratories, branch of the Abbott Laboratories, Chicago, under U. S. patent 1,024,993 (April 30, 1912; expires 1929) by license of the Chemical Foundation, Inc.).

Sulpharsphenamine-Abbott, 0.2 Gm. Ampules.

Sulpharsphenamine-Abbott, 0.3 Gm. Ampules.

Sulpharsphenamine-Abbott, 0.4 Gm. Ampules.

Sulpharsphenamine-Abbott, 0.6 Gm. Ampules.

**Research Library to Commemorate Birth of Copernicus.**—Copernicus, the great Polish astronomer, whose theory that the earth moves around the sun revolutionized astronomy, and who was born 450 years ago, was also a physician. One of the best research libraries in Poland is being erected at Torun, the home town of Copernicus, to commemorate his birth.



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SATURDAY, MARCH 31, 1923

## CIRCULATORY ADAPTATIONS TO EXERCISE

The human body exhibits a remarkable versatility in meeting the rapidly changing exigencies of every-day life. In part, this unusual adaptability, which can rarely be duplicated in mechanisms of human construction, is due to the "extravagance of nature" in the development of the animal organism. As Meltzer once described the situation, numerous important organs and complex tissues are built on a plan of great luxury. Some organs possess at least twice as much tissue as a normal or even maximal activity would require. In other organs, especially in those with an internal secretion, the margin of safety amounts to ten or fifteen times the actual need. It is surely no disadvantage in the long run if Nature is not as economical with her resources in the body as a stricter guardian might demand. Those species that are provided with an abundance rather than a paucity of useful structure and energy, and are thus prepared to meet many emergencies, are presumably best fitted to survive in the struggle for existence.

Another factor of advantageous adaptability is often found in the instances in which one and the same function can be cared for by more than one mechanism. In reference to this, Meltzer has called attention to the vasomotor apparatus. It has long been known that, after eliminating the influences of the sympathetic and the control nervous system, the blood pressure is well taken care of by the peripheral mechanism of the walls of the blood vessels. A further instance of the existence of parallel devices for the accomplishment of one function has been demonstrated anew recently by Meek and Eyster<sup>1</sup> at the University of Wisconsin. It is well known that an increased circulation is one of the conspicuous effects of physical exercise; indeed, such circulatory activity is an obviously indispensable requisite for the transport of essential oxygen and food material to the contractile tissues, as well as the prompt

removal of rapidly accumulating wastes and heat. By an ingenious device for determining the cardiac size and output, the data being computed from the silhouettes secured from roentgenograms taken during the diastolic and systolic phases of the heart cycle, it has been made evident that not all persons respond in the same manner to exercise. Usually the cardiac output per beat is increased by activity, the effect being represented by an average output of 79 c.c. before exercise, which increased to 94 c.c. following work. In a few persons the heart rate alone changed. Sometimes the diastolic size of the heart showed an increase during exercise; often it did not. In any event, the minute volume output always increases with exercise, a characteristic change being represented by the figures 5,900 c.c. at rest and 10,750 c.c. during work.

One cannot avoid concurrence with the belief of Meek and Eyster that in exercise the output of the heart may be increased either by a larger output per beat or by an acceleration of the pulse or by any combination of these two factors. In any event, the outcome is a beneficent one for the body. The multiple protection against unexpected contingencies is not the least of unique superiorities of the devices for human function.

## BIOLOGIC REACTIONS OF ARSPHENAMIN

The complexity of the physical and chemical properties of arspenamin probably accounts for the complexity of the biologic reactions resulting from its passage through the body. Among the most disturbing of these reactions are the nitritoid or anaphylactoid symptoms occurring after intravenous injection. Their frequency and severity are sufficiently marked to continue to attract attention, despite the refinements of technic of preparation and of administration of the agent. In 1918, the number of deaths reported in Germany was 3.8 in 10,000, and in England, 4; complications in England were 16 in 10,000. The extent of the less severe degrees of the reactions is not statistically reported, but is probably considerable, in view of the large number of administrations annually throughout the world.

The earlier studies of the anaphylactoid reactions from arspenamin cleared up certain features, more or less obviously explainable, but left the underlying causes untouched. There were no difficulties in the way of understanding why improperly prepared, acid and precipitated solutions should be deleterious when injected intravenously; why respiratory and circulatory embarrassments were due to cardiac depression and disproportionate adjustments between the systemic and pulmonary circulations; what the effects of emboli and thrombi were when these occurred, and why true anaphylaxis was not the correct explanation. Dosage, and altered functional state of various organs, are

1. Meek, W. J., and Eyster, J. A. E.: Cardiac Size and Output in Man During Rest and Exercise, *Am. J. Physiol.* 63: 400 (Feb.) 1923.



other factors entering into the causes of the reactions. However, there are certain fundamental features about the combining properties of arsphenamin with tissues and cells that were not sufficiently appreciated until the work of Jean Oliver<sup>1</sup> and associated workers at the Department of Pathology of Stanford University. These features probably concern not only the anaphylactoid reactions from arsphenamin, but also its reactions with tissues in general and even with spirochetes. They are based on the conception that arsphenamin can exist in the colloidal state, temporarily at least, and that the temporariness of this state is essential to the anaphylactoid reactions in particular.

Another observation has been that arsphenamin has a fairly constant agglutinating titer for red blood corpuscles of different species, human cells being most and chicken cells the least strongly acted on. The presence of electrolyte is essential for the agglutination; old and turbid, and the clear supernatant fluid of precipitated, solutions do not agglutinate the corpuscles, which bind or adsorb freshly prepared arsphenamin with great avidity. The rôle of the electrolyte (sodium chlorid) appears to be that of precipitant of the adsorbed arsphenamin, presumably in the corpuscular membrane. Precipitation occurs simultaneously with agglutination. Sugar (nonelectrolyte) does not cause agglutination of the adsorbed arsphenamin. It was found further by these investigators that certain hydrophilic colloids, such as gelatin and serum (under proper conditions) protect the erythrocytes against arsphenamin agglutination in vitro. The hemolysis that occurs appears not to be associated with the agglutination phenomenon. These results suggest that agglutination by arsphenamin occurs during the transition stage from its colloidal into a near crystalloid or completely crystalloid state in the circulation, and that stabilization of the colloidal state prevents the agglutination.

The results in vitro were a forecast of the results in vivo; for it was found that the injections of large and repeated small doses into rabbits caused extensive intravascular agglutination and embolism. Single small doses resulted in no demonstrable emboli and thrombi, but, after several days of repeated administration, agglutinated cells were found in the lungs and spleen. Fundamentally, therefore, the adsorbed arsphenamin resulted in clumping of the cells; but, when these existed in small numbers, they were disposed of by phagocytosis and deposited in the various hematopoietic organs (liver, spleen, bone marrow and

lungs) in the usual way known to occur with foreign particles.

From their work, the California investigators conclude that there are two phases to the reactions from arsphenamin: (1) the early or physical phase, which is concerned with the physical properties of the agent, and results in corpuscular agglutination with multiple embolism, the outcome being fatal sometimes, and (2) the later or chemical phase, which results in parenchymatous degeneration of viscera (kidney and liver), this being due to the action of the arsenic ion in the usual way. On the basis of the protection experiments in vitro, protection should be obtained with hydrophilic agents in vivo, i. e., with mixtures of arsphenamin and serum or gelatin; but how this will work out in practice remains to be seen. Meanwhile, the study of biologic reactions from arsphenamin has been advanced along lines that offer the best hope for progress, and, it may be hoped, not only for the elucidation of arsphenamin, but also of other agents which cause anaphylactoid reactions.

#### INTRAPERITONEAL BLOOD TRANSFUSION

Transfusion of blood, an operation which cannot be described as conspicuously simple under any conditions, encounters special difficulties in the very young, in whom the anatomic obstacles call for special skill and training. In the youngest babies, transfusion is often carried out by the anterior fontanel route, which Helmholtz<sup>1</sup> particularly recommended a few years ago. It is doubtful, however, whether injections into the longitudinal sinus should be attempted by the general practitioner. The puncturing of the region indicated is not without its dangers, as has only recently been indicated in *THE JOURNAL*.<sup>2</sup> Furthermore, after the age of 18 months, the fontanel is not usually patent, so that other places of transfusion then become inevitable. Direct transfusion through anastomosis of veins by means of cannulas is a method of theoretical choice; all too often, however, the requisite skill in blood vessel surgery is lacking when relief is imperative.

The difficulties cited have doubtless led to considerable effort to find substitute procedures. Subcutaneous and intramuscular injections have been demonstrated to be unsatisfactory from several standpoints. Falls<sup>2</sup> of the University of Iowa College of Medicine has therefore given renewed consideration to intravenous paths. In view of the frequent impossibility of entering the median basilic vein with success in infants, he has developed the technic of injections of citrated blood into peripheral vessels and especially the external jugular vein. Falls regards the procedure as safer

1. Oliver, Jean, and Douglas, Ethel: Biological Reactions of Arsphenamin, I, The Mechanism of Its Agglutinative Action on Red Blood Cells in Vitro, *J. Pharmacol. & Exper. Therap.* **19**: 187 (March) 1922. Oliver, Jean, and Yamada, So Sabro: II, The Protective Action of Hydrophilic Colloids on the Agglutination of Red Blood Cells by Arsphenamine, *ibid.* **19**: 199 (March) 1922; III, Its Immediate Toxicity as Contrasted with Its Late III Effects, and the Rôle of Agglutination in the Production of the Former, *ibid.* **19**: 393 (July) 1922. Oliver, Jean: The Relative Therapeutic Efficiency of Arsphenamine and Gelatin-Arsphenamine, *Proc. Soc. Exper. Biol. & Med.* **20**: 56, 1922.

1. Helmholtz, H. F.: The Longitudinal Sinus as the Place of Preference in Infancy for Intravenous Aspirations and Injections, Including Transfusion, *Am. J. Dis. Child.* **10**: 194 (Sept.) 1915.

2. Falls, F. H.: Blood Transfusion by the Citrate Method in Hemorrhages of the New-Born, *J. A. M. A.* **80**: 678 (March 10) 1923.



than the injection of blood into the longitudinal sinus; and it is not too difficult technically for the average physician.

At the University of Minnesota, Siperstein and Sansby<sup>3</sup> have investigated a still different method—that of intraperitoneal transfusion of citrated blood. The fundamental considerations for the success of such a plan have been carefully tested on animals. Absorption of blood from the peritoneal cavity was demonstrated to occur rapidly, so that in a few hours as much as a fifth of the estimated blood volume can thus be taken up. There is not merely a concentration of blood volume: the erythrocytes actually enter the blood stream without undergoing any morphologic changes. The intraperitoneal transfusion in both anemic and normal animals causes a sharp, temporary rise in blood values during the absorptive period. This is followed later by a more permanent increase in the blood picture.

Consequently, the process acts as a true transfusion, and not as the absorption of a nutrient material. That the intraperitoneal method with citrated blood can apparently be used in cases in which transfusion is indicated, when other routes are unavailable or impracticable, has been substantiated anew by Siperstein<sup>4</sup> at the Minneapolis General Hospital. Henceforth, the possibility of employing citrated blood intra-abdominally will demand careful consideration in pediatric practice.

#### SOME NORMAL STANDARDS FOR THE DETECTION OF ABNORMAL PHYSIOLOGIC PERFORMANCES

It is of the highest importance that the standards of comparison that are used in medicine, whenever a problem of deviation from the normal arises, should be thoroughly dependable. One can readily understand how futile it is to discuss pathologic excesses of blood pressure, for example, so long as there is uncertainty as to the range of variations in this function which admittedly healthy persons may manifest. A similar statement may be ventured for numerous other features of human physiology, such as the normal ranges of body temperature, the concentration of sugar and hemoglobin in the blood, and the volume and specific gravity of the urine. The number of circulating leukocytes is one of the factors in the organism regarding which information is often sought by the direct method of the "blood count." The existence of a "physiologic" leukocytosis at the height of digestion and after strenuous exercise has long been recognized; but there is frequently considerable uncertainty in the mind of the clinician as to how much allowance should be made

for such normal changes in the numbers of the blood cells. The current belief is that the "digestive leukocytosis" is most marked when a person, after fasting, eats a meal containing large quantities of protein. It is said that under such conditions the number of white cells in the peripheral blood may be increased by about a third, the augmentation being particularly marked in the neutrophilic cells.

It seems worth while to direct attention to the somewhat unusual mass of statistics recently submitted by Feinblatt.<sup>1</sup> Examinations were made on eighty healthy persons, each of whom consumed 200 c.c. of milk after a period of fasting. The normal leukocyte counts gave surprisingly small variations, with an average of 7,400 cells for each cubic millimeter. There was postprandial leukocytosis in every case, indicating averages of 8,800, 9,700, 9,800 and 9,200 white cells, half an hour, one hour, an hour and a half and two hours, respectively, after the meal. The results were so consistent that a postprandial leukopenia may now be looked on as being, beyond question, of pathologic moment.

An illustration of a widely mistaken impression regarding what constitutes normal physiologic function and deviation from it is furnished by many of the current statements about the gastric juice. Carlson<sup>2</sup> has lately called into question the existence of true gastric hyperacidity. Actual hyperacidity, he states, in the sense of a gastric juice of greater than normal acidity has not been demonstrated in any disease, and probably does not exist. The pathologic deviation in acidity is always in the direction toward anacidity. But actual hypersecretion may exist, although we have no accurate measure of the total gastric secretion in normal persons in the course of a day. It is not less than 1,500 c.c., and may be double that quantity.

There is now an abundance of carefully secured evidence that the normal gastric juice of man has an acidity of between 0.4 and 0.5 per cent. hydrochloric acid, although the gastric content usually shows a lesser concentration. Carlson summarizes the best information now available by maintaining that in otherwise normal persons the gastric secretion may vary from hypersecretion, through normal, down to complete anacidity. These variations by themselves do not, therefore, produce disease symptoms. In chronic disorders, gastric secretion and gastric acidity are decreased, on the whole, parallel with the degree of general cachexia. The most important factor in this depression is probably the cachexia of the gastric glands. There is no disease known capable of inducing true gastric hyperacidity. The pathologic deviations in acid and pepsin concentrations are invariably in the direction of a decrease.

3. Siperstein, D. M., and Sansby, J. M.: Intra-peritoneal Transfusion with Citrated Blood, *Am. J. Dis. Child.* **25**: 107 (Feb.) 1923.  
4. Siperstein, D. M.: Intra-peritoneal Transfusion with Citrated Blood, *Am. J. Dis. Child.* **25**: 202 (March) 1923.

1. Feinblatt, H. M.: Alimentary Leukocytosis in Eighty Normal Men, *J. A. M. A.* **80**: 613 (March 3) 1923.  
2. Carlson, A. J.: The Secretion of Gastric Juice in Health and Disease, *Physiol. Rev.* **3**: 1 (Jan.) 1923.



## Current Comment

### THE COUNTRY DOCTOR—A LAY OPINION

In a whimsical essay, "Small Town Stuff," Mr. Burges Johnson laments the gradual disappearance of common sense, and ascribes its departure to the gradual movement of the population from the country to the urban community. The herding together of great numbers of human beings makes for the limiting and specializing of each person's experience. Physicians know the tendency to specialize in city practice, but it is doubtful whether any one has put the matter more humorously or revealingly into words than has Mr. Johnson. To quote:

This conflict between specialization and common sense is well illustrated by the effect of a large city upon the learned professions. "To succeed here you must specialize," says the veteran doctor to his young friend. "Get to know a little more about the duodenum than anybody else in the city, and your fortune is made." So the young man moves forward up a straight and narrow road of learning, whose summit and crown is the duodenum and all that pertains immediately and directly thereto. Other roads may lead to epiglottises or vermiform appendices. Such roads and all the by-paths leading into them he must studiously avoid. The result is that he becomes a great practitioner in a great city. All sufferers as to the duodenum are sent to him, if they can afford it. Great practitioners upon the stomach or the eyeball or the something-or-other-gland refer to him as "my distinguished colleague." It seems almost sacrilegious to refer to him as a big toad in a little puddle, and yet think how small his puddle is! It is no bigger than the duodenum. A patient who comes to him with a commonplace and well located pain must either be persuaded that the pain really arises from the duodenum, or he must be sent to Dr. Jones up the street, whose highly trained and uncommon sense about such pains makes him the only other man in the city to see.

In support of his view, Mr. Johnson cites the statement of Dr. Veiga, out of whose mouth Arnold Bennett says, in "Mr. Prohack":

"I'm admirable on the common physical ailments, and by this time I should have been universally recognized as a great man if common ailments were uncommon; because you know in my profession you never get any honour unless you make a study of diseases so rare that nobody has them. Discover a new disease, and save the life of some solitary nigger who brought it to Liverpool, and you'll be a baronet in a fortnight and a member of all the European academies in a month. But study colds, indigestion, and insomnia, and change a thousand lives a year from despair to felicity, and no authority will take the slightest notice of you."

Of course, the statement of Dr. Veiga is not to be accepted as strict fact. Freud has achieved greatness by concentrating on dreams, and a host of investigators have gained public notice by efforts at the cause of influenza. But there is just enough of satirical truth in it to gain it serious attention! This is particularly the case since Mr. Johnson is led by his consideration to a definite conclusion:

The old fashioned country doctor whose chief asset was his common sense may be as out of place and impossible today as the little red schoolhouse of legendary memory. A more complicated civilization is making greater demands than either can now supply. And yet even today the best type of small town doctor is a better diagnostician than many of the great specialists who have bought their special knowl-

edge at the cost of their common sense. The ignorances of the one may be balanced against the "accidents" of the others.

There are a number of specialists in the problems of medical education and the supplying of physicians to rural communities, who have arrived at the same conclusion as Mr. Johnson, after a more circuitous route of exhaustive investigation. It is interesting to have a fresh view of the subject from such a source, and it may be well to consider whether urban communities might not also be better served by a broad, rather than by a limited, comprehension of the human body and its disease.

### MEDICAL LICENSURE IN MISSOURI

Missouri now has the opportunity of restoring better standards of medical licensure, the governor having signed the bill recently passed restoring the word "reputable" to the medical practice act in the reference to medical schools. About two years ago, a certain element succeeded in inducing the legislature to substitute for this word in the practice law the words "legally chartered." As stated in our editorial at that time,<sup>1</sup> the words "legally chartered" are meaningless, since the worst diploma mills that have ever existed have been chartered, but they have been very far from reputable. The effect of this change, therefore, was to take away from the licensing board the authority to refuse admission to its examinations to graduates of notoriously low grade medical schools. Unfortunately, the bill just enacted cannot correct the harm already done. It will, however, prevent the growth of the evil and encourage those who are striving so hard under many difficulties to maintain proper standards of medical education.

### THE UBIQUITY OF BACTERIA

Micro-organisms are looked on by most persons as unfriendly neighbors from which there is no escape, and many have dreamed of far away lands where the smallest of living forms of matter are unknown. From various reports there is reason to believe that, far from inhabited regions, as on the great oceans or in the unexplored polar regions, the number of bacteria in the air is greatly reduced. That the micro-organisms are nevertheless present even in the virgin soils of the far north can no longer be denied in the light of bacteriologic studies. Barthel,<sup>2</sup> who has had an opportunity to examine samples collected by Wulff in the neighborhood of Cape York and also during one of Rasmussen's expeditions to the north of Greenland, has succeeded in isolating and identifying many familiar species. Not only in the previously untouched soils, but also in the contents of the intestine of arctic animals, is found a motley group of bacteria, yeasts and molds—most, if not all of them, familiar to us of the more contaminated zones. We must therefore admit the ubiquity of the common micro-organisms, whether in the torrid tropics or in Greenland's icy

1. Unfortunate Missouri, Current Comment, J. A. M. A. 76:1251 (April 30) 1921.

2. Barthel, C.: Recherches bactériologiques sur le sol et sur les matières fécales des animaux polaires du Groënland septentrional, Den II. Thule Ekspedition til Grønlands Nordkyst 1916-1918, 1922, No. 1.



regions; and in doing so let us remember that these lowly forms of life, while often baneful, are quite as frequently most beneficent to mankind.

### THE EFFECTS OF RADIATIONS ON CELLS

Radiant energy, whether in the form of rays emitted by radioactive elements, especially radium, or in such manifestations as roentgen rays and ultraviolet light, is acquiring a rapidly growing importance in the work of the physician. The stimulus afforded by the various types of radiation may be beneficial or detrimental to biologic function, the outcome depending in part on the character and dosage, that is, the duration of exposure. For example, ultraviolet rays acting for a brief period on sugar cane may not only facilitate growth but also produce an increase in the content of sugar in the plant.<sup>1</sup> If, however, this optimal amount of radiation is overstepped, the plant being submitted to a longer exposure or to a greater concentration of rays, depression, culminating in complete arrest of physiologic function, is produced. The profound retrogressive changes produced by rays of radium on tissue cells is well known. The explanation for this phase of the reaction has been varied. Some investigators have reached the conclusion that the growth-promoting factors in cells can be inactivated by exposure to radiation; and the therapeutic usefulness of radium in checking the cell growth in tumors has been ascribed to such a destructive reaction. According to other observations, however, another cell factor may be altered. Thus, Packard<sup>2</sup> of the Peking Union Medical College has demonstrated on unicellular animals that one of the physical effects of the radiations is to increase the permeability of the cells by injuring the cell wall. If the treatment is continued long enough, the cells cytolyze completely. From this it follows that when cells are already highly permeable, as they are during growth and division, complete cytolysis quickly ensues; whereas, when the cell membrane is relatively impermeable, as it is in resting cells, radiation must be long continued before destructive cytolysis can be observed. It is only by the study of such details that we can hope to gain a larger insight into the major effects of radiant energy on living tissues.

1. Burns, D.: *An Introduction to Biophysics*, New York, the Macmillan Company, 1921, p. 126.

2. Packard, D.: *The Susceptibility of Cells to Radium Radiations*, *Proc. Soc. Exper. Biol. & Med.* 21: 226, 1923.

**Bedtime Stories.**—It is an accepted fact supported by psychologists that one of the most effective methods of instilling right thoughts and habits into a child's consciousness is by stories told at bedtime, when the child's body is quiescent and the conscious mind drowsy with sleep. The subconscious self, which is then in control, may be molded, by suggestion, into what we desire it to be. The mistake is often made of relating at this hour tales of thrilling adventure and exciting wonder. By such stories, the child is wrought up to a nervous pitch that often persists throughout the night. The bedtime story should be one of Mother Nature, or one illustrating a certain trait of character desired in the child, and should be told with a calm voice such as induces a quiet restful sleep.—Moore, *Nutrition of Mother and Child*, J. B. Lippincott Company, 1923.

## Association News

### THE SAN FRANCISCO SESSION

#### Special Train of the Chicago Medical Society

Arrangements have been completed by the Chicago Medical Society to operate a special train by way of the Chicago and Northwestern, Union Pacific, Denver and Rio Grande Western and Western Pacific railroads from Chicago to San Francisco for the annual session of the American Medical Association. This train will leave Chicago over the C. & N. W. Ry., at 11:30 p. m., Thursday, June 21, and will arrive at San Francisco at 5:45 p. m., Monday, June 25. The train will be composed of the finest equipment, and the schedule has been so arranged that practically all the principal points of scenic interest, including Denver, Colorado Springs, Pueblo, the Royal Gorge, Salt Lake City and the Feather River Canyon, will be passed in the daylight hours.

For accommodation of the members of the Chicago Medical Society who will not find it possible to leave Chicago, June 21, a second schedule has been arranged whereby members and Fellows going to San Francisco may leave Chicago at 8:10 p. m., Friday, June 22, on the San Francisco Overland Limited and arrive in San Francisco at 2:30 p. m., Monday, June 25. Special sleepers will be attached to the regular Overland Limited for the benefit of members of the Chicago Medical Society.

Railroad and Pullman rates from Chicago and other Western cities were printed in *THE JOURNAL*, February 3. Reservations may be secured by communicating with Mr. H. G. Van Winkle, General Agent, C. & N. W. Ry., 148 South Clark Street, Chicago. Dr. R. R. Ferguson, secretary of the Chicago Medical Society, 25 East Washington Street, Chicago, represented that society in the completion of the arrangements for the special trains referred to above.

#### The House of Delegates Will Meet Monday, June 25

The House of Delegates will convene in San Francisco at 10 a. m., Monday, June 25. A number of special trains that have been arranged for the accommodation of Fellows of the American Medical Association will not arrive in San Francisco until Monday afternoon or evening. Members of the House of Delegates should, if possible, time their arrival in San Francisco so as to be present at the opening meeting of the House of Delegates on Monday morning.

#### Diagnostic Clinics at San Francisco

Diagnostic clinics as part of the program of the annual session will be held in accredited hospitals in San Francisco and Oakland on Monday, June 25, and Tuesday, June 26. Visiting Fellows and Fellows of the American Medical Association residing in California will take part in the clinics at each hospital. The San Francisco hospitals in which clinics will be held, and the names of the chairmen of the committees on diagnostic clinics at each hospital, are as follows: University of California Hospital, Wallace I. Terry; Lane-Stanford Hospital, George B. Somers; St. Joseph's Hospital, A. S. Musante; Franklin Hospital, Otto F. Westerfeld; French Hospital, George H. Juilly; Children's Hospital, Robert Langley Porter; Mount Zion Hospital, E. O. Jellinek; San Francisco Hospital, E. B. Frick; St. Francis Hospital, Bertram F. Alden; St. Luke's Hospital, L. J. Schermerhorn; Mary's Help Hospital, F. H. Rodenbaugh; St. Mary's Hospital, Thomas J. Nolan.

Hospitals in Oakland and the names of the chairmen of the committees are as follows: Fabiola Hospital, Daniel Crosby; Providence Hospital, O. D. Hamlin; Livermore Sanitarium, V. H. Podstata.

A central Committee on Diagnostic Clinics has been organized to harmonize and coordinate the clinics of each hospital so as to combine the results of all these clinics into a valuable review of progress in the diagnosis and treatment of a large variety of pathologic conditions. Dr. Walter B. Coffey is chairman and Dr. Edna L. Barney is secretary of this committee. The clinic program is practically complete for some of the hospitals, and plans are being perfected rapidly for the presentation of more than 100 clinics. Fellows



who are interested in these clinics and who wish to participate are invited to send their names and the subject of the proposed clinic to Dr. Frank Billings, secretary of the Board of Trustees of the American Medical Association, 1550 North State Parkway, Chicago, or to Dr. W. B. Coffey, chairman of the Committee on Diagnostic Clinics, 806 Balboa Building, San Francisco.

In addition to the clinics to be held in San Francisco and Oakland hospitals, a number of postconvention diagnostic clinics will be held in hospitals in other places in California on Monday and Tuesday, July 2 and 3. Further information about these postconvention clinics will be presented later in THE JOURNAL.

## ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

*Held in Chicago, March 5, 6 and 7, 1923*

*(Continued from page 854)*

### MEDICAL EXAMINATIONS AND LICENSURE

MARCH 5—AFTERNOON

DR. DAVID A. STRICKLER, Denver, President of the State Medical Boards of the United States, in the Chair

#### Enforcement of the Medical Practice Act

DR. H. M. PLATTER, Columbus, Ohio: It is comparatively easy for an administrative department to control the physician who transgresses, either through suspension or revocation of his license or by prosecution. The issue is clear, and the public supports it. Why is it, then, that when attempt is made to compel the cultist to conform to the same laws, we encounter opposition, not only from the cult organizations but also from citizens, many of whom are intelligent? While there is general agreement that high educational qualifications are necessary to practice medicine and surgery, just what is meant by that phrase is not clear in the public mind, and, therefore, a group of designing individuals may announce some new system of treatment without drugs or operative surgery, and by means of publicity delude the credulous and make them believe the discovery is not medicine or surgery and that any attempt at enforcement of the laws governing the practice of medicine as applied to them is the result of prejudice, bias and jealousy inspired by a mythical "medical trust." To a great part of the public, the phrase "medicine and surgery" means only the giving of drugs or the use of the knife. This narrow conception should be combated by us as individuals, as officials and as educators.

The practice of medicine and surgery means any agency whatsoever employed in the treatment of bodily injury, infirmity or disease. Massage, manipulation, hydrotherapy, electrotherapy and all the other single idea panaceas have been recognized by the medical profession as of value in a limited way for years, and not one of them can cure or relieve all conditions, and their employment in many conditions is worthless, even dangerous. The public regards the cultists as practitioners, whereas they should be classified in the public minds as *limited* practitioners.

Once the public understands that each system is in reality a *limited* branch of medicine and surgery, it will understand also that the field of operation should be limited, to be used only by intelligent persons in selected cases, and at no time should such practitioners in the eyes of the law or the public be placed on an equal plane with the doctor of medicine. I do not think it fair to condemn utterly any therapeutic procedure, nor do I know of any therapeutic panacea. The practitioner of medicine and surgery may use any means his judgment indicates in a given case; he would be foolish to discard all our discoveries and remedies save one, and attempt to employ it in every case.

The task of public education falls to the educator and to the health official. From the first should come a clear statement of the need of preliminary education and professional preparation necessary for medical practice. The various means of therapy that may be used in treatment of cases of a particular kind should be enumerated, and their limitations

defined. The need of education in the fundamentals of the healing art, by which I mean anatomy, physiology, chemistry, pathology and diagnosis, is just as necessary for the cultist or limited practitioner as it is for the physician. The health official, through bulletins and the press, should emphasize that to administer his department efficiently he must have a cooperative and qualified profession; that control of epidemics and complete morbidity and mortality statistics require such qualifications, and that the permitting of unqualified and ignorant persons to care for the sick is a distinct menace to the public health.

Most of our laws are so wofully weak in their penalty sections that enforcement as applied to organized opposition is impossible, and I would recommend that the legal authorities of the several states be consulted and requested to put some action into the penalty section by which an individual offender, even though he is backed by an organization, may be promptly tried and punished. If it is possible for an offender, through appeal and release on bond, to continue in practice while the matter drags through the courts, no prosecution should be attempted generally; it should be reserved for flagrant violation.

I would call attention to the penalty sections of the Louisiana and Ohio laws. The former is superior in that it also includes procedure by injunction. Both are sufficiently active to cause consternation in the ranks of organized opposition, and I hope bring to successful realization the protection of the public.

In 1915, Ohio, in common with many other states, amended the medical practice act to permit the state medical board to examine and license persons desiring to practice a limited branch of medicine and surgery. Fourteen limited branches were specified. The state medical board was empowered to define each branch, make rules and regulations governing their practice, and inspect and recognize schools teaching limited branches. The board has had the assistance of all groups except the chiropractors. These individuals, through schools and associations, defied the department, and prosecution became necessary. In two years, twenty-eight were successfully prosecuted before a jury. Each appealed his case and continued in practice. In 1919 the penalty section was amended to eliminate trial by jury and to provide that each day's continuance in practice constitute a separate offense. Court procedures were invoked attacking the constitutionality of the law, the reasonableness of our definitions, rules and regulations, and administrative acts. All have been sustained. Since Jan. 1, 1923, we have been engaged in a program of prosecution of all unlicensed practitioners. Many have left the state; some are remaining in jail to pose as martyrs, while their sympathizers besiege and petition the legislators to deliver them from the "medical trust," and give them a special board of examiners. We believe their efforts will fail.

#### DISCUSSION

DR. KEMP P. B. BONNER, Morehead City, N. C.: There are two principal reasons for the failure of medical practice laws. First and most important is the failure of the public to appreciate that medical practice laws are for their protection and not for the protection of physicians. The public is beginning to think more seriously, however, of the importance of medical practice laws. For example, two editorials have appeared recently, written by Josephus Daniels, commenting on certain acts which were introduced into the general assembly granting special licensing legislation to individuals. Heretofore the medical profession has been inclined to cloak its methods, and to hold so aloof that the public did not understand the need of practice acts. The next reason for the failure to enforce medical practice laws is the weakness of the penalty sections. A clear definition should be inserted in every penalty section of the medical practice act of every state, because this penalty section is what is presented to the jury in the prosecution of violators of the medical practice act. If the penalty section includes no definition, the jury is free to make its own definition to fit the particular case. That has been a drawback in practically every one of our prosecutions. We could not convict the defendant, because the penalty section was silent as to what constitutes the prac-



tice of medicine. A universal fault in the penalty section of various states is the insertion of the fee and reward clause. It is absurd to place the burden of truth on the party receiving compensation for service rendered, and to imply that he is not guilty because he did not receive money for it. The state should not be interested in what a man receives for service; it is a question of incompetent service. The practice acts of four states in the Union have fee and reward clauses which defeat conviction under the penalty section. In one state, besides the fee and reward clause the act states that a man is not practicing medicine unless he uses some poisonous drug. He can use any drug he pleases so long as it is not poisonous. The enforcement of the medical practice law is best secured through a commission, a board of examiners, or some official body representing the state.

DR. SAMUEL W. WELCH, Montgomery, Ala.: The public is not entirely in sympathy with the idea that medical practice laws are made in the interest of the public, and the cry of the cults, that a medical trust is behind these prosecutions, finds favor with the average jury. We have a great deal of trouble in enforcing violations of the medical practice act against doctors. We had no difficulty until the chiropractors came along. As fast as we put them in jail they appealed to the supreme court, and the supreme court decided that it was a violation of the medical practice act. Each one appealed his case, and in the meantime kept on practicing just the same. I do not know just how we in the Southern states are going to handle the chiropractor invasion. It is the only thing that is giving us trouble. Osteopaths have begun to raise their standards, and are fairly respectable. We have only one examining board in Alabama, and only graduates of Class A medical schools are allowed to be examined by our board. Not a single failure has been registered against any graduate from a Class A school since we adopted that rule in 1918. Prior to that time three fourths of the applicants had failed. I believe that the best way to stop violation of the medical practice act is by injunction.

DR. CHARLES E. HUMISTON, Chicago: The whole country owes much to Ohio for the manner in which it has administered its medical practice act, and for the medical practice act itself. A medical practice act can be enforced the same as any other act, if it is reasonable and brought to the attention of those whose duty it is to enforce laws intended for the protection of the citizens of the state. While I have not had much to do with the enforcement of any medical practice act for Illinois, I took occasion to inform myself as to the conditions in other states and the laws which the other states have. Illinois has a civil administrative code. Our medical practice act must be administered by a layman; this is a step in the wrong direction. It takes a professional man to understand professional questions. The courts generally recognize the treatment of any human ailment by any means whatsoever as the practice of medicine. While the fee and reward clause is useful, it should not dominate the definition. It can be used in some way so that mercenary persons treating the sick by questionable means for money would be reached only by this means. They treat disease under the guise of religion, which can be reached in that way. The medical practice act under conditions in Illinois must not be discriminatory. We have formulated such a bill. As to methods of treatment of disease, we say nothing in the bill except to restrict those to a particular form of treatment, which the license may do, and place a penalty on any method of practice other than the one for which the individual holds a license. The bill we have prepared not only recognizes every one treating the sick in any way, but also recognizes the fact that the practitioner must have a fundamental knowledge of the subject and a knowledge of the human body in sickness and in health, and whoever seeks and asks this high privilege must approach it on the same scholastic plane as every one else. Physicians should help the public to understand what they are doing for the public, and then they will not be misunderstood and maligned as they have been in the past.

DR. ARTHUR T. McCORMACK, Louisville, Ky.: For thousands of years there has developed from time to time, and always will develop, some cult taking up some discarded or

neglected function of medicine. Cults have developed because we have failed to use the knowledge we have for the benefit of sick people generally and specifically. Our medical ancestors were just as violent against our homeopathic and eclectic friends, because they were trying to do something we did not believe in. We thought at one time that they were just as bad as the chiropractors or the osteopaths. The better element of those who become members of any of these cults will have enough influence after a little while really to educate their cults. In Kentucky we recognize all cults or systems under the law. They are given the same examination in the fundamental branches. Whereas we had at one time 267 osteopaths, we now have only twenty-five or thirty in the state. The majority of the osteopaths have graduated in medicine and are now practicing it. It is very important that we carry on educational propaganda with the public and point out the importance of enforcing the medical practice act, which is for the purpose of protecting public health. We are not protecting physicians. We have lots of prosecutions for violation of the medical practice act that are not carried through because we fail to convict, but we ruin a man's reputation by testimony. If a chiropractor or osteopath, after failing in his examination, practices, he is prosecuted. We file his examination papers so that the jury will know he did not know anything. Our lawyer appeals to the jury on that basis, and not infrequently we have a rough and tumble fight. The population in that neighborhood turns out to hear the trial, and our attorney, an ex-governor of the state, a real leader of men, when he gets through, has educated the public to the importance of enforcing the medical practice act.

DR. THOMAS J. CROWE, Dallas, Texas: I have had some recent experience with medical legislation, and I know just what you can do with legislators. After having studied this question for about twenty-two years, I have arrived at the conclusion that one solution of this medical problem, and the only one that will be successful for very long, is a single standard for every man or woman who pretends to treat the sick. You cannot regulate the practice of medicine by legal enactment. Every man who is granted a license, limited or unlimited, will practice everything he knows when he becomes a legalized practitioner. He will give morphin if he thinks the patient requires it. All our men receive the same license, and all are privileged to practice whatever they please, so that a legalized osteopath can give morphin to a patient if he desires. You may not be quite ready for it now, but ultimately you will come to the conclusion that after you have properly established a fundamental education, you can let the question of practice settle itself. The individual practitioner will use his judgment.

#### Some Needed Revisions in Medical Licensure in Accordance with Present Day Medical Education

DR. KENDRICK C. BABCOCK, Urbana, Ill.: This article will be published in full in THE JOURNAL.

#### DISCUSSION

DR. W. S. LEATHERS, University, Miss.: The licensing boards have in a large measure followed in the wake of the requirements of the Council on Medical Education and Hospitals of the American Medical Association and the advanced standards of medical education in our medical schools. The licensing boards are following these standards rather than setting standards for the colleges or the Council, and for that reason it appears to me that a revision of the requirements of the licensing boards should be made from the standpoint of a number of things. In the first place, the licensing board is passing through a transitional stage just the same as many other things in medicine. There was a time when the examining board was especially important to prevent unqualified students from practicing medicine; that was one of the outstanding functions of the board. At that time the examining board served as a stimulus to correct defects in medical education and in medical colleges; but since the Council on Medical Education and Hospitals, in cooperation with the medical schools, has greatly advanced the standards of medical education, it is no longer necessary for examin-



ing boards to shoulder the responsibility of correcting the defects in medical education in medical schools. Students who graduate from Class A medical schools and have been examined by men who are experienced examiners, and have been given the thorough training that is guaranteed by these institutions, should not be required to stand a further examination to practice medicine. I hope that the time will rapidly come when graduates from A grade schools will not be required to stand an examination before any examining board.

DR. ARTHUR T. McCORMACK, Louisville, Ky.: I cannot agree with Dr. Leathers that men who are the graduates of Class A schools should not submit to examination. We cannot ask of our legislature to provide for such discrimination. I believe, however, that we can accomplish the same results if the examining board in each state will associate with the faculties of the institutions in that state and supervise examinations in such a way that they can accept the examinations as legal. For instance, the Illinois board might supervise the examinations given in such institutions as Illinois and Rush, but conduct separate examinations for institutions when the character of the examinations and standards is doubtful. I look forward to the time when it will not be necessary to impose the regulations that Dr. Babcock refers to of requiring an exact number of hours that were necessary at one time. Some schools are still so commercially inclined, however, that an attempt might be made to let students slip by without adequate preparation. Every state board, as rapidly as possible, should recognize that the colleges in Class A are themselves competent to determine the medical curriculum, and we should gladly look forward to the time when the medical institutions will reduce the curriculum and eliminate a lot of things that are now so much dead wood and are not of practical educational value.

DR. THOMAS McDAVITT, St. Paul: All of these laws should cover only fundamental points. A medical practice act should not enter into detail, but should lay down the fundamental facts to manhood and leave the board with enough elasticity to take in all the points that are raised by Dr. Babcock. We blunder along in our medical practice legislation by putting too much in it. As to recognizing the Class A or Class B medical schools, and of excusing their graduates from the examinations, it is out of the question because it is purely class legislation.

DR. WALTER E. LEE, Darby, Pa.: As one of the younger workers on the Pennsylvania state board, my impression, after a few examinations, has been the uselessness of these examinations of graduates. In a conference with the deans of the various schools in our state, I was told that almost invariably the men we turned down in our examinations were those who they anticipated would fail. In one examination there were five men turned down, and when the dean was told that he had five men fail, he named them one after another. The medical colleges are far more competent than we are to judge of the character of men they present to us. We asked them why they send these lame ducks up for state board examinations, and they said that as practical physicians they were competent, but they feared their ability to pass theoretical examinations. Our examinations in Pennsylvania cannot be practical with 200 and 300 men to examine, and they do not compare with the practical examinations which are given by the national board with the few candidates that come before it. A tentative plan which has been discussed is that the state board be furnished by the deans of colleges with the final ratings in the freshman, junior, sophomore and senior years of any of these men as they pass through their undergraduate training, and those that pass during the four years a certain grade be given an exemption for the hospital year to the state board of Pennsylvania. This will eliminate nearly 80 per cent. of those we examine.

DR. BURTON D. MYERS, Bloomington, Ind.: There is one problem the medical schools of America are facing today which members of examining boards may not be acquainted with. Many of the A plus schools are turning away from their doors hundreds of young men who a few years ago would have been admitted. Where do these young men go? Where can they go? I believe the A schools could find some

way of increasing the number of medical students they can take. That can be done by increasing the physical equipment or by doubling the size of the plant. Some of those men who come to us could perfectly well complete their medical course in three years if it were not for the trouble they get into when they come up for examination. If medical education today were organized on the quarter system, so that a student could begin his medical course at two different times during the year, manifestly a greater number of students could be cared for during the year. We could have two groups running at the same time, and the best of these groups could complete their course in three years.

DR. KENDRICK C. BABCOCK, Urbana, Ill.: As dean of a college of liberal arts and as an adviser of premedical students, I know something of how these fellows are looking at the problem, and I know very well the difficulties they are up against. They are perfectly honest, capable, strong thinking fellows, who are desirous of getting into medical colleges, but many of them are blocked by a waiting list. They talk with me during the freshman year as to where they are going to get in, not where they are going to get off, and take their chances with the rest. The matter of adjusting the curriculum to accommodate more students is going to be an expensive one. Every institution considers that it costs a good deal more money to use a plant all the time. You have to have some one to do the work, but it is a serious problem for young fellows where they are going to get their medical education.

#### The Hospital Intern Year as an Essential for License

DR. ALEXANDER MACALISTER, Camden, N. J.: Among the fundamental changes for betterment of medical education are the higher requirements for entrance into the professional school. Most, if not all, of our institutions today demand two years or more of college work of those who are admitted. This better preparation is reflected in the better type of medical student. The school term now consists of nine months, the course has been lengthened to four years, and many states require at least one year of hospital intern service before admitting students to the state board examinations and granting a license to practice. The requirement of a hospital intern year is still a matter of discussion. Its advantage, not to say its necessity, is so apparent that no arguments are needed in its favor. It is a great step in advance to have the prospective practitioner have his early actual experience in practical work under the guidance of experienced members of hospital staffs, to say nothing of the advantage to the patients who are not so often subjected to the danger of being experimented on by the tyro in medicine or surgery. One year of such practice does not make a physician, but the varied experiences and the degree of responsibility it entails are of inestimable value in developing self-reliance and conscientious work. The question of the supply of physicians throughout the country is not so much one of more physicians as of better physicians; and with the tendency to raise the standard of medical education, including the year in training in practical work, there is some chance of supplying this demand. One year should be the minimum requirement. Unfortunately, the economic question is an insistent one, and many of our embryo physicians cannot afford more than the year demanded for this minimum. It should not be reduced where it is in existence, and should be a law in every state. It were well also if there were some uniformity with regard to the essentials of intern service throughout the country. The minimum demanded in Pennsylvania represents what the minimum requirement should be. The Pennsylvania board demands a fifth year of instruction in medicine, consisting of an intern service in a hospital of at least seventy-five beds with medical, surgical and obstetric departments; the intern to serve at least six weeks in each department, during which time he shall have been in attendance or participated in at least six confinements. The hospital should also offer instruction in anesthetics and laboratory work, both clinical and pathologic. Pennsylvania recognizes and gives credit for a six months' service in hospitals having a fixed general staff representing all or most of the departments of medicine, but in which the work performed is largely either surgical or medical, with proportionate oppor-



tunities for laboratory experience. It also recognizes a three months' service in special hospitals, capable of giving a competent and valuable training in certain special lines which they cover: such as hospitals for the insane, for tuberculosis, for contagious diseases, children's hospitals, eye and ear hospitals, orthopedic hospitals, cancer hospitals, and the like. Standardization along these or similar lines together with compulsory intern service in all states would help to increase the supply of good physicians. Such standardization would also go a great way toward avoiding friction and increasing cooperation among the various states, since an internship served in one state would be recognized by other states. With the hospital standardization program established by the American College of Surgeons, as the minimum that is recognized throughout the country, the opportunity for adequate intern service is considerably enhanced and there is reasonable assurance that the chances for adequate practical work will be good. It is only a natural step from hospital standardization to standardization of state programs for granting of license to practice, and I have no doubt that this necessity will gradually become apparent, and that among the standard requirements will be an intern service of at least one year as an essential for license.

#### DISCUSSION: REPORT ON INTERN TRAINING

DR. I. D. METZGER, Pittsburgh: Investigations of medical boards and other interested organizations indicate certain definite problems which need immediate consideration: 1. A clear, definite conception of the province of the hospital as an educational institution. 2. A more or less uniform organization in hospitals which shall offer the best possible care to patients with a maximum amount of helpful information and experience for professional attendants. 3. A systematic course of instruction which mutually aids the patient and student. 4. An adequate equipment for all needful investigations and a record system which tells all essential information pertaining to the case. 5. A type of internship which will render the best training in every department of medicine and will vouchsafe to the community safe, sane, well-informed, well-balanced, responsible, general practitioners of medicine. 6. A catalogue of hospitals in America which indicates the type of service given to interns in each, and which is formulated after an intelligent standardization on the distinctive type basis. 7. An earnest consideration by states, not now requiring it, of the value of the intern year, with a speedy readjustment in legal and medical technicalities so as to make it possible throughout the country. 8. Hospitals to be so sensitized to the requirements of the community that they will be not only rescue centers, but also health centers, from which are sent faithful servants in the care of the sick as well as effective harbingers of disease prevention and of health preservation.

DR. N. P. COLWELL, Chicago: In 1912, we made a survey of the hospitals which were willing to take graduates as interns, and found there were not enough hospitals at that time to provide internships for those who wanted them. Since then, however, the number of hospitals has tremendously increased. Many new hospitals have been built and others have been enlarged, so that they require larger numbers of interns. At present, therefore, more hospitals seek interns than can be supplied from the present number being graduated each year from the various medical schools. That disproportion may not continue to be so marked, since the indications are that within the next three years the number of graduates will be greatly increased. The number graduated this year was small—those who entered in 1918, the war year. Based on the numbers of students enrolled in the next three classes, there will be about 3,000 graduates this year; 4,000 or more in 1924, about 5,000 graduates in 1925—the largest number since 1906. For that reason there may be enough graduates to supply the hospitals that are worthy of obtaining them. Some hospitals which want interns should not have them. All hospitals should be investigated to see which are in position to provide a satisfactory training for interns. In some hospitals the interns are merely orderlies, or are turned loose in the hospitals, without instruction or supervision, and therefore get little out of their internships. An internship

ought to be a year of more advanced instruction than the last clinical year in a medical school; and if it can be made that, it will be of real value to any graduate.

DR. WILLIAM DICK CUTTER, Albany, N. Y.: When we issue a license to a man to practice medicine, we by no means certify that he is competent to practice medicine in all its phases and qualified to deal with emergencies that may arise in the course of his practice. If we certified to any such thing as that, we would have to extend the course of training to five or ten years more than at present. I should like to quote the words of President Hadley to one of the graduating classes at the Yale Medical School. He said: "Young gentlemen, your education is not now completed but only just beginning. Do not think you have learned to practice medicine. You have acquired merely the tools of medicine; you get your education as you go out into practice, and we hope you have been so taught to use these tools that you will learn to do things correctly." I agree with Dr. Colwell that a year of internship, if it is required, should be a period of instruction, not merely a period of service as an orderly in a hospital. At present, however, in very few hospitals is the work so arranged that an intern really acquires any additional instruction, experience or responsibility which is at all commensurate with the time he is obliged to give. Before we undertake to require that our medical students should go through this period of training, we ought to be in a position to tell them where their time can be profitably spent.

DR. WILLIAM PEPPER, Philadelphia: I am sorry to hear the last speaker in a way cast discredit on the hospital year, because I think it is the most important year of all. We all acknowledge and admit that it is not what it might be or what we should like it to be. We cannot control these outside hospitals. We cannot say that all these staffs have proper instructors, but what we can do is to improve them. The best way to improve teaching hospitals is to improve the work which the interns get there by some sort of control. About ten years ago I read a paper in favor of the state control of the intern year, and I am still in favor of that method of requiring that year. Pennsylvania, through its medical board of examiners, has done a great deal to improve matters in the hospitals of the state. Our graduates who go into intern services in the hospitals of the state are getting better service than they did. When this law went into effect, the hospitals thought it was a good thing for them because it gave them control over the interns. They now find they are the ones who must improve, and the state board has control over them more than it has over the interns. Before the law went into effect, nearly all the graduates in the schools of Pennsylvania had served internships, so that it did not force, except in a few instances, a man to take that important year of work. I look on the state law as justly beneficial on account of what it has done to improve matters in hospitals.

DR. THOMAS J. CROWE, Dallas, Texas: We made an effort to get the hospital year as a statutory qualification in the medical practice act of Texas, but find that the legislature is not yet prepared for it. I believe that in the study of this matter we have been too specific about some things in our qualifications. I believe we have hampered a great many ambitious men by being too specific in our two year pre-medical college requirement. I know some young men who have been kept out of medicine because of that specific requirement. The man that has pride, the man that can get along and get through in less time, should be taken care of.

DR. AUSTIN A. HAYDEN, Chicago: I am very much interested in the administration of the fifth year or hospital intern year. It seems to me that, rather unawares, a new medical school has been formed in the United States which very soon will be national in character. This new medical school, as Dr. Colwell has informed me, will have this year a membership of about 3,000. Next year it will be 4,000, and the following year about 5,000. The faculty to a considerable extent consists of men who are doing general practice or men who are not connected at present with teaching institutions. When you come to see the number of hospitals that are not connected with medical schools that house interns and instruct them, you will find that the majority of interns are receiving



their fifth year of instruction in that sort of institution. I believe that the proper regulation or proper standardization of that year constitutes perhaps the most important medical educational problem the profession, as well as state examining boards, has to do with. By all odds the fifth year is the most important year of the entire five. Medical students themselves are a factor in deciding the desirableness of a hospital internship. Verbal information has been handed from one intern to another that a certain hospital has been deemed desirable or undesirable for interns. The hospitals in Chicago are mostly of the rotating type of service and of one year's duration. It is most desirable to establish this type and length of service as the standard for the fifth year requirement. The single service is not an adequate preparation for the graduate of medicine. The special and single service hospitals should be reserved for postgraduate use.

DR. S. G. DAVID, Grand Rapids, Mich.: This discussion has been of the utmost importance to me. A few years ago the American College of Surgeons, without any particular authority, attempted to introduce into the hospitals of the country a standardization program. You are all aware of the trials and tribulations they have had in attempting to secure anywhere near 100 per cent. perfection. They set up minimum standards and sent investigators to determine whether the staffs were beginning to live up to these standards. Last year, at one hospital session in one of our states, it was said that there were not three of all the hospitals in the state where the staffs were fulfilling 90 per cent. of the requirements of the American College of Surgeons; yet it has done a great deal toward improving the practice of medicine where a standard has been established in hospitals. From my knowledge of hospitals throughout the country, the intern is getting the poorest and lowest type of training. In all honesty and fairness to the medical student, those states that demand a fifth year should standardize the service and the teaching of the intern in the hospital that he goes into. If the staff is not able to set up standards, then that hospital has no right to an intern, nor has the state a right to permit that young man to go to that hospital.

(To be continued)

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**County Hospital Opened.**—The Mobile County Tuberculosis Sanatorium, at Cottage Hill, was formally opened to the public, March 4. More than 1,000 persons attended the opening exercises, and each person, as requested, brought a book for the hospital library. Dr. Lee W. Roe and Dr. Edward S. Sledge will be the attending physicians at the new institution.

### ARIZONA

**State Tuberculosis Association Elects.**—At the annual meeting and banquet of the Arizona Antituberculosis Association, February 15, the following officers were elected: president, Gen. John C. Greenway, Douglas; vice presidents, Drs. Samuel H. Watson, Tucson, John W. Flinn, Prescott, and the Rev. B. R. Cocks, Phoenix; treasurer, Dr. William Warner Watkins, Phoenix, and secretary, R. C. Cuvellier, Phoenix. Arthur J. Strawson of the National Tuberculosis Association addressed the assemblage.

### CALIFORNIA

**Higher Requirements for Pharmacists.**—Senator Crowley's bill for higher standards for pharmacists was favorably reported out of the senate public health and quarantine committee, March 9. The bill requires of applicants for license to practice pharmacy a minimum age of 21 years, American citizenship, and a five years' college course. The state board of pharmacy is backing this measure.

**California Institute of Technology Given Endowment Fund.**—Mr. Arthur H. Fleming of Pasadena, for many years president of the board of trustees of the California Institute of Technology, has recently given to the institute \$4,200,000 as a permanent endowment fund. This, with previous donations, makes a total of more than \$5,000,000 given by Mr. Fleming. Conditions made by the donor are that the institute limit its enrolment to not more than 2,000 students, and that it continues to specialize in research in chemistry and physics.

**County Medical News.**—Orange County has appointed Dr. William Leland Mitchell as full-time health officer.—Monterey County has appointed Dr. Bailey T. Tally as county health officer on a full-time basis. Dr. Tally, formerly of North Carolina, has been selected county health officer of Monterey County to succeed John A. Beck.—The Riverside County Medical Society gave a banquet to Dr. John C. King, Banning, on his retirement from active practice, and decided to form a medical library to be known as the John C. King Memorial Library.

### CONNECTICUT

**Personal.**—Dr. Millard Knowlton has been appointed epidemiologist of the Connecticut State Department of Health, beginning April 1.—Dr. Ethel C. Dunham, instructor in the department of pediatrics at Yale School of Medicine, New Haven, read a paper on "Earliest Signs and Symptoms of Rickets," before the New Haven Medical Association, March 20.—Dr. Howard A. Kelly, Baltimore, who was a guest of the staff of Grace Hospital, New Haven, held a surgical clinic at the hospital, March 16. A dinner was given for Dr. Kelly at the Graduates Club.—Dr. William S. Miller, associate professor of anatomy at the University of Wisconsin Medical School, Madison, gave a series of lectures, March 7-14, at the Veterans' Bureau Hospital, New Haven, in connection with the school of tuberculosis.

### FLORIDA

**New Medical Society.**—The Jacksonville Medical Society, recently organized, met, March 6, to adopt a charter and elect officers. Dr. Perye E. Watts was elected president, and Dr. Alvah H. Weathers, secretary-treasurer. Forty-six physicians of Duval County comprise the new society.

### GEORGIA

**Hospital News.**—Work will start at once on the \$300,000 Steiner Memorial Hospital to be erected at Atlanta. The hospital will be used for the free treatment of cancer, and will be operated in conjunction with the Grady Hospital.—The Carrollton Memorial Hospital at Carrollton has been closed owing to lack of funds, it is announced.

### HAWAII

**Medical Society of Hawaii.**—The annual meeting of the association will be held in Honolulu, April 28-30, under the presidency of Dr. J. E. Strode. Dr. W. K. Chang is secretary.

**New Building for Queen's Hospital.**—A new four-story concrete addition is under construction at Queen's Hospital, Honolulu, which will increase the capacity to 256 beds, and makes this the largest and most modern hospital in the islands of the Pacific. The approximate cost of constructing the addition will be \$500,000.

### ILLINOIS

**Full-Time Health Officer for Peoria.**—It is reported that the city council in Peoria has appropriated \$4,500 for the annual salary of a full-time medical health commissioner, and \$1,800 for a full-time experienced milk inspector.

**Addition to St. Margaret's Hospital.**—An addition to St. Margaret's Hospital, Spring Valley, will be erected at a cost of \$110,000. The new structure will be six stories high, and will join the north end of the present building. The work is to be completed by December 1.

**Personal.**—Dr. Edward V. Anderson, Woodstock, for forty-two years physician to the McHenry County Poor Farm, has resigned and will reside in San Diego, Calif.—Dr. Daniel D. Raber, Bloomington, was reelected county physician for the third term by the board of supervisors, March 7.

**Whooping Cough Test at Lincoln School.**—Through the cooperation of the state department of public welfare, the department of public health is studying the intracutaneous test for the early diagnosis of whooping cough, at the



Lincoln State School and Colony. More than a hundred tests have already been made.

**Physicians and Undertakers Fined.**—Drs. William F. Lambkin of Watson and Harry A. Dimond of Dietrich were fined \$5 and costs recently, for failure to report births in accordance with the law. J. A. Johnson of Effingham and George W. Markwell of Newton, undertakers, paid fines in the same amount for violating the law which requires the obtaining of burial permits prior to interment. Court action in each case was instigated by a special field agent of the state department of public health.

**Society News.**—The Montgomery County Medical Society, at the annual meeting at Litchfield, elected Dr. Christian H. Zoller, Litchfield, president, and Dr. Charles H. Lockhart, Witt, secretary-treasurer.—Dr. Bransford Lewis, St. Louis, was the guest of honor at a dinner given by the Adams County Medical Society at Quincy, March 12. Following the dinner, Dr. Lewis gave an illustrated lecture.—Dr. Edwin W. Ryerson, Chicago, professor of orthopedics at Rush Medical College, was the principal speaker at a meeting of the Rock Island County Medical Society, March 13, at Moline.

**Health Promotion and Safety Week.**—April 22-28, inclusive, has been set aside by a proclamation of the governor for the annual observance of health week in Illinois, the occasion to be known as "Health Promotion and Safety Week." The safety feature has been added with the idea of bringing strongly to public attention the importance of preventive measures against automobile accidents, which have increased at an alarming rate in the state. The other items on the program will relate chiefly to public health measures, such as frequent physical examinations, maternity and child hygiene promotion, the application and extension of sanitary measures and the importance of safe milk supplies. A definite program for the occasion has been worked out by the state department of public health, and information relative thereto may be obtained on application.

#### Chicago

**Psychologist Arrested.**—It is reported that Premel E. Adoros, teacher of psychology and head of the Transcendent Scientist Society, was arrested, March 17, for violating the medical practice act, after he had prescribed for a patient.

**Dr. Geraghty Addresses Medical Society.**—Dr. John T. Geraghty of Baltimore addressed the Chicago Medical Society, March 28, on "The Present Status of the Treatment of Malignant Diseases of the Prostate and Bladder." The address followed a dinner in honor of Dr. Geraghty given by members of the society at the Hamilton Club.

**Improved Medical Service for Prisoners.**—Under new regulations adopted by the sheriff, prisoners with venereal disease, will be segregated, and provision made for a venereal disease clinic to be held in the jail under the direction of the city health department. At a meeting, March 28, plans were outlined for more intensive medical service in the jail, the details to be worked out by the city health commissioner.

**Coroner to Investigate Deaths from Tuberculosis.**—On and after April 1, 1923, the coroner of Cook County will prohibit the health department issuing burial permits for persons reported dead from tuberculosis unless the cases had been reported previously as tuberculosis. The coroner will investigate all such cases to establish the cause of death. During 1922, says the president of the board of directors of the Municipal Tuberculosis Sanitarium, the death certificate constituted the first report in too many of these cases. The usual explanation for failing to report cases is that physicians are called in at the termination that the family may obtain a death certificate and thus a burial permit. "There should be no reason why a doctor should feel that he must sign a death certificate on a case which has not been under his care and treatment, but has been treated by some cultist, who under the law has no power to sign a death certificate."

#### INDIANA

**Hospital News.**—April 30 to May 5 has been set aside for a state-wide campaign to complete the building fund of the James Whiteomb Riley Memorial Hospital, Indianapolis, it was recently announced.—The Deaconess Hospital, Indianapolis, has been purchased by the Ohio and Senate Realty Company. The property will continue to be operated as a hospital.

**Pictures of Trip to San Francisco.**—The Indianapolis Medical Society at a meeting, March 13, displayed five reels of motion pictures of the trip planned for physicians who attend

the Annual Session of the American Medical Association at San Francisco. Dr. Charles R. Sowder, chairman of the legislative committee of the society, spoke on "Medical Legislation Passed and Its Future."

#### IOWA

**Gift for Child Welfare.**—The Rockefeller Foundation has given \$22,500 to the Child Welfare Research Station of the State University of Iowa, of which Prof. Bird T. Baldwin is director. This sum will be received in three instalments over a period of three years.

#### LOUISIANA

**Medical Meeting Postponed.**—The annual meeting of the Southern States Medical Society has been postponed until April 24-26, according to Dr. M. W. Swords, secretary of the state board of health. The society was to meet, April 14, but will be postponed until the return of Dr. Osear Dowling, who is now in South America.

#### MARYLAND

**Medical Meetings.**—The medical societies of Johns Hopkins Hospital, honored the memories of Louis Pasteur and Edward Jenner, March 26. Dr. Simon P. Flexner of the Rockefeller Institute and Dr. William H. Welch addressed the meeting. Dr. Henry B. Jacobs exhibited rare volumes from the pen of Pasteur, and presented prints and portraits pertaining to his life.

**Personal.**—The state health commissioner has appointed the following physicians on the staff of the Children's Dispensary, to be maintained at the Robert Garrett Hospital for Children: Dr. Henry L. Sinskey, director of the eye and ear clinic; Dr. W. Raymond McKenzie, in charge of the nose and throat clinic, and Dr. Gustav H. Wolterbeck, pediatrician.—Dr. Kyle W. Golley has been appointed superintendent of the Mercy Hospital, Baltimore, the appointment to become effective, July 1.

#### MASSACHUSETTS

**Admission of Voluntary Patients to Hospitals for Insane.**—The following regulations for the admission of voluntary patients to hospitals for the insane have been formulated by Dr. Kline, commissioner of mental diseases:

No person shall be admitted as a voluntary patient who can be regularly committed by the courts as an insane patient.

No minor shall be received as a voluntary patient in any asylum.

No patient shall be admitted as a voluntary patient unless he or she is fully competent to understand the conditions of admission and is fully aware of the fact that immediate release can be secured on request.

Every person admitted as a voluntary patient must first have signed his or her own admission petition.

If at any time the patient signifies his or her desire to leave, the officer must at once supply the patient with a written application for release.

#### MICHIGAN

**Narcotic Measure Passes.**—Representative Burn's bill making it a felony to sell or have in one's possession any habit-forming drugs, was finally passed by the house, March 14. The measure, as well as making the offense a felony instead of a misdemeanor, has a search and seizure clause, with the same scope as that applying to the liquor laws. The bill will go into effect immediately.

#### MINNESOTA

**Staff for Shriners' Hospital Appointed.**—The staff for the Twin City Shriners' Hospital for Crippled Children, Minneapolis, was approved by the board of governors, March 3. Dr. Wallace Cole, St. Paul, will be surgeon-in-chief. The following physicians will be among those on his staff: Paul W. Giessler, Iver F. Selleseth, Alexander R. Colvin, Carl C. Chatterton, Frederick A. Olson, Harry B. Zimmerman, James T. Christison, Frederick C. Rodda and C. Eugene Riggs.

**Personal.**—A banquet was given by the staff to Dr. Henry M. Bracken, head of U. S. Veterans' Hospital No. 68, Minneapolis, on the occasion of his transfer to the Veterans' Hospital at Atlanta, Ga.—Dr. Milton J. Rosenau, Harvard Medical School, Boston, gave the annual address of the Alpha Omega Alpha Honorary Medical Fraternity in Minneapolis, March 7. His subject was "Food Poisoning."—Dr. Leverett D. Bristol, professor of public health and preventive medicine at the medical and graduate colleges of the University of Minnesota, Minneapolis, has been appointed county health officer for Cattaraugus County. Dr. Bristol



will be in general charge of the tuberculosis and public health demonstration which is being carried on in Cattaraugus County with the assistance of the Milbank Memorial Fund.

## MISSOURI

**State Association Changes Date.**—Dr. E. J. Goodwin, St. Louis, secretary of the Missouri State Medical Association, announces that the annual meeting of the association will be held in Joplin, May 8-10, instead of May 9-11, as previously announced.

**Clinical Society Organized.**—The Kansas City Clinical Society was recently organized to develop the educational advantages of the clinical material of Kansas City and to coordinate the clinics of greater Kansas City that they may be available throughout the year to visiting physicians. Officers of the society are: president, Dr. Edward H. Skinner; vice president, Dr. L. F. Barney; secretary, Dr. James R. McVay, and treasurer, Dr. Joseph Kimberlin.

## NEBRASKA

**Omaha Physician Sentenced.**—Reports state that Dr. John T. Mathews, Omaha, aged 70, was sentenced in the district court, March 12, to five years in the state penitentiary on a charge of causing the death of Miss McDermott, of Basset, through an illegal operation. Dr. Mathews will appeal to the state supreme court.

## NEW YORK

**State Hospital Commission.**—An inspection tour of the thirteen hospitals for the insane in the state by the state hospital commission started March 13. The purpose of the tour is to outline a plan to relieve overcrowding.

**State Hospitals to Be Fireproof.**—State Architect Sullivan W. Jones has started on plans to make the various state hospitals fireproof. The Manhattan State Hospital on Ward's Island, which was recently burned, will be rebuilt and made fireproof throughout. There is \$250,000 available for the work which will begin within a month.

### New York City

**Tenth Harvey Society Lecture.**—The Harvey Society announces that its tenth lecture will be given, April 14, by Professor Otto Meyerhof, University of Kiel, Germany, on "Auto-Oxidation Processes of the Cell."

**Fund for Pediatrics.**—The College of Physicians and Surgeons of Columbia University has received \$5,000 from William Perry Watson, consulting medical director of the Prudential Insurance Company of America, for a permanent fund for pediatrics. The annual income of the fund will be given to the member of the graduating class doing the most valuable work in diseases of infants and children during the regular course at the college.

**Postgraduate Medical Courses.**—Graduate courses for physicians in Brooklyn will be instituted at seven borough hospitals, April 16, through the joint efforts of the Kings County Medical Society and the Long Island College Hospital. The institutions in which teaching courses will be given are Brooklyn Home for Consumptives, Greenpoint Hospital, Jewish Hospital, Kingston Avenue Hospital, Long Island College Hospital, St. Catherine's Hospital and Wyckoff Heights Hospital. Thirty-five courses have been planned.

**Chiropractors Protest.**—More than 700 chiropractors of Brooklyn and their friends met recently to protest against what they term "the insidious propaganda of the medical profession" which they assert is keeping them from winning legal recognition in New York state. They approved a bill offered in the Assembly last week by Assemblyman Peter A. Leininger of Long Island City giving state recognition to chiropractic. Ways and means were outlined for bringing the measure to the attention of the legislators.

**Motor Exhaust Imperils Health.**—The question of the amount of carbon monoxid gas in the air due to the large number of motor vehicles in the city was submitted to the public health committee of the New York Academy of Medicine, which has submitted a preliminary report. The report states that at certain periods of the day and in certain areas of the city the concentration of carbon monoxid gas is such as to call for remedial measures. While all the data have not been made public, they are said not to be startling, yet serious enough to warrant continuing the investigation.

**Hospital News.**—Flooding of the excavation for the new Reconstruction Hospital at One Hundredth Street and Cen-

tral Park West, through bursting of a six-foot sewer, March 16, caused alarm lest the north wall of the present hospital building be undermined. As a precautionary measure, the patients were transferred to other hospitals.—Members of the board of directors of the Manhattan Eye, Ear and Throat Hospital celebrated the fifty-fourth anniversary of the founding of the institution at the Hotel Astor, March 15, and launched a \$300,000 campaign for funds with which to provide additional quarters. The plan is to add three stories to the present six-story building, which will provide a total of 165 beds in wards.

## NORTH CAROLINA

**Physician Honored.**—At a meeting of the Mecklenburg Medical Society at Charlotte, March 6, Dr. Isaac W. Faison, former president of the state medical society, was presented with a gold watch in honor of his seventieth birthday, and his forty-seventh year of practice in North Carolina.

**State Board of Health News.**—Dr. James S. Mitchener, Raleigh, has been appointed director of the division of medical inspection of schools to succeed Dr. George M. Cooper, who has been appointed assistant secretary of the state board of health, a position which has been vacant for several years. Dr. Mitchener formerly served as epidemiologist of the board.—Dr. Knox E. Miller of the U. S. Public Health Service, for several years assigned to the State Board of Health of North Carolina as director of county health work, has been assigned to Louisiana for similar duties. He is succeeded in Raleigh by Dr. Everett F. Long.

**John McTyeire Flowers Lectures.**—Dr. W. W. Keen, emeritus professor of surgery at the Jefferson Medical College of Philadelphia, will give the John McTyeire Flowers lectures at Trinity College, Durham, April 10, 11 and 12, in the Craven Memorial Hall. Dr. Keen will lecture on "The Value of Medical Research to Mankind and to Animals, Especially as Illustrated by the Achievements of Louis Pasteur," "Victory over Various Diseases," and "The Duty of the Citizens of the Community to Promote and Support Medical Research." Dr. Keen will also address the alumni of Jefferson Medical College, April 12. All Jefferson alumni who can be present are requested to notify Dr. Joseph A. Speed, Durham.

## OHIO

**Medal Awarded.**—Dr. Harold J. Gordon, Akron, has been awarded the distinguished service medal. Dr. Gordon held the rank of major in the Medical Corps and participated in the engagements in the Argonne and at St. Mihiel.

**Chiropractor Fined.**—Reports state that Edward Schuette of Cincinnati was fined \$25 and costs, March 15, by Judge Bell, for practicing medicine without a license. Schuette will appeal. Trials of twelve other chiropractors opened March 19.

## OKLAHOMA

**Health Bulletin Reissued.**—The *Oklahoma Health Champion*, the official monthly publication of the Oklahoma Public Health Association, which suspended publication due to lack of funds, has been revived with the March issue.

## OREGON

**University News.**—A bill was recently passed by the legislature and signed by the governor, appropriating \$200,000 for the next two years for maintenance of the University of Oregon Medical School, Portland. The school has at present an enrolment of about 200 students.

## PENNSYLVANIA

**Personal.**—Dr. Salvatore Lojaccono, superintendent of the Grandview Sanatorium, Oil City, has resigned.—Prof. Arthur A. Hamerschlag, president of the Carnegie Institution of Technology, Pittsburgh, has been elected president of the Carnegie Research Corporation of New York City.

**A Municipal Mental Clinic.**—A municipal mental health clinic has been opened in Pittsburgh, under the auspices of the department of charities, at the City-County Building. This clinic accepts persons with mental disorders regardless of their ability to pay for treatment, and will assist the courts and welfare organizations by examining drug addicts, alcoholics, and juvenile delinquents. The clinic has four psychiatrists and two psychiatric social workers. Dr. E. E. Mayer is director.

**University News.**—A statement of the financial needs of the University of Pennsylvania, Philadelphia, has been sent



to Governor Pinchot by Dr. J. H. Penniman, provost of the university. The statement was prepared in accordance with the governor's request for data to present to the state council on education, which is to recommend a policy toward higher education. At least \$1,500,000 is needed from the state if a deficit is to be avoided in the next two years. Last year, the difference between the amount paid by students and that expended by the university for education was \$814,250.

**Physicians Oppose Vaccination Bill.**—At a hearing on the Lauer bill, before the house committee on public health and sanitation, March 20, the medical profession of Pennsylvania was well represented. This bill would make vaccination optional and repeal the present compulsory law. The physicians strenuously opposed the bill. The proponents of the measure were principally nonmedical men, who presented well known antivaccination propaganda. Drs. C. Lincoln Furbush, G. W. McCoy, A. A. Cairns, W. F. Donaldson, Walter Corncll, H. C. Frontz and George A. Knowles were among the physicians present at the hearing.

#### Philadelphia

**An All-Philadelphia Conference.**—All phases of charitable, civic and social work in Philadelphia are to be represented in a conference of more than 300 agencies, April 18-21, which will be known as the All-Philadelphia Conference on Social Work. The main sessions will be held in the auditorium of the Academy of Natural Sciences.

**Germantown Hospital to Rebuild.**—The older buildings of the Germantown Dispensary and Hospital, at Penn and Chew streets, will be replaced by modern fireproof structures at a cost of \$1,000,000, it was announced, March 15, by Francis R. Strawbridge, president of the hospital. A campaign to raise the necessary money will be started next month.

**Cornerstone for Samaritan Hospital Laid.**—Ground for the new building for the Samaritan Hospital was broken, March 21, with appropriate exercises. This building will be erected in front of the middle wing of the present hospital at Broad and Ontario streets. Gifts to the building fund of \$20,000 by the Edward G. Budd Manufacturing Company, and \$5,000 by the Freihofer Baking Company, were announced following the ceremonies.

**Surgeons Attack Anatomic Bill.**—The future of Philadelphia as a center of medical learning is declared by leading surgeons and teachers of anatomy throughout the state to be tied up in a bill recently introduced into the state legislature by Representative Golder. The measure is bitterly opposed by physicians and surgeons and, March 20, a group of surgeons went to Harrisburg to fight it in committee. The act is designed to take from the state anatomic board nearly all the authority it had over the disposition of the bodies of paupers and unidentified persons, it is alleged. The executive committee of the state anatomic board, which will fight the measure, includes Dr. J. Parsons Schaeffer, president of the board; Dr. Hewson, secretary, and Dr. Henry Morris, treasurer.

#### TEXAS

**State Health Week.**—Governor Neff has designated April 2 as the date for the opening of a state-wide health promotion campaign, to be conducted by the state board of health.

#### UTAH

**Chiropractic Bill Passed.**—An examining board of five chiropractors will be selected and recommended to the state department of registration, in compliance with the new law. Under the law, recently enacted, chiropractors will be licensed to treat disease as other practitioners are, and will be amenable to the state and city laws regarding contagious diseases and the signing of death certificates.

#### WASHINGTON

**Typhoid Survey.**—The Washington State Board of Health has asked the legislature to appropriate \$8,000 for a survey of the Yakima Valley, in which there has been an annual epidemic of typhoid fever and enterocolitis.

**Personal.**—Dr. Herbert L. Moon, Seattle, suffered a fracture of three ribs in an automobile collision, March 8.—Dr. Park W. Willis, Seattle, has been appointed a member of the state board of medical examiners to succeed Dr. Charles C. Tiffin.

**Graduate Medical Lectures.**—The University Extension Graduate Medical Lectures at the University of Washington

Medical Department, Seattle, will be given in July. There will be four regular courses this year, consisting of twenty lectures altogether. Drs. Finney, Stengel, Ormsby and Rose now will be the lecturers.

#### WEST VIRGINIA

**Personal.**—Dr. John H. Bird, Rock, has been elected president of the Mercer County Medical Society.—Dr. Fred O. Marcum, who has been ill for the past two years, has returned to Ceredo to resume practice.—Drs. Page Dameron Barlow and Robert A. Ashworth have been elected president and secretary, respectively, of the Marshall County Medical Society.—Prof. A. P. Mathews, of the University of Cincinnati, lectured at the School of Medicine of West Virginia, Morgantown, on "The Origin of Organic Matter," March 15.

**Society News.**—The annual meeting of the West Virginia State Medical Association will be held at Beckley, June 12-14. Instead of the usual banquet, an old fashioned barbecue will be held at the Raleigh Country Club, June 13.—Resolutions were passed at the Mingo County Medical Society opposing the creation of a special board of chiropractic examiners for West Virginia. It is now illegal for chiropractors to practice in the state, and owing to the diligence of the county society no chiropractors are located in Mingo County, it is stated.

#### WISCONSIN

**Health Show.**—A health show will be held in Milwaukee, April 21-28, under the auspices of the state board of health. The profits will be used to promote child welfare in the city.

#### CANADA

**Drugless Healer Fined.**—It is reported that J. J. O'Malley, a drugless healer of Calgary, was fined \$50 and costs for practicing medicine without a license, March 4. O'Malley was arrested following the death of Mrs. Elizabeth Parker as a result of diphtheria. O'Malley treated her for the disease, it was stated, by making her wear spectacles containing strong lenses.

**Hospital Superintendents Appointed.**—Dr. Edward M. Pearce has been appointed general superintendent of the Provincial Royal Jubilee Hospital, Victoria, B. C., to succeed Dr. Edward S. Hasell, who resigned because of ill health, following twenty years' of service.—Dr. Clarence B. Farrar, Ottawa, has been appointed superintendent of the Homewood Sanatorium, Guelph, Ont., to succeed Dr. Alfred T. Hobbs, who resigned recently.

**McGill University News.**—An endowment of \$25,000 for the departmental library of chemistry at McGill University, Montreal, by John Baillie, was recently announced. The endowment will be a memorial to the donor's son, Lieut. George Irving Baillie, who was killed during the World War.—A series of luncheon lectures on industrial medicine was recently arranged by the governors of McGill University, in order to bring before the manufacturing and industrial sections of the community the importance of preventive and sanitary medicine in industry. Dr. B. L. Wyatt, Laurentide Health Service, spoke on "Industrial Medicine"; Dr. Haven Emerson, Columbia University, New York, on "Periodic Health Examination in Industry"; Prof. George C. Whipple, Harvard University, Boston, on "Industrial Sanitation"; Dr. Linsly R. Williams, National Tuberculosis Association, on "Industrial Health from the Standpoint of Tuberculosis," and Dr. Wilbur A. Sawyer, Eastman Kodak Company, New York, on "The Physician in Industry."

#### GENERAL

**Dr. Victor C. Vaughan Receives Medal.**—The French government presented the medal of the Legion of Honor to Dr. Victor C. Vaughan, March 28, for meritorious service in science and in the World War. The decoration was presented at the Chicago Club by Mr. Barthelmy, the consul, in the presence of a few medical friends.

**Child Health Test to Be in South.**—The American Child Health Association, which recently selected Fargo, N. D., for its child health demonstration, announced, March 11, that the second of the three experiments will be carried out in some community south of the Mason and Dixon line and east of the Mississippi River. A rural county of not more than 30,000 population and containing no town of more than 5,000



inhabitants, will be selected. The demonstration will continue five years.

**National Clean-Up and Paint-Up Campaigns.**—Under the auspices of the Bureau for Better Home Towns, St. Louis, clean-up and paint-up campaigns have been carried out in 7,000 cities in the United States in the last ten years. The *Spotless Town News*, issued by the bureau, gives methods for conducting these campaigns, and illustrates the benefits derived. Trophies in the form of solid silver cups have been presented to various cities which have been deemed "the cleanest town." Lynn, Mass., won the cup in 1922, and Boston in 1921.

**Society News.**—The thirty-fifth annual meeting of the American Pediatric Society will be held at French Lick Springs, Ind., May 31-June 2, under the presidency of Dr. L. Emmett Holt. This will be the occasion of the first annual golf tournament of the society.—The nineteenth annual meeting of the National Tuberculosis Association will be held at Santa Barbara, Calif., June 20-23.—The annual meeting of the American Bronchoscopic Society will be held in Atlantic City, N. J., May 9, the day preceding the meetings of the American Laryngological, Rhinological and Otological Society.—The sixty-eighth semiannual meeting of the Southern California Medical Society will be held at Long Beach, Calif., April 6-7.

**The Prevention of Juvenile Delinquency.**—Through a special gift of the Commonwealth Fund, the National Committee for Mental Hygiene has been able to create a division on the prevention of delinquency. The work of this division falls into two groups: (1) department of psychiatric field service and demonstration clinics, and (2) department of experimentation. The first department provides two traveling clinics to juvenile courts and other interested agencies throughout the country, to demonstrate the value of psychiatric work in the prevention of delinquency and conduct disorders of childhood. These clinics will remain from six to twelve months in each community chosen. It is planned, during a five-year demonstration, to select at least eight centers where it will be possible to organize the social forces of the community most effectively, to deal with the problem of juvenile delinquency. The first traveling clinic completed its demonstration in St. Louis, December, 1922. Every child coming before the juvenile court received a preliminary physical, mental, and social survey. Following this, a careful summary of all the findings, an estimate of the essential causative factors involved in the child's behavior and recommendations for treatment were made, along medical, psychiatric, educational and social lines. This clinic was transferred to Norfolk, Va., in December, at the request of the judge of the juvenile court and the city council, and will remain until June. Following the visits of the traveling clinic, the director of the division keeps in touch with the work and organizes groups of those persons who had been under training during the demonstration period, to carry on the work until the city takes over the entire support of the undertaking.

#### FOREIGN

**Child Labor in Japan.**—Japan has adopted the Convention of the International Labor Organization of the League of Nations prohibiting generally the employment in industry of children under 14 years of age. This step involves the repeal of the present Japanese law that admits children under the age of 12 to certain light industrial employment.

**Medical School at Batavia, Java.**—According to an announcement received from the Government Medical School at Weltevreden (Batavia), Java, this institution is conducted to train the natives of Java to practice medicine among their own people. The course extends over seven years, the first two of which are largely devoted to premedical subjects including English, Dutch, and the native languages and literature, botany, zoology and other subjects. During 1922 there was an enrolment of 131 students.

**Medical Education in Yugoslavia.**—A schedule of minimum requirements for the regulation of medical colleges has been issued by the board of health of Yugoslavia, in which a certificate of moral character, and evidence of preliminary education (high school) are requirements for admission to lecture courses. The curriculums of the medical schools are to embrace four years of instruction and one year's internship in a hospital, aggregating at least fifty months. Subjects to be included in the course of instruction must comprise anatomy; physiology; chemistry; physics; materia medica and therapeutics; theory and practice of medicine, including ophthal-

mology; otology, dermatology and neurology; pathology and bacteriology; surgery, including orthopedic surgery; obstetrics and gynecology; hygiene and medical jurisprudence.

**Foreign Congress.**—The Ligue Française d'Hygiène Mentale, the Ligue Belge d'Hygiène Mentale and the U. S. National Committee of Mental Hygiene will hold a congress in New York, April, 1924. Among the subjects to be discussed will be the abuse of stupefying drugs, the reorganization of teaching of backward children, reform of penal systems, psychophysiologic vocational selection and the technic of psychotherapy. Dr. Genil-Perron, Ligue d'Hygiène Mentale, 99 Avenue de la Bourdonnais, Paris, is general secretary.—The fourth annual British Congress of Obstetrics and Gynecology will be held in Edinburgh, April 19-21.—The National Council of Social Hygiene, a federation of nine private associations dealing with public health, held its sixth session in Prague, February 7. Dr. Alice G. Masaryk of Czechoslovakia was reelected chairman of the council.—A national congress for research work in tuberculosis will be held in Prague, May 19-21, under the auspices of the Czech Association for the Promotion of Research in Tuberculosis. Prof. Ivan Honl is chairman.—The Oxford Ophthalmological Congress will be held at Keble College, July 4-6. The Doyné memorial lecture will be delivered by Dr. H. M. Traquair on "The Differential Characters of Scotomata and Their Interpretation."

**Personal.**—The Académie de médecine at Paris recently elected Dr. Salimbéni of Acquapendente, Italy, a foreign corresponding member. He was formerly connected with the Pasteur Institute. Dr. Malvoz, professor of bacteriology at the University of Liège, was elected at the same time.—Dr. John Weir has been appointed a physician to the Prince of Wales. This is the first official recognition of a homeopathist on the part of a member of the royal household.—Major Gen. Sir William B. Leishman, director of pathology at the War Office, London, has been appointed to succeed Sir John Goodwin as director general of the Army Medical Service.—The Prix de Carthage, a biennial prize founded in 1921 for scientific or historical work, has been awarded to Dr. Nicolle of the Pasteur Institute of Tunis, for his investigations of typhus fever, kala-azar, trachoma and Malta fever.—Sir T. W. Edgeworth David has resigned as president of the Australian National Research Council on account of ill health. Orme Masson, professor of chemistry in the University of Melbourne, has been appointed his successor in this position.—*Science* relates that a grant of \$100 has been made from the E. Thompson Science Fund to Professor Wiedemann of Erlangen, in order that he may continue his research on the physical properties of colloidal substances. A grant of \$150 was made to Professor Lipschütz of Vienna, for further research on mouse tar cancers.—Prof. P. Flechsig of Leipzig has been elected an honorary member of the Swedish Society for the Advancement of Science.—Dr. J. L. Yagüe of Madrid has been awarded the Roel prize of 3,000 pesetas by the Instituto Medico of Valencia for his work "Extragastric Purgative Medication."

#### Deaths in Other Countries

Dr. Ian D. C. Howden, surgeon and radiologist to the Royal Victoria Hospital, Dover.—Dr. Peter C. Smith, for twenty-two years medical officer of health for Wandsworth, London, and one time editor of the *Sanitary Journal*; aged 65, of cerebral hemorrhage.—Dr. Lucius Spengler of Davos-Platz, noted for his operative work in tuberculosis.—Dr. Diógenes Vargas of Mendoza, president of the public health service of the province, and senator.—Dr. Surbek, president of the medical licensing board in Switzerland.—Dr. E. Lejeune of Brussels, formerly inspector general of the army medical department, aged 82.

#### CORRECTIONS

**Leprosy in New York.**—In THE JOURNAL, March 17, mention is made of a case of leprosy at Bellevue, and it is stated that "this is the only case of leprosy in New York City as far as known." Dr. Howard Fox points out that approximately fifty lepers are to be found in New York City at any time.

**Tuberculosis Instructors Erroneously Reported.**—The Assistant Director of the U. S. Veterans' Bureau writes that the following names were erroneously included in the list of instructors from Yale University who will teach in the Veterans' Bureau schools for instruction in pulmonary tuberculosis (THE JOURNAL, March 24, p. 860): Drs. J. S. Ely, E. K. Hunt and A. M. R. Lauder.



## Foreign Letters

### LONDON

(From Our Regular Correspondent)

March 5, 1923.

#### Science in the Army

Sir William Leishman, F.R.S., has been appointed director general of the army medical service. The appointment marks a new departure in the service, for previously the position was given to men who had distinguished themselves as administrators, never to a scientist. Sir William Leishman entered the army medical department in 1887, and became major in 1905, colonel in 1915, and major-general in 1918. He has done a considerable amount of research in bacteriology, and is known all over the world for his discovery of the parasite of kala-azar, which he observed in films taken from the spleen of a soldier who had died from the disease in 1900; but he did not publish a description of it until 1903, when the same observation was independently made by Lieutenant-Colonel Donovan of the Indian medical service, who found the organism by splenic puncture during life. In 1903, he became assistant professor of pathology at the Army Medical School, and in 1910 professor. When the war broke out he was sent to France as adviser in pathology, and when he returned to England in 1918 he was appointed director of pathology at the war office. He has also done valuable work on tick fever, and has devised a method of chromatin staining which is used in laboratories all over the world.

#### Physician Sued for Negligence in Setting a Fracture

A case of considerable medical importance has been heard at the Somerset assizes. A woman claimed damages against a physician, alleging negligence in treating a fractured forearm, as he failed to set the bones in apposition, set them out of alinement, and did not take reasonable care to see that they were set so as to unite. In consequence, there was displacement of the lower fragments, and the bones failed to join properly. An operation in which the bones had to be sawed through and reset with plates and screws became necessary. It was also complained that he did not make a roentgen-ray examination. The accident occurred, June 9, 1921, and both bones of the forearm were fractured. The defendant was sent for and first applied a temporary splint. He removed the plaintiff to his office, where he set the arm. At the end of the sixth week, when the splints were taken off, the bones had not united. The patient then consulted a surgeon, who performed the operation described. The result was a fair arm, but she could not do hard work. The surgeon who performed the operation stated in evidence that he took a roentgenogram which showed the bones overlapping at the fracture. Judging from what he found, proper treatment had not been afforded to the arm. It was a difficult fracture to set, and in his opinion nothing could have been more helpful than a roentgenogram to see that the setting was satisfactory; he regarded that as a routine practice nowadays. When the arm did not mend, he thought that it amounted to a lack of reasonable care not to have taken a roentgenogram. He did not agree that the plaintiff was a poor bone-forming subject. Another surgeon gave evidence confirming the operator. The physician described his treatment, and said that he did not consider a roentgen-ray examination necessary. July 22, he found that there was nonunion. The girl was in a bad state of health, and he prescribed a tonic to improve her general health and bone-making capacity. August 19, he again removed the splints, and the bones seemed to be united. He instructed the patient to keep the arm in a sling and have massage performed. August 27, the

arm was in good condition, but on September 9 he found a good deal of swelling around the seat of fracture, which suggested to him that there had been some violence. He then found that the bones were not in alinement, and he reapplied the splint after placing them in alinement. Another physician gave evidence that he examined the arm, September 19, in consultation with the patient's physician, and found it perfectly straight, but there was no union. He considered that the treatment had been correct, but suggested that the bones should be rubbed together to encourage union. A nurse who performed the massage also gave evidence that at first she found nothing abnormal, and that afterward deformity and swelling appeared. Mr. T. H. Openshaw, consulting surgeon to the London Hospital, stated that it was not usual to take a roentgenogram of a limb in a case of ordinary simple fracture of this nature. One could get the bones into perfect alinement without the roentgen rays. The advice as to massage was perfectly correct. He saw no reason why the two physicians in consultation could not find by manipulation whether the bones were straight. If the patient had been operated on immediately, she might not have had as good an arm as she had. His theory was that she was a poor bone maker. In cross-examination he was asked by the plaintiff's lawyer: "Do you say that an x-ray examination was not necessary?" He answered "Yes. It would have prevented this ease being brought. You would not have a leg to stand on if there had been an x-ray examination." Mr. Richard Warren, formerly surgeon to the London Hospital, and examiner in surgery at the Universities of Oxford and Cambridge, stated that, having heard the physician's evidence, he could not criticize the physician's treatment in any way. The judge told the jury that the patient of an ordinary physician was entitled to expect fair skill, but not such as from a specialist. If a physician made a mistake and it was not due to want of reasonable skill and care, that was a misfortune. One could not expect infallibility in physicians more than in other professional men. It was for the jury to say whether the physician had been guilty of negligence. If it found for the plaintiff, it was a case for moderate damages. The jury returned a verdict for the defendant. The case once again emphasizes the fact that if physicians would avoid litigation in fracture cases they should, except in the most simple, have roentgenograms taken.

#### A Condemnation of Spiritualism

In a lecture on "The Forces Behind Spiritism" before the Victoria Institute, Dr. A. T. Schofield, a writer on psychotherapy, strongly condemned occult practices. Being a denial of Christ, he urged that these forces must be of evil origin and their influence diabolical. Spiritism was not all fraud, for marvelous phenomena were produced. The evidence was too strong for denial that in certain instances heavy furniture was moved. There was the testimony of several well known persons that they saw the famous medium, D. D. Home, float out of a window 85 feet above the ground, travel 7½ feet to the next window, and there glide in feet foremost. The chief force in spiritualistic manifestations was that of evil spirits, ever seeking to possess the medium or inquirer, and many sorrowing war mothers had been deceived by them. The second force was also nonhuman, but it was less terrible, being merely freakish and useless, and was often imitated fraudulently in conjuring. This category included levitation and such performances as the floating of Home, luminous appearances and automatic writing. We could only fall back on Maeterlinck's suggestion that old demons loved to fool those who sought the secrets of the other world. The third force was not superhuman, but consisted of occult powers that human beings mostly possessed. They were connected with the unconscious mind and thought transference, which accounted for most supposed messages from the dead. The



seeker was convinced by the truth of the information about the departed perhaps known only to him or her, but these details, presumed to come from the spirit world, in reality came from the seeker's brain, which the medium unconsciously read. Sometimes, however, this process might be combined with communications from evil spirits. Spiritualism was a hoary evil, condemned in the scriptures, and "Harley Street" was making a good harvest out of its injurious influence.

#### The Fellowship of the Royal Society

The highest scientific distinction in this country is the Fellowship of the Royal Society (F.R.S.), which is granted only for eminence in original research. The council has recommended fifteen persons for election to the society. Those that are members of the medical profession are Dr. E. D. Adrian, university lecturer in physiology, Cambridge; Dr. E. Fawcett, professor of anatomy in the University of Bristol; Dr. R. T. Leiper, professor of helminthology in the University of London, and Dr. J. J. R. Macleod, professor of physiology in the University of Toronto.

#### Investigations in Animals on Vitamin and Mineral Deficiencies

The Rowett Institute was founded near Aberdeen to explore the wide field of animal nutrition. Its work was begun in 1914, interrupted by the war, and resumed on full scale in 1920. This consists generally of feeding experiments on farm animals. So far, the results seem to show that too much reliance has been placed on feeding experiments made on rats and guinea-pigs, and that conclusions drawn from them do not necessarily apply to other and larger animals. A litter of pigs was divided into three groups and fed on a basic ration boiled and stirred for an hour (which destroys vitamin C and seriously affects vitamin A). One group had the three vitamins added in the form of fresh-cut grasses and clover; the second had A in the form of cod liver oil, and C in the form of fresh-grated swede; the third had no addition of vitamins, but was given a practically vitamin-free extra ration to make up for the energy value in the extra rations of the others. All three had access to a box containing mineral matter according to an analysis of the ash of sow's milk. All three did equally well. In a similar experiment, pigs, given an abundant supply of minerals, were fed on a diet so free from vitamin C that guinea-pigs fed on it developed scurvy in the third week; they flourished. Experiments were made on pigs with a basic diet as free as possible from vitamin A, but with mineral deficiency. To one group, cod liver oil, which contains A in abundance, was added; to the other, linseed oil, which is deficient in A. The interesting result followed that cod liver oil had a definite beneficial effect on health and the rate of growth, but the effect was greatest when the diet was ill balanced or defective in its mineral constituents. Moreover, the beneficial effect was greater in the sheep than in pigs. In young pigs a condition closely resembling rickets in children was brought about by deficiency in minerals.

On a ration consisting only of grains which contain an excess of magnesium, potassium and phosphorus, and a deficiency of calcium and sodium, a condition indistinguishable from that of rickets in children, quickly arose. The addition of cod liver oil to the diet improved the general health, but did not prevent the disease. But adjustment of the mineral contents of the diet enabled the animals to grow from weaning to sexual maturity without any signs of rickets. Thus, in pigs the chief factor in the production of rickets is the lack of mineral matter in the food. The beneficial influence of vitamin A and sunlight is most marked when the mineral balance is defective. The conclusion is drawn that there is little warrant for paying the heavy prices of food stuffs rich in vitamins for farm animals.

#### PARIS

(From Our Regular Correspondent)

March 2, 1923.

#### The Inadequacy of the Sanitary Passport

According to the regulations in force at present, any person entering France from a country known to be contaminated by any of the so-called pestilential diseases (plague, cholera, yellow fever, typhus) must be provided with a "sanitary passport." From the moment the person in question is given this document, he becomes subject to sanitary surveillance, which does not cease until the time, as indicated on the passport, has elapsed within which incubation of the disease to which he has been exposed, and of which he may have brought the germ to France, might occur. In reality, however, this is the way the thing works out: At the frontier or at the port of disembarkation, the traveler is asked to state the name of the place to which he is going, and, if possible, to give also his future address. The public health officer, after filling out a double blank form, gives one sheet to the traveler, and mails the other to the mayor of the commune in question. The sheet that the traveler receives constitutes his sanitary passport, which the bearer must present or have presented to the mayor of the commune, within twenty-four hours after his arrival. The second sheet is called the "sanitary advice." It gives to the local public health authorities the name and address of the traveler, the region from which he has come, and the reasons for, and the duration of, the surveillance to which he must be subjected. The purpose of these formalities is to put the municipal authorities in a position to exercise toward this class of travelers a special sanitary surveillance, which shall consist in assuring themselves that, within the time specified, they do not contract any suspected affection, or, if they do, that all the necessary measures as regards isolation and prophylaxis are instituted. However, experience has shown that, in the majority of cases, the traveler gives a false address to avoid being discommoded, with the result that in that case no control can be exercised.

In order to remedy this deplorable state of affairs, Drs. P. Vigne and R. Crémieu (Lyons) propose that every traveler holding a sanitary passport be required to leave a cash deposit at the point of entry, the amount to be determined by the financial condition of the traveler and the exigencies of the case. This sum would be returned by the municipal authorities or the public health office of the locality to which the traveler was proceeding, on presentation of the receipt given at the point of entry. In order to recover their deposits, travelers would thus be compelled to present themselves to the authorities responsible for the sanitary surveillance.

#### The Abuse of Intravenous Injections

In the third volume of his *Année Thérapeutique*, which has just appeared (Paris, 1923, Masson et Cie, publishers), Dr. L. Cheinisse protests against the present exaggerated use of intravenous injections. This abuse, he says, seems to be based partly on the false idea that the intravenous route is always preferable to the hypodermic method, and partly on the belief in the absolute harmlessness of intravenous injections. As for the supposed superiority of the intravenous method, the fact is often lost sight of that, while it is true that injections by the vein carry the drug immediately to the blood stream, it is no less true that the drug disappears just as quickly, which is not an indifferent matter in the case of numerous medicaments. For instance, if an intravenous injection of antidiphtheric serum is given, which is indicated only in hypertoxic diphtheria, it must be followed immediately by an intramuscular or subcutaneous injection, by reason of



the rapidity with which the antitoxin introduced by the vein is eliminated. It cannot, therefore, be upheld that intravenous injections are always more efficacious than subcutaneous injections. With respect to the harmlessness of intravenous injections, it may be stated that, unfortunately, the dangers associated with injections by the vein are greater than is commonly supposed. Péry recently reported to the Société d'obstétrique et de gynécologie of Bordeaux serious complications following an intravenous injection of hexamethylenamin (hematuria, epistaxis, and pulmonary congestion with hemoptysis). Then, again, certain substances employed in intravenous injections, such as sodium carbonate and calcium chlorid, are particularly irritating to the perivascular tissues; one should, therefore, take great care in giving intravenous injections to avoid allowing the injected drug to penetrate the subcutaneous cellular tissue. Other substances, such as iodine-iodid solutions, which have been recommended of late, have the disadvantage of soon causing induration of the veins.

These facts, taken as a whole, are of a character to cause the practitioner to be on his guard against too widespread use of intravenous injections.

#### Examination, During Actual Flight, of Candidates for Aviation

The organism of the aviator must rapidly adapt itself to abnormal and ever changing conditions of existence. Aviation demands functional suppleness, as it were, and the estimation of such suppleness furnishes one of the best criteria of the physical aptitude of a candidate for aviation. It is important, therefore, to be able not only to evaluate certain physiologic functions of the aviator but also to study these functions under conditions as much like those encountered in actual flight in an aeroplane as possible. The aviator during flight is subjected to various abnormal influences, among which may be mentioned as exceedingly important the diminution of atmospheric pressure, and its corollary, the diminution of the partial tension of oxygen. Experimentation on mountains, in balloons, and in caissons containing air under pressure, has brought out many important physiologic facts. The use of caissons is especially valuable in securing experimental data of a delicate nature. But depression and diminution of partial tension of oxygen are not the only factors affecting the flight of the aviator, and it has proved interesting and instructive to carry out during flight certain researches on the variations of arterial pressure, the maximal vital capacity and the variations of the blood urea. Dr. Beyne, a member of the army medical corps, presented lately an interesting communication on this subject to the Société de médecine militaire française.

The performance of experiments, even though very simple, on board ordinary aeroplanes is both difficult and troublesome. The instability of the instruments, the vibrations of the motor, the cold, the abominable ventilation, and the lack of space, disturb, to a considerable extent, both examinee and examiner. Beyne has been able to secure more favorable conditions of experimentation by utilizing a closed aeroplane of the sanitary service, which has a cabin sufficiently large to convert into a miniature laboratory, perfectly sheltered from the wind, well lighted, and where, if necessary, an electric heater can protect the occupants and the instruments from the cold. Beyne has been able, in this aeroplane, to record arterial pressure curves, cardiographic and sphygmographic tracings, and tracings showing the vital capacity, and all this at various altitudes, up to 4,200 meters. This new use of the aeroplane will render good service in certain researches, and will allow the examining physician to secure better data on the influence of certain factors on the organ-

ism of the aviator, during actual flight, than he would be able to obtain if he waited on the ground below, until the aviator landed.

#### New Doctors "Honoris Causa" of the University of Paris

The council of the University of Paris, on recommendation of the faculties concerned, decided at its last session to confer the degree of doctor honoris causa on a number of men of science in other countries. The Faculté de médecine will so honor Dr. Keen, formerly professor of surgery in Jefferson Medical College, Philadelphia, and Dr. Golgi, professor of histology at the University of Pavia, Italy. The diplomas and the corresponding insignia will be bestowed on the men thus distinguished during the ceremonies connected with the reopening of the university next fall, which will be held, Nov. 24, 1923.

#### PEKING, CHINA

(From Our Regular Correspondent)

Feb. 1, 1923.

#### Shanghai Medical Congress

In Shanghai, during the week of February 14-21, a congress of medical men from all over China will be held under the auspices of the China Medical Missionary Association. In the morning and evening sessions, addresses of a general medical nature will be delivered. In the afternoon there will be sectional meetings. The program includes addresses under "General Medicine" on diabetes, epidemic (lethargic) encephalitis in China, syphilis, radium, kala-azar in China, growth and development of Chinese children, carbon tetrachlorid as an anthelmintic in uncinariasis, physical examination of medical students, malaria, vital capacity studies and leprosy. Under "Surgery" are included papers on skin grafts, ruptured spleen, bone surgery, tuberculosis of the knee, fistula in ano, pathologic changes in the serotal contents, lymphosarcoma and ankylosis. Other sections are clinical physiology, pharmacology, obstetrics and gynecology, ophthalmology, ear, nose and throat, roentgenology, parasitology and hygiene and public health.

In the special morning sessions the following subjects will be discussed: "Medical Mission Policy," Dr. Henry Fowler; "Medical Evangelism," Dr. F. M. Auld, Dr. H. F. Love and others; "Medical Ethics," Dr. Merrins and others; "Government Public Health in China," Surg.-Gen. S. H. Chuan; "The Problem of the Future of the Council on Health Education," Dr. W. W. Peter; "The Problem of the Future of the National Health Association of China," Dr. S. M. Woo; "Hospital Administration," Dr. J. H. Snook; "Training of Hospital Technicians," Dr. J. A. Snell. In the general evening sessions, papers will be read on "The Activated Sludge Process of Sewage Disposal in Shanghai," Charles Harper; "What Public Health Activities Are Possible of Immediate Initiation in China?" Dr. Wu Lien Teh; "Report of the Work of Central Epidemics Prevention Bureau in Peking," Dr. Edgar Tsen; "Public Health Activities in Nanking," Dr. C. W. Woodworth; "Pasteur," Dr. C. Noel Davis; "Lister," Dr. E. G. Gauntlett; "Nursing," Miss Cora E. Simpson, executive secretary, Nurses' Association of China; "Medical Education," Dr. H. S. Houghton and Dr. Harold Balme; "Public Health," Dr. W. W. Peter.

#### A Consolidation of Medical Schools

From the standpoint of medical education in China, an important consolidation has taken place in the absorption of the North China Union Medical College for Women in Peking by the School of Medicine of the Shantung Christian University at Tsinanfu. The former institution was established about twenty-five years ago as a part of the plan of the North China Educational Union, composed of four missionary



bodies. The cost of its establishment and maintenance was borne by the Board of Foreign Missions of the Methodist Episcopal Church in America. The original investment for buildings and equipment was \$100,000 gold. The budget for the past year was \$75,000 gold. During the past year it has had twenty-four students in the medical school, and forty students in the school of nursing. This board has also supplied the largest part of the teaching staff, although some of the teachers were supported by other missionary bodies. The teaching staff has consisted of ten full-time and several part-time instructors.

Prior to the establishment of the new Peking Union Medical College by the China Medical Board of the Rockefeller Foundation in 1919, it was the only organized medical school in North China giving medical education to women. In that capacity it served a useful purpose, even though its equipment was limited.

With the resources and equipment of the new medical college in Peking made available for women, the possibility of funding the resources of the North China Union Medical College for Women with the medical school at Tsinanfu was proposed. The School of Medicine of the Shantung Christian University is the best of the mandarin-speaking and mandarin-teaching medical schools in China. It is supported by a union of missionary bodies, but up to this time the Methodist board has not had a large share in the work. The present transfer will bring the resources of the Methodist board into the union in Shantung, and will result in a great improvement in the facilities for both men and women students, and an increase in the professional staff. Women will enter as first year students with the men in the fall of this year. The rest of the school will be transferred in January, 1924.

#### BELGIUM

(From Our Regular Correspondent)

Feb. 8, 1923.

##### Rinderpest, or Cattle Plague

M. Leynen, inspector of the veterinary service, has just published a report on the incidence of the rinderpest in Belgium during 1920. Since 1865, the rinderpest had not appeared in our country. An investigation was therefore instituted by the department of agriculture to discover the origin of the present epizootic, and it was found that the plague had been introduced into the quarantine stables of the port of Antwerp by zebras brought from India. These animals were much more resistant to the plague than our indigenous cattle, and the mortality in this herd was not very high, so that the presence of the plague was not suspected. The appearance of the rinderpest in Belgium, and likewise of dourine at the present time, shows that diseases that we scarcely anticipate may be introduced within our borders. Hence the necessity arises of having a veterinary service ever on the alert and ready to institute an energetic campaign against epizootics. Such a service is of prime importance not only to safeguard the particular interests of each country but also to protect Europe as a whole. It is quite probable that if a vigorous campaign had not been waged against this epizootic in our country, it would soon have assumed threatening aspects for the neighboring countries. The results secured in Belgium in the fight against the rinderpest prove that in any country in which this disease has been accidentally introduced it should be completely eradicated by the formulation and strict enforcement of sanitary rules.

##### The Belgian Bureau of Eugenics

The Belgian Bureau of Eugenics was created through the generosity of M. Armand Solvay, and is located in the Solvay

Institute of Sociology at Brussels. The inauguration of the bureau was celebrated, a few days ago, in the presence of several departmental ministers. This bureau will occupy itself, from the beginning of its activities, with the organization of research services that will be capable of rendering valuable aid to societies that are dealing with problems of social hygiene.

Workers will be trained in the redaction of genealogical tables, in their schematization according to pedigree, and in the analysis of the personality of people with whom they have dealings, in order that the nature of such persons may be understood better. The investigator in eugenics must not neglect any source of information, such as teachers, instructors, civil and religious authorities, schools, asylums, prisons, hospitals, charity organizations and public health organizations, in order to accumulate a mass of data with regard to the history of families that are dangerous on account of their faults or misdemeanors, or remarkable for their eminently good qualities. This information is then sent to the central office, where it is digested in accordance with a particular classification comprising such groups as families, professional groups and ethnic elements. Thus, the Belgium Bureau of Eugenics brings out the indispensable complementary need of societies of public health and welfare, for the reason that they are pursuing similar ends: an amelioration of the conditions under which new life is generated, and an improvement of the conditions under which lives are lived. It is in these two different domains that the Belgian Bureau of Eugenics will pursue its practical studies, aside from its scientific researches.

##### A Course in Hydrology and Climatology

Until such time as regular instruction in medical hydrology can be provided in our universities, the Société belge d'hydrologie et de climatologie médicales is about to establish special courses, which will begin soon in Brussels (the definite time will be announced later). Dr. Terwagne will open the course of instruction and will give three lectures on thalassotherapy. Dr. Wybauw will give nine lectures on hydrology. Drs. Guilleaume and Schaltin will speak on hydrotherapy. A second course has been planned, for which Dr. Moreau has already been engaged.

##### Transmissibility of Bovine Tuberculosis

In a communication presented recently to the Société royale des sciences médicales et naturelles of Brussels, M. Hamoir took up the controversial question as to whether bovine tuberculosis is transmissible to man, which was answered negatively by the "dualists" of the Koch school. As is well known, this question is one of great importance for the continental countries, in which 4 per cent. of the cattle are affected with tuberculosis. The udder is infected in 5 per cent. of the cows presenting a positive reaction, and in from 25 to 50 per cent. of the cows affected with generalized lesions. The milk preserves a normal appearance for a long time, although its acidity and its butter and lactose content are diminished. The test for *Bacillus tuberculosis* is always positive, and is observed even in cows not yet affected with tuberculous mammitis but reacting to tuberculin. Bacteriologic control of milk should therefore be demanded, since the Koch bacillus is so frequently found in milk delivered for human consumption: in Berlin in 14 per cent. of the specimens examined, in Naples in 50 per cent., and in Washington in 13 per cent. It is well known that there are numerous transitional types between the bovine bacillus and the human bacillus. The human bacillus may be transmitted to cattle by the venous, subperitoneal or subdural route. The human virus, by passage through guinea-pigs, becomes virulent for cattle. The cases of tuberculous meningitis of the bovine type



collected by Adams are frank. In cases of mesenteric and cervical adenitis in children, bacilli of the bovine type are frequently found. The writer considered, therefore, that the ingestion over a prolonged period of tuberculous raw milk constituted a real danger for the child.

#### Autotransfusion of Blood

Speaking before the Belgian Surgical Society, Moons of Antwerp emphasized that operative statistics might be improved by a more extended application of blood transfusion. In six cases in which either he or one of his assistants operated, recovery was much facilitated by the autotransfusion of blood that had collected in the peritoneal cavity. From 700 to 1,200 gm. of blood was recovered with a spoon and filtered through sterile gauze, 1 per cent. of sodium citrate was added, and the blood was injected into the median basilic vein. In a seventh case in which autotransfusion was employed, death resulted eighteen hours after the operation. A rapid rise of temperature had occurred, but there had been no peritoneal symptoms. Moons was in doubt whether death was due to postoperative sepsis or to the autotransfusion of blood. He thinks it is possible that the addition of sodium citrate in this case, in which the amount injected was particularly large (1,200 c.c.), may have been a factor, as recent studies in France and the United States would seem to indicate. Moons stated that in the future he will employ for transfusion noncitratated blood, preferably from a donor, rather than resort to autotransfusion.

#### VIENNA

(From Our Regular Correspondent)

Feb. 25, 1923.

#### Weight and Size of Children of the Working Classes in Vienna

During the last four years all youths coming under the notice of the section "for the care of apprentices" of the ministry of health have been carefully weighed and measured for the purpose of obtaining data on their physical development. There is excellent opportunity for this statistical work, especially in the recreation homes, and the results obtained give a good insight into the variations and changes that are taking place in the working classes of Vienna, for these contribute almost all the inmates of these homes. Dr. Lebzelter has compared the figures for 1919 and 1921. He reports that in 1919 the number of boys in each age year between 14 and 18 was 1,316, 1,776, 812 and 189. The corresponding figures for 1921 were 1,016, 1,518, 1,373 and 681. The average heights in these groups for 1919 were 151.84, 155.34, 160.50 and 165.30 cm. For 1921 they were 154.6, 158.6, 162.62 and 163.39 cm. The average weights for 1919 were: 41, 42.66, 47.5 and 51.35 kg.; in 1921 the corresponding weights were: 44.35, 45.5, 50.0 and 52.5 kg. It is clear, therefore, that the general health of the children of the working classes in 1921 was much better than in 1919; the diminished height of the oldest group of 1921 is perhaps due to the small number examined in 1919 (184 boys as compared with 687 in 1921). The younger groups show, in each instance, more improvement than the older ones; in these the year of starvation had caused damage that was not so easily reparable. Among the boys examined, those whose parents were employed in the electric and metal industries made the best showing; these classes of laborers commanded the highest wages. There is not yet available a suitable basis for conclusions concerning the girls, as regular measurements in 1919 were not obtained. In 1921, however, investigation was conducted on the same lines as with the boys, and the following figures were obtained. The four age groups included

317, 367, 322 and 324 girls, respectively. The average heights were 153.6, 154.5, 155.5 and 155.75 cm.; the average weights, 43.9, 46.96, 48.4 and 52.1 kg. During the stay in the recreation homes, the youths have increased in weight without exception, the six weeks' stay resulting in an average gain of approximately 1.1 kg. for the boys, and 2.25 kg. for the girls. This shows that the importance of such institutions cannot be overestimated.

#### Reforms in Dealing with Juvenile Delinquents

In the last quarter of a century, many reforms in the methods for dealing with juvenile delinquents have been under consideration in this country, but no conclusion has been reached. The ministry of justice finally appointed a commission of legal experts—judges, lawyers and politicians—and child welfare workers to draw up regulations for the use of courts and judges. The outcome of this cooperation has just been published, and will shortly receive the sanction of the ministry as a guide for dealing with such cases. The chief underlying principle is the complete separation of male juvenile delinquents from adult criminals, both in prison and while under trial; in addition, special juvenile courts are instituted. The girls are detained either in a "juvenile" prison or in that for adults, but even there they are segregated. The psychic influence of adult criminals on young minds is most deleterious, not only with first offenders, but also with youths who have served a previous prison term; but it must be kept in mind that not too rarely the young criminal is in no way behind his older "compère" in mental depravity. The new regulations permit the judge to transfer juvenile (below 18 years) cases to the "juvenile court" now in Vienna, even when the crime was committed in a distant part of the country. Heretofore the law has required trial and imprisonment of the offender in the place where the offense was committed. The principle is also established that the punishment should act, not simply as a deterrent, but rather as a means for training a deviated mind; detention in a suitable educational institution will be frequently ordered by the judge. The increasing moral and psychic deterioration of adolescents, noted in the last dozen years, has assumed such proportions as to have become alarming. In fact, alienists and psychologists have declared that the minds of those now in the age groups from 14 to 18 are quite different from those encountered before the war; ethical considerations and self-control play but a small part in the mentality of present-day adolescents of both sexes.

#### Public Health Arrangements in the Frontier Districts of Austria and Czechoslovakia

By mutual consent of the governments, an understanding has been reached between Austria and Czechoslovakia concerning medical practice in the frontier districts, on these lines: Physicians, veterinary surgeons, and midwives residing in these districts will in future be allowed to practice on both sides of the frontier without obstacles from the customs, medical or public health bodies. In emergency they may administer medicines that they carry with them. They must always carry a card of identification that shows their residence in the frontier districts. The inhabitants of these districts are allowed to transport medicines, in appropriate small quantity, across the frontier, if they can satisfy the custom officials that the remedies were obtained on the prescription of a duly qualified practitioner. Simple remedies, the nature of which can be readily ascertained from the package or the label, may also be transported over the frontier without a prescription. Altogether, an amicable understanding in all points relating to public health—notification of diseases, disinfection, water supply and hygienic matters—is being sought.



## BERLIN

(From Our Regular Correspondent)

Feb. 24, 1923.

## Bad Health Conditions in Germany

At the session of the reichstag, held February 20, Bumm, chief of the central public health bureau, gave an exceedingly unfavorable account of prevailing health conditions among the German people, basing his statements on replies to inquiries sent out to the governments of the federated states. The mortality rate has again increased; likewise war dropsy so called, meat poisonings and suicide. Among the causes assigned for the spread of disease are the lack of housing facilities, the advance in medical fees, and the high cost of medicines.

## Hygienic Illumination

According to Professor Korff-Petersen, assistant in the Berlin Hygienic Institute, a white light of 25 standard candles may be regarded as furnishing the necessary minimum of illumination for reading and writing. The demand for 10 candles, which was formerly made, was in the nature of a compromise in view of what was then attainable, and must now be considered as superseded. For certain industrial purposes, still higher illumination may be needed. Whether artificial illumination is furnishing an adequate amount of light at a given place can be easily ascertained by means of a modern photometer. It is, however, more difficult to determine the quality of natural illumination by sunlight; for a photometric apparatus gives only the momentary values, whereas the degree of natural illumination varies widely from moment to moment. In judging of the illumination of a given place, it does not suffice to determine whether or not type of a certain size can be read at that point. We must consider factors that are independent of the changing illumination from the sun; therefore, for purposes of investigation, the total expanse of the apparent heavens or celestial horizon has been reduced to an area, measured in quadratic degrees, that would furnish the same amount of light by direct incidence. For the illumination of a place to be regarded as adequate for reading and writing, it must receive an amount of light equivalent to that of a "*Raumwinkel*" (space) comprising 50 reduced quadratic degrees. In such places one can expect, under normal conditions, an illumination of 10 standard candles, even though the sky may not be very clear. But the requirement of a space equivalent to 50 reduced quadratic degrees satisfies only the former minimal demand, so that such illumination might not be adequate for intensive work. In this measurement the reflected light is left entirely out of account, for which reason, many places that have not the light represented by 50 quadratic degrees of celestial space may nevertheless be adequately illuminated. It is even more difficult to state whether an apartment may be regarded as adequately lighted. In such cases it should be required that at least one third of the floor space should receive the direct rays of light. As a rule, it is sufficient to hold a small mirror 1 meter from the floor and 1 meter from the window and see whether the sky can be seen in it. If that is the case the room can usually be regarded as adequately lighted, provided the desks or work tables are located near the windows.

## A Merger of Social Insurance and Public Welfare Bureaus

A merger of all the public health and welfare centers in the province and the free state of Waldeck has been brought about in order to prevent public health and welfare work in the rural districts from deteriorating. The district leagues, the free state of Waldeck, the provincial insurance bureau, the agricultural bureau, the leagues of the health insurance societies and the central insurance bureau for employees

have formed a merger in order to combine their slender means and place them at the disposal of the welfare bureaus, with the idea that thus the arrangements already made for combating tuberculosis, the establishment of homes for convalescents and the creation of infant welfare stations will be better preserved and, if feasible, further improved. In this merger the medical profession is represented by a physician from each district. It is estimated that, during 1923, 22 million marks will be available to carry out the plans of the merger. According to the expressed wishes of the donors, the funds are not to be given to the welfare bureaus with no conditions attached, but are to serve as a stimulus to renewed activity on the part of the forces already lined up in the various societies. Therefore, the local welfare societies will not be able to draw on the central funds unless they can show that they are equipped to do welfare work and that they themselves are raising money for this purpose. When this proof has been furnished the central office, the local societies will be granted a subsidy, the maximal amount of which will be equal to twice the amount of money the local societies have themselves raised. The merger also claims the privilege of making suggestions to the local societies as to the best means of carrying on public health and welfare work, and it is assumed that the local societies will give these suggestions careful consideration and be guided thereby as far as possible in the local administration of their work.

## A New Center for the Testing of Drugs

In recent months, various writers for THE JOURNAL, including myself, have called attention to the endeavors of the Deutsche Gesellschaft für innere Medizin in creating, several years ago, a testing center for drugs, at the head of which was Professor Penzoldt, formerly director of the Erlangen Medizinische Klinik, with whom was associated Professor Holste, the pharmacologist, of Jena. Recently the establishment of a new testing center for drugs has been undertaken through the cooperation of the central league of the German local health insurance societies and the commission of the Deutsche Gesellschaft für innere Medizin. It is evident that the health insurance societies are particularly interested in keeping worthless drugs away from their patients and in preventing useless expense by the use of immoderately priced preparations. For this reason, they had previously established their own testing center at the headquarters of the board of directors. This arrangement, however, has not proved to be entirely adequate for their service. Without the cooperation of the medical profession, and especially the aid of the clinicians and pharmacologists, the desired goal was not attainable. It remains to be seen whether this new cooperative body will be more successful.

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Marriages

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GEORGE A. MACQUEEN, Charleston, W. Va., to Mrs. Nelle Eubank of Hot Springs, Ark., February 1.

THOMAS DEWEY DAVIS, Richmond, Va., to Miss Willie Evelyn Owens of Marion, S. C., recently.

WILLIAM BURNS MCMURTRIE, Marble, Minn., to Miss Helen E. Thompson of Minneapolis, in January.

ALFRED A. GUMBINER, Los Angeles, to Miss Hope Florence Gibb of Ottawa, Canada, February 28.

JESSE I. JONES, Manchester, Iowa, to Mrs. Irma Frank Howell of Independence, recently.

MAURICE W. MCINERNEY to Miss Elizabeth Marshman, both of Minneapolis, in January.

BERNARD L. TREY to Miss Florence Minor, both of Marshalltown, Iowa, recently.

LAETITIA L. BELAU to Mr. John C. Alford, both of Chicago, March 10.



## Deaths

**Arpad Geyza Gerster**, New York; University of Vienna, Austria, 1872; emeritus professor of surgery at the New York Polyclinic Medical School and at one time professor of clinical surgery at Columbia University College of Physicians and Surgeons; member of the Medical Society of the State of New York; the Southern Surgical and Gynecological Association, the American Gastro-Enterological Association, the German Surgical Association, the Berlin Academy of Medicine, corresponding member of the Royal Medical Society of Budapest and former president of the American Surgical Association; on the staffs of the Lenox Hill and Mount Sinai hospitals, and the Isabella Home; author of *The Rules of Aseptic and Antiseptic Surgery*, and *Recollections of a New York Surgeon*; aged 74; died, March 17, of angina pectoris.

**Herbert Burr Howard**, Reading, Mass.; Medical School of Harvard University, Boston, 1884; died suddenly, March 6, at Lynchburg, Va., of heart disease. Dr. Howard was born in Fitchburg, Mass., in 1855. He was superintendent of the Peter Bent Brigham Hospital, Boston (1908-1919), a member of the Massachusetts Medical Society, the Boston Society of Psychiatry and Neurology, the New England Society of Psychiatry, the American Psychiatric Association, the Massachusetts State Board of Insanity (chairman 1908-1913), the Boston Society for Medical Improvement, the Boston Medical Library, and formerly president of the American Hospital Association. Dr. Howard was chairman of the Hospital Section of the American Medical Association in 1913.

**William Post Herrick**, New York; Columbia University College of Physicians and Surgeons, New York, 1898; member of the Medical Society of the State of New York; the American Urological Association, and the American Public Health Association; formerly instructor of surgery at the New York Post-Graduate Medical School; on the staffs of the Vanderbilt, New York, and Metropolitan hospitals, the DeMilt Dispensary and the Hospital for the Ruptured and Crippled; served in the M. C., U. S. Army, during the World War; aged 53; died, March 13, at St. Luke's Hospital, of pneumonia.

**George Brune Shattuck** ⊕ Boston; Medical School of Harvard University, Boston, 1869; formerly instructor of clinical medicine, and overseer at his alma mater; past president of the Massachusetts Medical Society, and the Boston Medical Library Association; senior physician to the Boston City Hospital and at one time president of the Massachusetts Charitable Eye and Ear Infirmary; ex-editor of the *Boston Medical and Surgical Journal*; aged 79; died, March 12.

**Samuel Whitehill Latta** ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1868; member of the state board of medical examiners, the American Public Health Association, formerly president of the Pennsylvania Railroad Surgeons' Association; Civil War veteran, assistant surgeon U. S. Navy, 1868-1873; chief medical examiner for the Pennsylvania Railroad, 1886-1918; aged 74; died, March 13, of heart disease.

**Patrick Henry McCarthy**, Butte, Mont.; John A. Creighton Medical College, Omaha, 1902; member of the Radiological Society of North America; served in the M. C., U. S. Army, during the World War; member, and at one time president, of the state board of medical examiners; for fifteen years on the staff of St. James Hospital; aged 47; died, March 9, at Rochester, Minn., of pneumonia, following an appendectomy.

**Logan Dillon Hooper Russell**, Liverpool, England; M.R.C.S., London, England, 1870; F.R.C.S., Edinburgh, Scotland, 1880; University of Vermont College of Medicine, Burlington, 1884; for several years justice of the peace in Jamaica, West Indies; medical officer of health for the Port of Bonny, West Africa; formerly a practitioner in the United States and Canada; died, February 13, aged 72.

**James Joseph Roach**, Chicago; Rush Medical College, Chicago, 1901; member of the Illinois State Medical Society; professor of operative surgery and pathology, Chicago Medical College; formerly instructor in anatomy at Northwestern University Medical School, and on the staffs of the Cook County, Fort Dearborn and St. Bernard hospitals; aged 45; died, March 24, of cerebral hemorrhage.

**Alexander Everett Harris** ⊕ Little Rock, Ark.; Jefferson Medical College of Philadelphia, 1901; formerly professor of clinical medicine at the University of Arkansas Medical Department, Little Rock, and on the staffs of the Memorial

City and St. Vincent's hospitals; served in the M. C., U. S. Army, during the World War; aged 44; died, March 7.

**Samuel Albert Graham** ⊕ Lincoln, Ill.; Rush Medical College, Chicago, 1887; formerly district health officer for Central Illinois; for five years assistant superintendent of the Kankakee State Hospital, Kankakee; superintendent of the Lincoln State School and Colony, Lincoln; aged 74; died, March 10, of pneumonia.

**Eugene Daniel McCarty**, Columbus, Ky.; National University of Arts and Sciences Medical Department, St. Louis, 1915; member of the Kentucky State Medical Association; served in the M. C., U. S. Army, during the World War; aged 33; died suddenly, March 7, of cerebral hemorrhage.

**Clarence Augustus Jacobson**, Chicago; University of Illinois College of Medicine, 1916; served in the M. C., U. S. Army, during the World War; on the staff of the U. S. Veterans' Hospital No. 76 (Edward Hines, Jr., Memorial), where he died, aged 29, March 22, of appendicitis.

**Richard Franklin Bennett**, Litchfield, Ill. (licensed, Illinois, 1887); served for five terms as mayor of Litchfield; member of the state board of health, former president of the school board and superintendent of the Hospital for the Insane, Anna; aged 83; died, March 9, of senility.

**Walter Nevin Sharp** ⊕ Indianapolis; University of Vermont College of Medicine, Burlington, 1885; member of the American Academy of Ophthalmology and Oto-Laryngology; formerly on the staff of the Indianapolis City Hospital; aged 64; died, March 8, of pneumonia.

**Charles Ammon Wishart** ⊕ Pittsburgh; University of Pennsylvania School of Medicine, Philadelphia, 1875; member of the American Academy of Ophthalmology and Oto-Laryngology; founder of the Columbia and the Eye and Ear hospitals; aged 70; died, March 4.

**William Buford Pigg**, Okmulgee, Okla.; Kentucky School of Medicine, Louisville, 1882; member of the Oklahoma State Medical Association; formerly president of the Okmulgee County Medical Society; aged 62; died, March 7, at Richmond, Ky.

**Winfield Scott Hill**, Augusta, Me.; Bellevue Hospital Medical College, New York, 1867; practitioner in Augusta for fifty-five years; surgeon to the Augusta City Hospital; veteran of the Civil War; aged 84; died, March 7, of acute bronchitis.

**Edwin Clifford Chipman**, New London, Conn.; Medical Department of Columbia College, New York, 1891; member of the Connecticut State Medical Society; president of the Home Memorial Hospital, where he died, March 9, aged 62.

**H. M. Cox**, San Luis Obispo, Calif.; College of Physicians and Surgeons, Keokuk, Iowa, 1876; formerly superintendent of the San Luis Obispo County Hospital and county health officer; aged 73; died, March 4, of cerebral hemorrhage.

**John Hamilton Potter Conover** ⊕ Elizabeth, N. J.; Columbia University College of Physicians and Surgeons, New York, 1898; city bacteriologist; on the staffs of the St. Elizabeth's and General hospitals; aged 49; died, March 4.

**Levi Welts Case** ⊕ Montclair, N. J.; Medical Department of Columbia College, New York, 1880; on the staff of the Essex County Hospital for Contagious Diseases, Belleville; aged 72; died, March 3, of cerebral hemorrhage.

**Florence L. Marsh** ⊕ Mount Pleasant, Pa.; Jefferson Medical College of Philadelphia, 1868; Civil War veteran; founder and president of the Memorial Hospital; aged 74; died, March 10, of cerebral hemorrhage.

**David Enrique Algorta**, Lima, Peru; University of Nebraska College of Medicine, Omaha, 1922; serving his internship at the Swedish Mission Hospital, Omaha; aged 26; died, March 6, following an appendectomy.

**Absolom Jerome Christopher**, Laurens, S. C.; Atlanta Medical College, Atlanta, Ga., 1888; member of the South Carolina Medical Association; died, January 11, at Rochester, Minn., following an operation.

**Ashbel A. P. Bridges**, Danville, Ind.; Medical College of Indiana, Indianapolis, 1892; member of the Indiana State Medical Association; aged 67; died, March 14, at the Methodist Hospital, Indianapolis.

**Miles Lewis Davis**, Lancaster, Pa.; Bellevue Hospital Medical College, New York, 1870; member of the Medical Society of the State of Pennsylvania; Civil War veteran; aged 78; died, March 8, of paralysis.

**Charles L. Olsen**, Salt Lake City, Utah; Eclectic Medical Institute, Cincinnati, 1898; former secretary of the board of medical examiners and member of the board of registration; aged 66; died, March 8.



**Ethan A. Barnes**, Plattsburg, N. Y.; University of Vermont College of Medicine, Burlington, 1885; member of the Medical Society of the State of New York; aged 61; died, March 17, of angina pectoris.

**Walter W. Rangeley**, Christiansburg, Va.; Baltimore University School of Medicine, Baltimore, 1896; member of the Medical Society of Virginia; aged 55; died, March 4, following an operation.

**Joseph Rhodes**, Chewton, Pa.; Bellevue Hospital Medical College, New York, 1874; for thirty years medical examiner for the Pennsylvania Railroad; aged 75; died suddenly, March 2.

**Henry E. Battle**, Andalusia, Ala.; University of Tennessee College of Medicine, Memphis, 1896; member of the Medical Association of the State of Alabama; died, March 5, of heart disease.

**Edward Baumhoff Le Saulnier** ☉ Eureka, Mo.; Barnes Medical College, St. Louis, 1910; veteran of the Spanish-American War; aged 47; died, March 9, following a long illness.

**Addison McCurtain**, Los Angeles; Louisville Medical College, Louisville, Ky., 1881; Bennett College of Eclectic Medicine and Surgery, Chicago, 1884; aged 64; died, February 21.

**John Isaac Darby**, Columbus, Ga.; Louisville Medical College, Louisville, Ky., 1880; member of the Medical Association of Georgia; aged 71; died, March 4, at Panama City, Fla.

**Herbert G. Richards**, Glastonbury, Conn.; Eclectic Medical Institute, Cincinnati, 1879; aged 66; died, February 23, at the Hospital of St. Raphael, New Haven, following an operation.

**Samuel W. Murphy**, Washington, D. C.; Medical College of Virginia, Richmond, 1863; Confederate veteran; aged 85; died, February 27, at the John Dickson Home, of senility.

**Burton Edgar Manchester**, Milwaukee; University of Buffalo (N. Y.) Department of Medicine, 1886; aged 58; died, March 8, at Columbia Hospital, following an operation.

**Frederick Tigh** ☉ Newburyport, Mass.; Medical School of Harvard University, Boston, 1889; on the staff of the Anna Jaques Hospital; aged 60; died, March 3, of pneumonia.

**Clarence Resseguie Blake**, Northville, N. Y.; University of Vermont College of Medicine, Burlington, 1884; aged 60; died, March 12, of cerebral hemorrhage, due to a fall.

**Edward Bair**, Murphysboro, Ill.; Medical College of Indiana, Indianapolis, 1890; died, March 7, of an overdose of heroin hydrochlorid, presumably self-administered.

**Robert Donald Reynolds** ☉ Greenspring, Ohio; Medical Department of Western Reserve University, Cleveland, 1897; aged 56; died, March 6, of influenza and pneumonia.

**Mariette Grant**, New York; Eclectic Medical College of the City of New York, 1891; aged 55; died, February 16, of a skull fracture sustained when struck by a taxicab.

**Albert Sperry Pierce**, Omaha; Georgetown University School of Medicine, Washington, D. C., 1867; Civil War veteran; aged 83; died, March 8, of senility.

**Jesse Robert Gilbert** ☉ Alamogordo, N. M.; University of Louisville Medical Department, Louisville, Ky., 1894; aged 52; died suddenly, of heart disease, March 1.

**Herbert Pinckney**, New York; Medical Department of the University of the City of New York, New York, 1898; aged 64; died, March 10, of heart disease.

**James O. Latimer**, Rock Creek, Ohio; Eclectic Medical Institute, Cincinnati, 1868; Civil War veteran; aged 86; died, January 30, at Grand Junction, Colo.

**Benjamin Green Brown**, Dalton, Ky.; University of Tennessee College of Medicine, Memphis, 1882; aged 72; died recently, following a long illness.

**W. E. Arnold**, Prescott, Ark.; Atlanta Medical College, Atlanta, Ga., 1861; Civil War veteran; aged 85; died, February 25, following a long illness.

**Charles Manning Freeman**, Metuchen, N. J.; Medical Department of Columbia College, New York, 1884; aged 63; died, March 7, of heart disease.

**Joseph N. Gardner**, Washington, D. C.; University of Maryland School of Medicine, Baltimore, 1889; aged 63; died, February 22, of heart disease.

**Marion Fairweather Stirling**, San Leandro, Calif.; Northwestern University Woman's Medical School, Chicago, 1885; aged 68; died, February 28.

**Richard Lee Bohannon**, Stamford, Conn.; New York University Medical College, New York, 1874; aged 71; died, March 4, of heart disease.

**Harold Metcalf** ☉ Wickford, R. I.; Medical School of Harvard University, Boston, 1887; aged 62; died, March 3, of cerebral hemorrhage.

**Thomas Jefferson Jacobs**, Somerfield, Pa.; New York University Medical College, New York, 1878; aged 69; died, March 9, of pneumonia.

**George W. Bulmer**, Brooklyn; New York Homeopathic Medical College, New York, 1884; aged 67; died, March 8, of cerebral hemorrhage.

**Phoebe N. Bucknam**, Brooklyn; Hygeio-Therapeutic College, Bergen Heights, N. J., 1866; also a druggist; died, February 17, aged 80.

**David Ginther**, North Manchester, Ind.; Eclectic Medical Institute, Cincinnati, 1891; aged 74; died, February 18, following a long illness.

**Herbert Henry King**, Unionville, Mich.; Michigan College of Medicine and Surgery, Detroit, 1905; aged 41; died, March 5, of diabetes.

**Albert Sanders Burt** ☉ Momence, Ill.; New York University Medical College, New York, 1878; aged 68; died, March 10, of pneumonia.

**John R. Couch**, Richmond, Va. (licensed, years of practice); member of the Medical Society of Virginia; aged 54; died, March 2.

**Edgar Thomas Smith**, Boonsboro, Md.; Bellevue Hospital Medical College, New York, 1886; aged 62; died, March 9, of pneumonia.

**William G. Scott**, Los Angeles; Cincinnati College of Medicine and Surgery, Cincinnati, 1862; aged 84; died, February 26, of senility.

**Joseph Frank McMahon**, New York; Bellevue Hospital Medical College, New York, 1882; aged 64; died suddenly, February 20.

**Robert Alfred Windett** ☉ Aurora, Ill.; Rush Medical College, Chicago, 1887; aged 63; died, March 4, following a long illness.

**Hugh Livingston** ☉ Hopkinton, Iowa; Rush Medical College, Chicago, 1890; also a druggist; aged 79; died, March 10, of senility.

**A. D. Berryhill**, McKenzie, Tenn.; University of Tennessee College of Medicine, Memphis, 1892; aged 58; died, March 4, of uremia.

**John T. Dougherty**, Hudson, Pa.; Baltimore University School of Medicine, Baltimore, 1896; aged 54; died, February 27.

**Thomas J. Gipson**, Lawton, Okla.; University of Arkansas Medical Department, Little Rock, 1889; aged 61; died, February 2.

**Nelson Clifton Davis**, Boston; Medical School of Harvard University, Boston, 1909; aged 40; died, March 2, of tuberculosis.

**Thomas Griffin O'Connor**, Imogene, Iowa; Rush Medical College, Chicago, 1896; aged 50; died, March 6, of pneumonia.

**James B. F. Morgan**, Clarksburg, Ohio; Medical College of Ohio, Cincinnati, 1869; aged 86; died, March 6, of neuritis.

**John Silas Bass**, Iola, Kan.; Meharry Medical College, Nashville, Tenn., 1878; aged 72; died, March 4, of pneumonia.

**Albert Smilie Hague** ☉ Fairfield, Iowa; Keokuk Medical College, Keokuk, 1897; aged 51; died suddenly, March 12.

**Edgar Alonzo Ward**, Hedgesville, W. Va.; Kentucky School of Medicine, Louisville, 1893; aged 69; died, March 6.

**Nota A. Glebow**, Boston; University of Würzburg, Germany, 1908; aged 49; died, February 27, of influenza.

**Thomas Kittredge** ☉ Salem, Mass.; Long Island College Hospital, Brooklyn, 1874; aged 70; died, March 11.

**John Butler Grover** ☉ Peckville, Pa.; Albany (N. Y.) Medical College, 1892; aged 54; died, February 21.

**Jesse Augustine Swem**, Henry, Ill.; American Medical College, St. Louis, 1884; aged 64; died, March 1.

**Jasper Tope**, Algonquin, Ohio (licensed, Ohio, 1896); aged 87; died, March 3, of senility.

**H. L. Bowyer**, Emory, Va. (licensed, years of practice); died, January 28.

**Correction.**—In THE JOURNAL, March 17, it was erroneously stated that the late Dr. Carroll Kendrick was a member of the Kentucky State Medical Association; this should have read Mississippi State Medical Association, of which he was formerly president.



## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

### PERALGA

#### A New Foreign "Synthetic"

For the past few years, American physicians have been relatively free from the propaganda of the foreign synthetic drugs—real or alleged. Recently, however, there have been signs of a revival of this type of product. One of the products now being endowed with the halo of creative chemistry

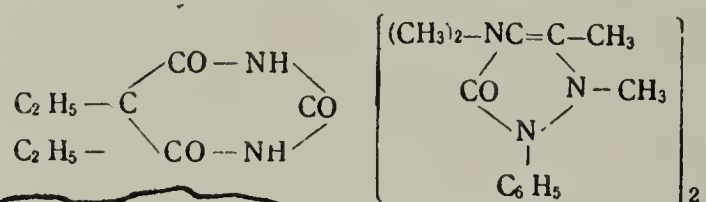
AMONG the most ambitious aims of modern Creative Chemistry, and closely in line with recent pharmacologic teachings, is the endeavor to intensify a given, therapeutically valuable, radical in one chemical compound by synthesis with a radical of similar therapeutic action in another.

If, in the course of this synthetic procedure, the drawbacks and undesired by-effects of either are simultaneously eliminated, the resulting new compound must be regarded as a valuable and welcome new remedy.

PERALGA, known in Europe as "Veramon," a new synthetic analgesic, originated in the Pharmacologic Laboratory of Prof. Starkenstein, University of Prague, Czecho-Slovakia, well known for his Atophan researches, furnishes a rather brilliant illustration of what can be accomplished in this direction.

Here the soundly established, rational pain-relieving properties of Amidopyrine have been chemically potentiated by the highly valued sedative properties of Diethylbarbituric Acid, while the hypnotic effect of the latter has been eliminated.

The result is a definite chemical compound of the formula:



Photographic reproduction (reduced) of part of a Peralga advertising circular. Note the formidable structural formula (alleged) reminiscent of a decade ago.

is Peralga (Schering & Glatz), known in Europe as Veramon. But let Schering & Glatz describe the new creation—the new chemistry (according to S. & G.) "to intensify a given, therapeutically valuable, radical in one chemical compound by synthesis with a radical of similar therapeutic action in another":

"Peralga, known in Europe as 'Veramon,' a new synthetic analgesic, originated in the Pharmacologic Laboratory of Prof. Starkenstein, University of Prague, Czecho-Slovakia, well known for his Atophan researches, furnishes a rather brilliant illustration of what can be accomplished in this direction."

Incidentally it might be said that Starkenstein has lent his name to a number of statements valuable to the proprietary interests, but which cannot stand scientific light.

Peralga, it is claimed, is a "definite chemical compound," the alleged structure of which appears in the accompanying illustration reproducing a page from an advertising circular. According to Starkenstein Peralga is made by heating a mixture of diethylbarbituric acid (barbital) and amidopyrin (first

introduced as "Pyramidon"). It is also claimed that Peralga is absorbed without being split up into its component radicals.

To a chemist, this new "synthetic" resembles a mixture more than it does a compound; it is reminiscent of the days of fake synthetics. Consequently the A. M. A. Chemical Laboratory investigated Peralga. The product is a yellow powder with a methylamine-like odor. It is claimed to melt at 95-97 C., to be readily soluble in hot water and organic solvents, less soluble in cold water. As already mentioned it is said to be formed by heating a mixture of barbital and amidopyrin until fusion takes place.<sup>1</sup>

That Peralga is *not* a "definite chemical compound" as claimed will be seen from what follows: When Peralga is treated with water, or 0.2 per cent. hydrochloric acid solution, in sufficient quantity easily to dissolve the theoretical amount of amidopyrin, an insoluble substance can be removed. The latter has the melting point of barbital and when mixed with a known specimen of barbital, the melting point is not depressed thus identifying it as barbital. In common with barbital, Peralga is more soluble in sodium bicarbonate solution than in water. It is readily soluble in sodium hydroxid solution. Some Peralga was dissolved in sodium hydroxid solution, and shaken, in a separator with chloroform, the chloroform extract was evaporated to dryness in a current of warm air. The substance melted at 103 C. to 105 C., a mixture of the substance and amidopyrin melted at 105 C. to 107 C., and the amidopyrin control melted at 107-108 C. This shows the extracted substance to be practically pure amidopyrin. Quantitatively the amount of barbital extracted from Peralga was 26.1 per cent. and the amidopyrin extracted was 72.0.

Evidently, then, Peralga is not a "definite chemical compound." From a chemical viewpoint it seemed improbable that Peralga (a fusion mixture of barbital and amidopyrin with some decomposition product) will produce any effect different from a mechanical mixture of barbital and amidopyrin in the same proportions.

To determine this, a mechanical mixture of barbital and amidopyrin in the same proportion as in Peralga and also some original Peralga were sent to the Pharmacologic Laboratory of Cornell University Medical College for comparative tests. The summary of the laboratory report was:

"We can see no difference in the behavior of cats towards similar doses of the two preparations: the mechanical mixture made in the A. M. A. Chemical Laboratory and the preparation of Schering & Glatz—and they show very little difference between similar doses of barbital and those contained in Peralga. . . . Of course, there is no chance to make observations on cats that would show analgesic actions in headache. But since the observable effects on cats are so nearly identical, it is only fair to presume that the 'synthetic' and the mixture are practically alike in action."

Thus it is seen that Peralga, stripped of the glittering claptrap, is revealed as essentially a mixture of two well known drugs—deserving no claim of originality; in fact it contains a chemical impurity caused by decomposition of the mixture under heat. Certain it is that a mixture of barbital and amidopyrin is not a contribution to synthetic chemistry<sup>2</sup> as we know the term in this country.

1. If barbital or amidopyrin is placed in an oven at 100 C., no apparent change takes place; but when mixed fusion occurs (such as happens in a depressed melting point determination), with formation of yellow color and amine odor. In this manner there is formed a relatively small amount of a decomposition product, or probably products, not identified.

2. Since this was written, an abstract of an article by J. Herzog has been published (Chem. Zentralbl., Feb. 14, 1923) wherein essentially the same conclusions are reported as given above.

**Necropsy Findings After Clinical Cure of Leprosy.**—The sailor of 59 seemed to have recovered completely from his severe mutilating leprosy, under several years of local and general treatment at Hamburg. After two years without any signs of recurrence, he succumbed to an intercurrent pneumonia, and necropsy revealed a recent leprosy infection in the ulnar nerve, with lepra bacilli. This was the only focus discoverable. The case is reported by Unna and Plaut in the *Dermatologische Wochenschrift* 75:1013, 1922.



## Correspondence

### THE STATUS OF THE CLINICAL PATHOLOGIST

*To the Editor:*—When is a physician not a physician?

Answer: When he is a clinical pathologist.

This is apparently the opinion of the Advertising Committee of the American Medical Association, as expounded in *THE JOURNAL*, Dec. 2, 1922, p. 1937, reporting the session of the trustees at which the question of commercial laboratories came up for discussion. The impropriety of their advertisements as being subversive of the Code of Ethics as well as of good taste had been called to the attention of the trustees by the American Society of Clinical Pathologists, a national organization of the ethical laboratory men of the country. The members of the society firmly adhere to the thesis that the status of the clinical pathologist is on a par with that of the internist, surgeon or other specialist or consultant in medicine, and he is, therefore, subject to the same code of ethics and high moral standards. This is formulated in the By-Laws of the American Society of Clinical Pathologists as follows:

SECTION 1.—The Code of Ethics of this society shall be the same as that of the American Medical Association.

SECTION 2.—It is deemed unethical to publish advertisements in medical journals calling attention to the merits of a particular laboratory or announcing the fees for laboratory examinations.

SECTION 3.—It shall be deemed unethical for a member of the society to lend his name for publication in the laboratory advertisements violating this Code of Ethics.

The justice of the request for elimination of the objectionable advertisements was so apparent that the trustees at a previous meeting had decided in its favor. At a subsequent session, however, the Advisory Advertising Committee brought forward a report which caused the board to rescind its action. The arguments advanced by the committee are so astounding as to merit a rebuttal from outside.

[The Board of Trustees made no previous decision regarding the advertising of commercial laboratories. The Advertising Committee had presented a report to the Executive Committee of the Board, and the Executive Committee referred the report to the full Board of Trustees.—Adv. COMM.]

#### OMISSION OF PRICE

Under the head, "Omission of Price," the Advertising Committee says:

The omission of price permits the man who calls himself a laboratory specialist to make charges for laboratory tests on a sliding scale. Such variations in price are not warranted by the character of the work done. It permits the laboratory man to be a superspecialist of that type which is being opposed in other branches of the profession. The status of the clinical pathologist is not the same as that of the internist or surgeon. The latter deals with variables—human beings. The former conducts manipulations on fixtures—inanimate substances. If the tests are scientifically performed, the results must be the same in the hands of all well-qualified men. Personality does not enter in; training does. It is known that when the prices are not generally known, some laboratories charge physicians unwarranted fees for services. At the same time, when prices are not made public, an unscrupulous physician may charge patients unwarranted prices for laboratory work. Such work as the Wassermann test, urinalysis, blood counts and similar technical procedures are standard commodities which can be furnished by persons of a certain minimum training at a reasonable fixed price which may be estimated and controlled through the advertising committee of *THE JOURNAL*.

Assuming, for a moment, that a Wassermann test is as staple a commodity as, say, a quart of milk, we even find great variations in the price of the latter in different groceries or creameries. If it is the object of the committee "in the interest of the patient and physician" to reduce laboratory fees to the same dead level, why permit these fluctuations of prices in the advertisements? The American Medical Association, following the logic of the committee, should start a

holy crusade against variations in fees for appendectomy—an operation which may be termed standardized, only differing from a Wassermann test in that it is a scientific procedure in vivo, while the Wassermann test is in vitro. The reasoning is, of course, a *reductio ad absurdum*. Just as there are differences among surgeons in their learning, judgment and technic, so there are among pathologists.

[It should be reiterated that routine laboratory tests and examinations are in no way comparable to surgical operations. Routine tests, as a rule, deal with materials outside the body, while surgical operations are made on the living patient.—Adv. COMM.]

As physicians and gentlemen, both can be trusted to serve the best interests of their patients without heralding from the house tops the price of their work. They should be accorded the same right to fix a value on their services as any other professional men. "The Wassermann or urinalysis is a commodity!" says the Advertising Committee. This is the unkindest cut of all. In real life what do we find? The clinician goes over the case with the pathologist—he tells him the history of the patient, gives him the findings of the physical examination, inquires what laboratory tests would aid in the diagnosis and, lastly, when the tests are performed, asks for an interpretation, and the two coordinate their laboratory and clinical investigation toward making the diagnosis.

[The statement that "in real life . . . the clinician goes over the case with the pathologist" and asks the pathologist what tests are to be made does not hold good in even 1 per cent. of cases in our larger cities, and is not at all applicable to smaller communities. It is safe to say that there are not specialists in clinical pathology available for 1 per cent. of such consultations as Dr. Hillkowitz states are regularly held over all patients by the clinician. Certainly, the general practitioner, and particularly those physicians practicing in smaller towns, when in need of laboratory service depend on the regularly established commercial laboratories or on the state laboratory. From the very nature of the case, the specialist in clinical pathology conducts laboratory examinations on a relatively small scale with a naturally higher price, while the commercial laboratory carries on its work on a large scale, and can well afford to do so at a low price.—Adv. COMM.]

The committee says that we are not dealing with variables. If determination of the basal metabolic rate of a nervous patient is not working on a variable, we would like to know their definition of a constant. Where would the committee classify the quick decision whether a breast tumor is benign or malignant while the patient is on the operating table? If we are to employ the mathematical terminology of the committee, the pathologist is dealing with a variable of transcendental functions requiring solution by a ratiocination as difficult as integral calculus.

#### PERSONNEL

Says the committee, "The personnel is a variable factor in laboratory service." We are grateful for this grudging admission of variability. "Hence," argues the committee, "the personnel should be published and thus, in the interests of the physicians and public alike, . . . stimulate competition on the basis of qualification of those doing the work." If this is so, then why in the name of the physicians and the public shall we not encourage the surgeons to advertise their qualifications and their fees for the operations in the pages of *THE JOURNAL* so that the family physician may know on whom to call and protect his patients from exorbitant charges of so-called supersurgeons? For, in the words of the committee, "The interests of the public are served by competition, provided that advertised claims are verified and honestly established; they are not served by the secrecy that



would inevitably follow if advertising of laboratory service were limited merely to the names of individual clinical pathologists."

To this we would reply that THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION has the choice of two methods: Either investigate the individual clinical pathologist before accepting his card, or, what is the better solution, refuse all advertisements from clinical pathologists as it would that of the surgeon or other specialist.

[Dr. Hillkowitz urges that commercial laboratories be prohibited from advertising in medical periodicals, but he seems willing that proprietors of laboratories be permitted to advertise by means of cards as "specialists in clinical pathology."—ADV. COMM.]

#### CONSULTANTS

A deplorable phase in the evils of laboratory advertising is the organization of commercial clinical laboratories on the "chain of stores" idea. Men of ability, occupying teaching positions in medical schools, are tempted by the offer of higher salaries either to relinquish their academic posts and take up a directorship in one of the branch laboratories, or to retain their former chair, and lend dignity to the commercial establishment by functioning as consultants. If socialization of medicine is combated by the rank and file of the medical profession, what should be our attitude toward exploitation of medical talent by a private corporation?

Behold, then, the lamentable spectacle of a body of physicians—clinical pathologists—begging the great American Medical Association to let them practice their specialty in accordance with the A. M. A. Code of Ethics, only to be told that they are not in the same category as their colleagues—that they are only technicians—pariahs, as it were, in the eyes of the healing caste. Shades of Koch and Pasteur! To think that clinical pathology—the most scientific of the specialties, the one based on precision, clear thinking, cold logic, the branch of medicine that requires a knowledge of all the allied sciences in addition to medicine—should be declared an outlaw! This will be a great blow to those who have chosen this field as their life's work.

In all seriousness, we would like to point out the great danger lurking in the dictum of the Advertising Committee. If no encouragement is held out to the clinical pathologist, if his activities are to be classed with department store bargain sales, he will forsake his specialty for the more lucrative and respected field of surgery or internal medicine for which his knowledge and previous training have eminently fitted him. Graduates in medicine will not take up the laborious study and long training in pathology. Communities will be left without the aid of this indispensable adjunct to diagnosis. In this period of standardization of hospitals, when half of the institutions cry in vain for competent laboratory directors, no obstacle should be thrown in the way of those aspiring to take up this field of medicine. There should be clinical pathologists in every community to promote the practice of scientific medicine by a wider application of clinical laboratory methods to the diagnosis of disease.

We do not question the motives of the Advertising Committee. We have no doubt that they are actuated by what they consider the best interests of THE JOURNAL, the profession and the public. The American Medical Association, however, is a democratic organization. We present our side of the case to the entire medical profession in the columns of our official journal. We are confident that the Association which has successfully fought for proper medical education and which has eradicated the nostrum evil in medical advertising will also help us check the commercial degeneration of this important branch of medicine. We have no doubt

that eventually the American Medical Association will answer that a physician is always a physician even when he is a clinical pathologist. PHILIP HILLKOWITZ, M.D., Denver.

[COMMENT.—The comments in brackets in the preceding communication were made by the Advertising Committee of THE JOURNAL and are endorsed. In taking this stand, the Advertising Committee was concerned primarily with the interests and every-day practice of the general practitioner, with the best possible service to the public and with the greatest good for the greatest number. It is believed that THE JOURNAL is doing good in making available information regarding such laboratories which the general practitioner outside of the large cities needs. No advertisement of a laboratory is admitted to the advertising pages of THE JOURNAL until the laboratory has been investigated as to the equipment, the type of work done, the personnel, and the ethical manner in which the work is conducted.—ED.]

#### CANCER STATISTICS FOR JAPAN

*To the Editor:*—Some of your readers may be interested in cancer statistics for Japan, which have recently reached me and which I have consolidated into the form of a five year average, for the period 1914-1918. For the empire of Japan the total mortality from cancer was 192,530, equivalent to a rate of 70.0 per hundred thousand. For males separately considered, the rate was 70.8, and for females, 69.2. This close conformity of the two sex rates would indicate a relatively high measure of accuracy in terminal diagnosis.

For the city of Tokyo separately, and also for the period 1914-1918, there were 7,677 deaths from cancer among both sexes, equivalent to a rate of 79.6 per hundred thousand population. For males the rate was 81.4, and for females, 77.7. The excess rate for Tokyo, over the rate for Japan, is in conformity to general experience, and also supports the conclusion that terminal diagnosis has reached a high degree of perfection in Japan, probably as much so as the corresponding conditions in this country.

The cancer problem in Japan is one of extraordinary interest and well deserving of more critical consideration. Cancer of the female breast is very rare among Japanese women, the rate being approximately one tenth of the corresponding rate for the women of this country and Great Britain. Regardless of this fact, the general cancer death rate of Japan must be looked on as having reached almost the same alarming proportions as the disease has in this country.

FREDERICK L. HOFFMAN, Newark, N. J.

#### THE ABDOMINAL REFLEX IN EPIDEMIC (LETHARGIC) ENCEPHALITIS

*To the Editor:*—In an earlier paper (June, 1922), I mentioned the frequency of changes in the abdominal reflex in epidemic encephalitis, and stated that I felt this had not been sufficiently emphasized. With this thought in mind, the last fifty cases examined (most of them seen during the epidemic of the past winter), have been carefully studied with reference to this symptom, with these findings:

Normal reflex in all quadrants.....	8
Absent reflex in all quadrants.....	26
Absent reflex in one quadrant.....	6
Absent in quadrants of one side, normal opposite side.....	2
Absent in quadrants of one side, present but rapidly exhausted on opposite side.....	3
Absent in upper quadrants, normal in lower quadrants.....	1
Absent in upper quadrants, rapidly exhausted in lower quadrants.....	1
Present in all quadrants, but exhausted after two or three attempts.....	2
Present in all quadrants, but distinctly exaggerated on one side.....	1
Total.....	50



The abdominal reflex was normal only eight times, or in 16 per cent. of the cases, and in the patients seen within one month of the onset of the disease only three presented normal abdominal reflexes in all quadrants. Of the remaining five patients, one had developed the infection six months previous to the examination, one eight months, two two years and one three years.

To offset this, the reflex was absent in all of the abdominal quadrants in patients as late as one and one-half years, one year and eight months, and two and one-half years after the initial infection.

On the foregoing facts, I feel justified in concluding that change in the abdominal reflex is an important diagnostic sign of epidemic encephalitis, and that when the case is seen early (within the first month), it is the most frequent single neurologic symptom.

It may be of interest to note that during the epidemic of the past winter in the Northwest, the radicular and myoclonic types of the disease predominated, and that the greatest number of cases developed during or shortly after a severe cold wave, in which the thermometer registered from 10 to 15 degrees below zero.

GEORGE E. PRICE, M.D., Spokane, Wash.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### PRIZES FOR RESEARCH

*To the Editor:*—Please publish a list of the various prizes offered for research papers by American foundations, societies and associations.  
G. S. M., Missouri

ANSWER.—The following list of prizes was compiled from the columns of THE JOURNAL. THE JOURNAL will be glad to hear of additional prizes not included in this list.

1. The Leonard prize of \$1,000, awarded by the American Roentgen Ray Society for the best original research in the roentgen ray, radium or radioactivity fields of investigation. Papers are to be submitted by July 1, 1923, to G. E. Pfahler, M.D., chairman, 1321 Spruce Street, Philadelphia.

2. The Sofie A. Nordhoff-Jung cancer research prize of \$500, awarded annually by a committee composed of members of the University of Munich for the most conspicuous work in cancer research.

3. The Casselberry prize fund of more than \$500 (April 1, 1922) to be awarded for research in laryngology and rhinology. For further details write Dr. Norval H. Pierce, 31 East Washington Street, Chicago.

4. The Boylston medical prize of \$300, awarded for the best paper on research in medicine. Address Harvard Medical School, Boston.

5. The Roaldes prize, an award of \$200 by the American Laryngological Association for the best thesis on a subject connected with laryngology and rhinology.

6. M. Douglas Flattery fund, the income from a gift of \$7,500 to Harvard Medical School to be used annually to present a gold medal and cash prize of \$500 to him who in any branch of science discovers the greatest means of good to humanity in disease prevention and health conservation.

7. The Cartwright prize of \$500, awarded every two years for original investigation by the Association of the Alumni of the College of Physicians and Surgeons, New York.

8. The Ebert prize of about \$40, awarded annually by the American Pharmaceutical Association to the member who presented the best paper at the previous annual session.

9. The Samuel D. Gross prize of \$1,500, awarded every five years by the Philadelphia Academy of Surgery for the best essay founded on original investigation in surgical pathology or surgical practice.

10. The Gorgas prize medal, awarded annually at the graduating exercises of the Army Medical School by the Association of the Medical Reserve Corps, New York State Division, for the paper that shows the most advance in medicine and surgery, preferably a medicomilitary subject.

11. The Alvarenga prize of about \$180, awarded annually by the College of Physicians of Philadelphia for the best essay on any medical subject.

12. The University of Pennsylvania surgical prize of about \$75, awarded annually to senior undergraduate students for the best essay based on observations at the university clinics in anatomy, physiology and pathology.

13. The Mary Putnam Jacobi research fund, a fellowship (value about \$800), awarded by the Women's Medical Association of New York City to women medical graduates for graduate research work.

14. The George Crocker research fund of \$1,500,000, supervised by Columbia University, New York, and for research only.

### PRESCRIBING CODEIN SULPHATE

*To the Editor:*—What is the maximum amount of codein sulphate a pharmacist is legally permitted to supply to one patient, on a single prescription by a physician? Please omit my name.  
D. S. B.

ANSWER.—The Harrison Narcotic Law fixes no limit on the amount of any narcotic drug that a physician may prescribe. The prescribing of unusually large amounts, however, raises a question as to whether a physician may not be merely pandering to the cravings of a drug addict, and not treating an injury or a disease; and as a prescription issued merely for the purpose of satisfying the cravings of an addict is not a prescription issued in the course of professional practice within the meaning of Section 2 (a) of the Harrison Narcotic Law, and not only exposes to punishment the physician who issues it but affords no protection to a pharmacist who fills it, it is necessary for a pharmacist to exercise his judgment, for his own protection, and to refuse to fill prescriptions that he believes may expose him to penalties.

Where the prescribing of unusual quantities of narcotic drugs may be necessary because a patient is suffering from an incurable and painful disease, an understanding between the physician, the pharmacist and the internal revenue officer is established if the physician writes on the prescription "Exception 1, Article 117." Similarly, if a drug addict is so old and so infirm that withdrawal of the drug would jeopardize his life, his needs may be met and an understanding arrived at by a physician writing on the prescription, "Exception 2, Article 117." Even in such cases, however, a physician cannot prescribe a supply of narcotic drug to last an indefinite period, and under a memorandum issued by the Prohibition Commissioner (Pro. Mim. No. 217), a physician may not prescribe more than one week's supply of a narcotic drug to any one patient, without having obtained a special permit governing the case treated. For information as to the issue of such a special permit, the physician should communicate with the local collector of internal revenue by whom he was registered under the Harrison Narcotic Act.

What has been stated above with respect to narcotic drugs generally is true of codein sulphate, which, being a derivative of opium, comes within the purview of the Harrison Narcotic Act, no matter what the individual physician may believe with respect to its habit-forming properties.

### ENDOCRINE THERAPY IN BALDNESS

*To the Editor:*—I shall appreciate any suggestion you may offer in this case: About fifteen years ago, a woman, at the age of 27, had a complete oophorectomy and suffered the loss of a heavy head of hair almost immediately. Recently she has had an operation for rectocele, and the remaining hair has fallen out until she is practically bald. The scalp is tight and slick to the touch. Is there a glandular extract or other means that will restore the hair growth?

T. G. CALHOUN, M.D., Tenaha, Texas.

ANSWER.—Falling of the hair after illness or operation is usually thought to be due to a toxic disturbance, as a rule an intoxication that produces a febrile disturbance. The hair after this form of baldness very frequently regrows, but not always. No known endocrine fault is connected with baldness of this origin. Massage or other methods of stimulating the scalp by mechanical or other means may do some good. There is some ground for believing that certain forms of baldness, particularly extensive diffuse baldness, may be due to endocrine disturbance. The most tangible reason for this belief is that thallium salts, which produce endocrine disturbance, also cause baldness. There is no endocrine therapy that has proved to be definitely of use in any form of baldness, with the possible exception of the diffuse thinning of the hair that occurs in myxedema. For the ordinary forms of baldness, endocrine therapy has not been found useful.



Medical Education, Registration and  
Hospital Service

COMING EXAMINATIONS

IDAHO: Boise, April 4. Dir., Mr. Harry L. Fisher, Boise.  
ILLINOIS: Chicago, April 10-12. Director, Mr. A. M. Shelton, Springfield.  
MONTANA: Helena, April 3. Sec., Dr. S. A. Cooney, Power Bldg., Helena.  
NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A medical schools. Parts I and II, June 25-27, and June 28-29. Parts I and II, September 24-26, and September 27-28. Secretary, Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for these examinations must be made on or before May 15.

Iowa November Examination

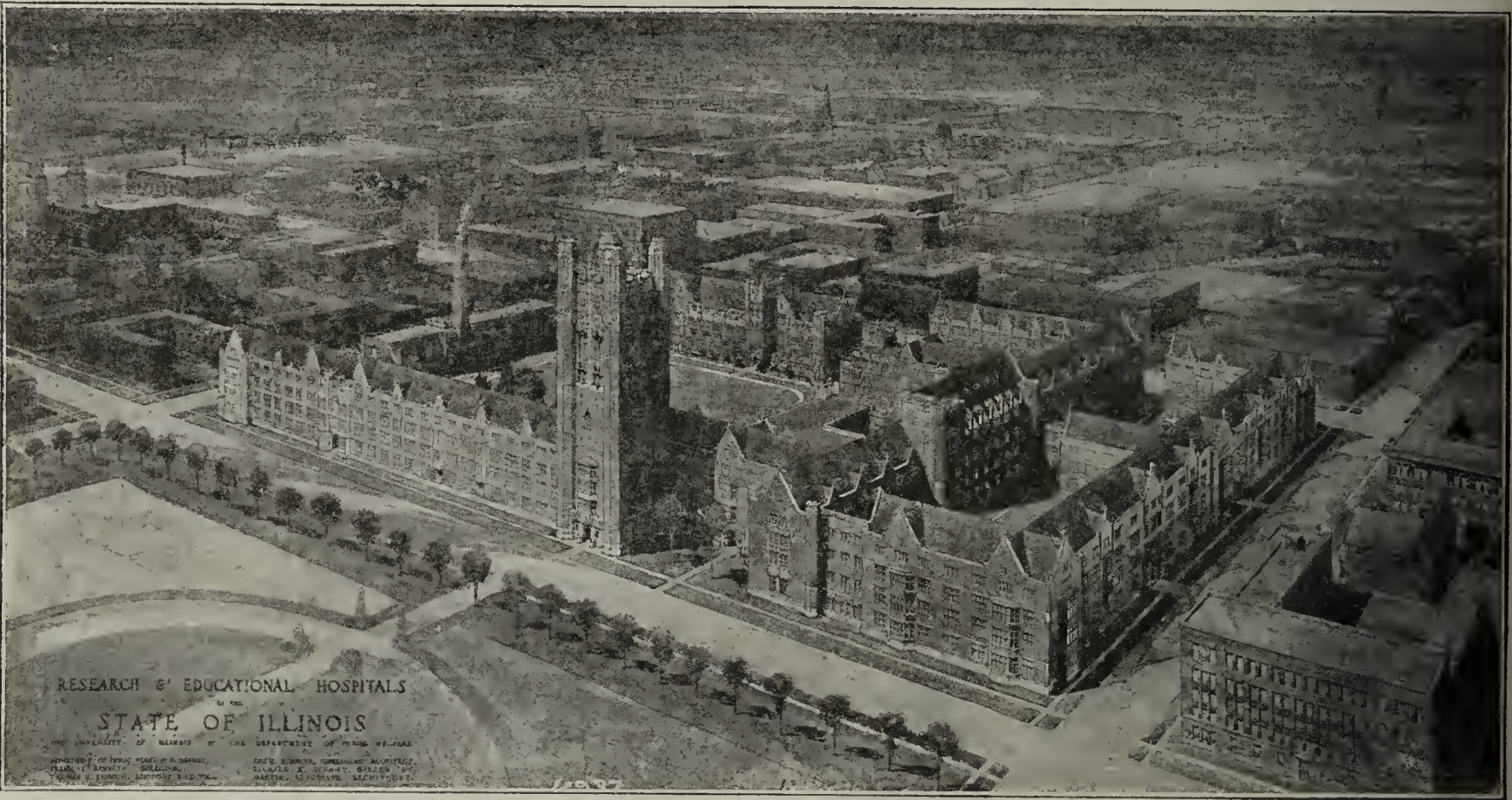
Dr. Rodney P. Fagen, secretary, Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Nov. 1-3, 1922. The examination covered 8 subjects

NEW MEDICAL BUILDINGS OF THE UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE

The accompanying illustrations show the research and educational group of hospitals, laboratories and library, of the state of Illinois, which are now being erected by the state department of public welfare and the state university on the site of the old Cubs ball park in Chicago.

DISTRIBUTION OF SUBJECTS

The main building will contain the outpatient department, medicine, surgery, obstetrics and gynecology, together with some of the specialties, such as eye, ear, nose and throat, and dermatology. A large wing of the main building will be devoted to the study of nervous and mental diseases, and a separate building has been erected for crippled children. As a supplement to these buildings, which have been largely erected by the department of public welfare, the university is now erecting a research laboratory and library.



Research and educational hospitals.

and included 100 questions. An average of 75 per cent. was required to pass. Six candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University .....		(1922)	85.1, 90.4
Rush Medical College.....		(1882)	85.4
Harvard University .....		(1922)	89.1
University and Bellevue Hospital Medical College.....		(1922)	88.7
University of Budapest, Hungary.....		(1918)*	86.2

\* Graduation not verified.

Rhode Island April Examination

Dr. Byron U. Richards, secretary, Rhode Island State Board of Health, reports the written and practical examination held at Providence, April 6-7, 1922. The examination covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Four candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Tufts College Medical School.....		(1903) 96, (1921)	88.2
Cornell University .....		(1918)	92.4
University of Toronto, Ontario.....		(1905)	95.3

When these buildings are completed, the group will form the nucleus of a great medical institution devoted to the study and teaching of the causation, prevention, alleviation and cure of disease, and the promotion of public welfare.

NATIONAL BOARD OF MEDICAL EXAMINERS

Report of Examination in Part III During 1922

A candidate to be eligible for Part III must have successfully passed Parts I and II and have completed one year in an acceptable hospital. The examinations in Parts III are entirely clinical and practical, and are held at the various subsidiary centers established in fifteen large cities in different parts of the country by the National Board. The candidates listed below have therefore been granted the Certificate of the Board, having now completed all of the requirements.

Name and Medical College	Year of Grad.
Ahlfeldt, Florence E., Woman's Medical College.....	1916
Braddock, William Hallock, Columbia Univ., P. & S.....	1914
Darrow, Dan Cady, Johns Hopkins Medical College.....	1916
Dodd, William Earle, University of Pennsylvania.....	1916



gan, Joseph T., Yale University.....	1917
rk, Walter H., University of Minnesota.....	1917
rster, Neslen K., University of Illinois.....	1915
shay, Lee, University of Pennsylvania.....	1916
rdner, Leon L., University of Pennsylvania.....	1916
wkey, Vincent G., University of Pennsylvania.....	1921
yman, Joseph M., University of Pennsylvania.....	1917
nnings, Mary Hill, Woman's Medical College.....	1917
lgore, Allen M., Rush Medical College.....	1918
arx, Frederick William, Harvard Medical School.....	1917
cFarland, Sadie, Woman's Medical College.....	1917
iller, Herbert Payne, University of Iowa.....	1917
st, Max S., University of Pennsylvania.....	1916
upauer, M. G. Adolph, Jefferson Medical College.....	1917
tter, James Craig, Johns Hopkins Medical College.....	1917
tnam, Marian C., Johns Hopkins Medical College.....	1917
egel, Donald, University of Pennsylvania.....	1918
haeffer, Howard William, University of Pennsylvania.....	1917
nith, Woodruff, Johns Hopkins Medical College.....	1914
oenemann, Walter H., Rush Medical College.....	1916
arr, Merritt Paul, Rush Medical College.....	1915
ater, Wayne J., Harvard Medical School.....	1917
iklas, Charles, Harvard Medical School.....	1917
an Den Berg, William J., University of Wisconsin.....	1916

Miscellany

CHILD LABOR IN THE BEET FIELDS  
OF MICHIGAN

Children's Bureau representatives investigated more than 500 families in which either a child under 16, or a mother of a child under 6, worked in the beet fields of Michigan in 1920. A report of the investigation, soon to be issued by the Department of Labor, says that in the families studied, 67 per cent. of the children between 6 and 16 years of age were at work in the sugar-beet fields. One fourth of these child workers were less than 10 years old, and only one fifth were 14 years old or older.

Family labor in the Michigan fields was secured by agents of the sugar companies from Detroit, Chicago, Ohio, the mining districts of West Virginia, and even from Texas and Mexico. A miner from West Virginia said that he had come



Research laboratory and library.

Averages Obtained

Cand. No.	Medicine	Surgery	Obstetrics & Gynec.	Public Health	Final Count
37	100	91.6	89.3	69	318.7
57	84	80.1	84	86	291
77	76.8	82.4	82	74	277.2
82	94.4	88.1	85	63	302.3
83	85.6	87.2	90	84	303
85	81.4	82.2	88	87	291.5
96	94.3	84.5	84.3	85	308.2
99	90.6	87.2	94	88	313.3
103	85.2	83.8	75	86	291.8
104	86.4	84.8	90	84	301
108	100	86.4	83.3	76	312.6
110	83.5	83.2	94	76	293.5
114	85.6	84.8	86	94	303
115	83.6	81.7	85	84	291.2
118	92.8	86	83.3	77	287.6
121	71.7	80	88	74	270.8
132	81.6	90.8	99	87	308.6
135	74.7	68	97	83	268.4
136	79.5	80.5	85	79	282.1
140	81.8	76.1	92	81	283.9
142	88.8	83.2	84	85	299.7
144	86	88.7	80	76	296.5
145	86.4	80	72	82	285
148	86	82.9	88	74	292.2
149	83.3	83.7	91	86	297.4
152	84.5	90.9	90	80	304.4
159	88.8	83.2	86	88	302
160	85.2	85.6	81	88	298.3

to the beet-growing country because his children were too young to work in the mines. All four of his children, the oldest 12, the youngest 5 years of age, worked in the fields; nine tenths of mothers having children under 6 years of age worked in the fields and did housework in addition. So long as pay for beet-field work is practically a family wage, the report states, it is not to be expected that children will be kept in school regularly.

Laborers are assigned as many acres to thin, hoe and harvest the beets, at a fixed rate per acre, as they and their families can take care of. The family working-day during the "thinning" season begins about 6 a. m., and continues, with a time for meals, until 6, 7, and sometimes 8 p. m. Over a fourth of the children worked from eleven to fifteen hours a day. One fourth of the laborers' families received less than \$600 for six or seven months' work in the beet fields. In all but 7 per cent. of the families, the earnings from beet-field work were supplemented by the father's earnings from another occupation during the winter.

Three fourths of the children of school age included in the study had been absent from school on account of their work. Even children of workers who resided permanently in the district attended only 78 per cent. of the average school term, and a large proportion of these children were over age for



the grades they had attained. A supplementary study by the Children's Bureau, in the same three counties of Michigan, of the school attendance of children who did not work in the beet fields, showed that these children had about a third or a fourth as much absence from school as children working in the beet fields.

The sugar companies usually rented old farm houses for their workers or furnished small portable houses, which were sometimes crowded and in bad repair; from three to ten persons in many of the beet-field families were obliged to sleep in one small room. Occasionally a shack of tar paper or tin, or a caravan wagon, was the only shelter provided. One child told the Children's Bureau agent that the family had to take turns going in, as there was not room for all of them at once.

### INFANT MORTALITY AND EMPLOYED MOTHERS

New evidence bearing on the influence of the industrial employment of mothers on infant mortality will soon be published by the Department of Labor. The evidence, which relates to births in Baltimore, indicates that the mother's employment away from home either preceding confinement or during the infant's first year of life is detrimental to the child's health. The employment of mothers during pregnancy is associated with a high stillbirth rate, a high premature birth rate and a high mortality rate during the first month of life. The stillbirth rate among mothers who were employed in industrial pursuits during the year preceding confinement was more than twice as high as that among mothers who were not so employed. Of the live births to mothers employed, 6.2 per cent. were premature, as compared with 5.7 per cent. to mothers not employed. The mortality rate during the first month of life was 77.3 for each thousand among babies of mothers employed or nearly twice the rate, 39.9, among babies of mothers not employed.

That the employment of a mother, if continued until a short time prior to the confinement, is especially harmful is confirmed by this new evidence. Nearly 40 per cent. of mothers employed away from home worked until within two months, and 25 per cent. until within two weeks, of confinement. The employment of mothers too soon after confinement also appears to be a factor in the infant mortality rate. The mortality rate among babies included in this study whose mothers were employed away from home during the babies' first year of life was one and one-half times the rate among babies of mothers not employed.

Breast feeding is denied the baby whose mother works away from home. A much larger proportion of infants of mothers employed away from home were artificially fed than of those whose mothers did not work. That artificial feeding has serious consequences is apparent. The mortality among artificially fed babies averages between three and four times that among breast-fed babies.

That the small earnings of the father are chiefly responsible for the employment of the mother is shown by the contrast between the several income groups in respect to the proportion of mothers employed. Of mothers in families in which the fathers earned less than \$450, 29.2 per cent. were gainfully employed away from home during pregnancy, while 1.2 per cent. of the mothers in families in which the fathers' earnings were \$1,250 or over were employed at that period. The contrast is equally striking in the case of employment following confinement. Of the mothers in homes in which the fathers' earnings were less than \$450, 22.1 per cent. were gainfully employed away from home during the infant's first year of life, as compared with only 0.6 per cent. of the mothers in homes in which the fathers' earnings were \$1,250 or over.

Previous reports of the Children's Bureau on infant mortality have shown a definite connection between income and infant mortality. As the income increases, the infant death rate decreases. This Baltimore study, based on a larger group than the previous studies, permits a closer analysis of the single factor of employment of mothers. The importance of this factor may be realized from the fact that even within the same income groups the mortality rate is higher for babies whose mothers are employed outside the home.

## Book Notices

**PHYSICAL DIAGNOSIS.** By W. D. Rose, M.D., Lecturer on Physical Diagnosis and Associate Professor of Medicine in the University of Arkansas. Third edition. Cloth. Price, \$8.50. Pp. 755, with 319 illustrations. St. Louis: C. V. Mosby Company, 1922.

This edition, well indexed, considerably enlarged, partly rewritten, and containing a chapter on the cardiac arrhythmias by Dr. Drew Luten of Washington University School of Medicine, is designed for the medical student and the busy practitioner. The chapters devoted to the physical diagnosis of the chest seem adequate from the standpoint of the medical student; those dealing with the cardiovascular system and the abdomen are less adequate, while those concerned with blood pressure, electrocardiography, the roentgen ray, and examination of the nervous system are sketchy and of doubtful value. Following the usual custom, the author has introduced the principal "systems" by chapters on clinical anatomy. These consist largely of information gleaned in the mortuary, appropriate in regard to the chest, but entirely inadequate in the case of the abdominal viscera and particularly of the gastro-intestinal tract. As in other textbooks on physical diagnosis, the advance in our knowledge of relations and normal variations of the abdominal viscera in living subjects furnished by the roentgen ray and by surgery has been largely disregarded. The modern textbook should substitute for old diagrams of the hollow viscera made from the dead the knowledge obtained from the study of the living. For example, the student should be taught that there are normal and individual variations in the shape, size and position of such organs as the stomach. It would seem, also, that a work would be of more value to the student if, instead of attempting to cover the whole field of physical diagnosis in the broadest sense, it limited the subject matter to the actual phenomena that may be observed in health and in disease, with detailed description of the means of eliciting signs, their probable mode of production, their significance and their relation to symptoms. This, after all, is what the author attempts to do. Inclusion of chapters on the roentgen ray and electrocardiography, subjects that require special and separate consideration, serve to emphasize the inadequate presentation of the chapters mentioned. A textbook of which three editions have appeared in five years, particularly one placed largely in the hands of medical students, deserves careful scrutiny from the standpoint of medical education. Viewed from this standpoint, the book does not meet the requirements of the ideal textbook on physical diagnosis.

**THE PHYSIOLOGY OF REPRODUCTION.** By Francis H. A. Marshall, Sc.D., D.Sc., F.R.S., Reader in Agricultural Physiology in the University of Cambridge. With Contributions by William Cramer, Ph.D., D.Sc., M.R.C.S., James Lochhead, O.B.E., M.A., M.D., and Cresswell Shearer, M.D., Sc.D., F.R.S. Second edition. Cloth. Price, \$12 net. Pp. 770, with 187 illustrations. New York: Longmans, Green & Co., 1922.

The first edition of this work has been out of print for some time. In the present edition all departments have been brought up to date by the addition of new material, particularly new research on the generative organs. The work is almost encyclopedic on the subject it covers. The physiology of breeding in every type of life is described. Special chapters are devoted to the changes of the reproductive organs and to the process of reproduction. Two valuable new chapters concern the biochemistry of the sexual organs, and "the testicle and ovary as organs of internal secretion." In the latter chapter the newer attempts to show whether or not these glands have an internal secretion and the various extirpation, ligation and roentgen-ray methods are given special consideration. The author seems to be particularly impressed with the rejuvenation experiments of Professor Steinach. The chapter on fetal nutrition has been little changed from the previous edition, since the authors believe that few new contributions have been made on this subject. Nevertheless, some excellent work done in this country has been overlooked by the English writers, especially that done at Yale University under the supervision of Dr. Slemmons.



Among other chapters of great interest are those on lactation, fertility and the factors that determine sex. After a complete consideration of the literature, the authors conclude that sex is not determined by the same factors in all cases, and that it is not determined at the same period of development but may be called into being at a later stage of life; in fact, they state that there is evidence of a change in the metabolism even in comparatively late life which may initiate changes in the direction of the opposite sex or even bring about a complete sex reversal.

**I BELIEVE IN GOD AND IN EVOLUTION.** By William W. Keen, M.D., Emeritus Professor of Surgery, Jefferson Medical College. Cloth. Price, \$1. Pp. 100. Philadelphia: J. B. Lippincott Company, 1922.

Dr. Keen, who is now over 87 years of age and who years ago retired from active practice, seems to be as active now as are many men in their prime. And his activities are all altruistic—for the benefit of his fellows, morally and spiritually, and in defense and praise of that profession to which he devoted his life. The present book is an illustration. It is an elaboration of the commencement address which he delivered before the Crozer Theological Seminary last June; and presumably is a reply to the small group of propagandists against evolution, led by W. J. Bryan. Dr. Keen's main points are the analogy of the anatomy and physiology of man to other animals, the rudimentary organs—as, for instance, the appendix and embryonic deformities. The facts presented here will not convince W. J. Bryan and his followers—nothing will—but they make interesting reading. However, while it may not accomplish the purpose for which it was written, Dr. Keen, apparently without knowing it, has given us a book that, with a little deletion of irrelevant matter, would make a splendid bit of literature to use as evidence of the practical value and righteousness of animal experimentation.

**LES PHÉNOMÈNES DE DESTRUCTION CELLULAIRE: AUTOLYSE—HÉMO-LYSE—BACTÉRIOLYSE—ORGANOLYSE—L'IMPORTANCE DE LEUR RÔLE EN PATHOLOGIE.** Par Louis Bory, Chef de Clinique à la Faculté de Médecine de Paris. Préface de M. le Prof. G.-H. Roger. Paper. Price, 12 francs net. Pp. 211. Paris: Masson et Cie, 1922.

This is an attempt to correlate numerous lytic phenomena as divergent and unrelated as postmortem autolysis, hemolysis by chemical agents, and bacteriolysis of the d'Herelle type. As these processes have in common only the disintegration of complex protein structures, brought about by measures that are extremely dissimilar, the result of the attempted correlation is not convincing and does not seem to lead to any particular goal. The author, apparently, is unfamiliar with most of the modern work on the topics under discussion, for among the numerous references cited are virtually none that are less than ten years of age. To discuss autolysis at length without taking into consideration the fundamental influence of H-ion concentration is not profitable. Since most of the references are of the period of 1907 to 1912, except for a brief reference to the bacteriophage, and the discussion is based on the knowledge of that date, the suspicion is aroused that this publication has been lying dormant for about ten years, and then published without modernization.

**ABNORMAL BEHAVIOR. Pitfalls of Our Minds. An Introduction to the Study of Abnormal and Anti-Social Behavior.** By Irving J. Sands, M.D., Instructor in Neurology, Columbia University Medical School, and Phyllis Blanchard, Ph.D., Psychologist, Monmouth County Mental Hygiene Clinic. Cloth. Price, \$4. Pp. 482. New York: Moffat, Yard & Co., 1923.

This volume contains the results of the authors' study of cases observed in the psychiatric service in Bellevue Hospital. These cases were usually conduct disorders showing various forms of abnormal behavior, resulting from social maladjustment and in many instances terminating in delinquency or insanity. In the course of the book, 137 cases are reported in literary style, technical terms being avoided as much as possible. The book is especially adapted to social workers, probation officers, parents and teachers rather than to the technical psychiatrist. It is not, however, adapted for the general reader, since comprehension will require more than ordinary knowledge of modern psychiatry and abnormal psychology. Throughout the discussion the authors show an excellent balance and good judgment as to that which is

proved in psychoanalysis, physiology and pathology. They wisely reject much of the advanced interpretation that does not rest on any solid basis of proved fact.

**THE GOLD-HEADED CANE.** [By William Macmichael, M.D.] New edition with introduction and annotations by George C. Peachey. Cloth. Price, \$4.50. Pp. 195, with illustrations. London: Henry Kimpton, 1923.

Four editions of the "Gold Headed Cane" have appeared previous to the one here reviewed, the first in 1827 and the second in 1828; the third edition, published in 1884, was edited by William Munk and supplied with notes, and continued the narrative up to the year 1858; in 1915 an edition was issued with an introduction by Sir William Osler and the preface by F. R. Packard, and this edition was reprinted in 1920. The present edition is printed as a quarto on large sheets with wide margins. It is edited and has an introduction by George C. Peachey, who has also provided notes concerning some of the other characters mentioned in the book. The "Gold Headed Cane" is one of the classics of English medical history. Readers will no doubt remember that the cane is assumed to have passed through the hands of Radcliffe, Mead, Askew, the Pitcairns and Baillie, and the story it tells is interspersed with anecdotes of the lives of these great physicians. The book merits the excellent format of this new edition.

**DIE INDICANÄMIE: IHRE BEDEUTUNG ALS NIERENFUNKTIONSPROBE.** Von Dr. Gustav Baar. Paper. Price, 750 marks. Pp. 148. Berlin: Urban & Schwarzenberg, 1922.

This is a supplementary study to "Die Indicanurie," published in 1912, and represents Baar's investigations to test the truth of the assertions of Haas and of Rosenberg that an increased indican content of the blood is of special value in the diagnosis of renal insufficiency. Haas had stated that a blood indican value of 0.16 mg. for each hundred cubic centimeters was indicative of renal insufficiency, while Rosenberg showed that certain gastro-intestinal disorders as well as many cases of cardiac incompetence were associated with values of 0.16 mg. per cent. and over. The method used in this study was the quantitative one of Jolles, in which the blood protein is precipitated by addition of 20 per cent. trichloroacetic acid and the filtrate treated with 5 per cent. alcoholic thymol solution and concentrated hydrochloric acid containing 5 per cent. of ferric chloride. The violet colored mixture is then extracted with chloroform and compared colorimetrically with similarly treated standard solutions of pure indican. As is well known, indicanuria is a frequent finding in intestinal and septic conditions as well as in true "metabolic" states in which an increased nitrogen decomposition occurs. However, Baar's results seem to indicate that indicanuria and indicanemia do not necessarily run parallel, and that absorption of excessive indican from the bowel, as indicated by an indicanuria, causes no increase of the blood indican in cases in which the kidney is normal. In 37.5 per cent. of his cases of gastro-intestinal diseases an increase in the blood indican was noted without any evidence being present of renal insufficiency, but he does not believe this finding due either to increased intestinal decomposition or to an increased urea retention. His work seems to show that the value of the nitrogen determinations of the blood is far less than that of the blood indican, since excessive blood indican values are typical for a renal insufficiency (with the exceptions mentioned by Rosenberg), while the nitrogen values, even in irreparable renal insufficiency, may at times be within normal limits and at times far above normal. Baar reports cases in which there was no increased blood nitrogen, but increased blood and urine indican and, on the other hand, a group of cases without increased blood nitrogen or blood indican but with markedly increased urine indican. A further group, associated with renal insufficiency, showed marked increase in blood nitrogen and indican but very little urine indican. From these results, Baar draws the conclusion that the indicanemia in nephritis is not dependent on the increased nitrogen values of the blood or on increased indican formation in and absorption from the bowel but, rather, depends on retention of indican as a result of renal insufficiency. In acute nephritis, while the blood nitrogen values may be increased and may later rise or fall, the blood indican seems



## Medicolegal

### Revenue Law Regulation of Prescribing Narcotics— Conspiracy of Physician and Druggist

(*Smith et al. v. United States (U. S.), 284 Fed. R. 673*)

The United States Circuit Court of Appeals, Eighth Circuit, in affirming a judgment of conviction of a physician and a druggist for conspiring to violate Section 2 of the Harrison Narcotic Law as amended, says that it was argued that the Harrison act is a purely revenue measure; that, so treated, it does not forbid prescriptions for narcotics by physicians given with no intention of medical treatment but to satisfy drug cravings of addicts, and does not forbid druggists filling such prescriptions, with full knowledge of their character. The Harrison act is a revenue measure. However, Congress had the power to enact all requirements in connection with that, or any other act, which it deemed advisable, for the purpose of enforcing and making the law effective; and such power is limited only by the restriction that requirements are reasonably related to its apparent purpose. Considering the character of the traffic and the difficulty of enforcing this revenue act, this court thinks that the requirement that physicians should prescribe bona fide in the course of professional treatment in order to bring them within the exception in the statute is reasonable and germane to the revenue purpose. This is equally true of a sale by a druggist with knowledge that the purchaser is seeking the drug on a bogus prescription.

In the instructions given to the jury, they were told, among other things, that this case came under the federal statute which provides that it shall be unlawful for two or more persons to combine, confederate or agree to commit an offense against the United States. It does not require any formal action on the part of the parties to set it in motion. It is sufficient if, in a given case, as charged, there is a common understanding, tacit or otherwise, so that the parties understand among themselves that they are going to do the forbidden thing, that one or both of them is to do some act, or the acts, which are essential to bring it to a successful conclusion. Here there was evidence that a government agent went with another man, through some arrangement made by the latter, to the office of the defendant physician to get some prescriptions, 100 in all; but only 35 were ready; and when other persons came in and asked for prescriptions for drugs, they were handed some of those that were already prepared, and their place was supplied by writing others until 100 were written. And, on request, the physician called the druggist on the telephone and notified him that the agent was coming over with these prescriptions.

Now, the circuit court of appeals holds, a conspiracy must usually be established by evidence of different actions by the separate conspirators showing knowledge of and execution of the conspiracy. Here it was entirely proper to show what either the physician or the druggist did in connection with the transaction, for the purpose of establishing a conspiracy. These acts fitted together perfectly, forming a mosaic which showed the conspiracy in outline and detail. The large number of such prescriptions given by the physician and filled by the druggist; the acquaintance between them; the unhesitating act of the physician in giving the agent a large number of prescriptions and of the druggist in filling them without even looking at them; the telephone conversation, and the anxiety of the druggist for the purchaser's safety and the method of delivery at the garage all showed clearly a concerted plan of action. These were enough of themselves to prove the conspiracy and the fact that it was in existence and operation before the agent went to the physician's office for the prescriptions.

The court does not find error in an instruction a part of which was that it is no enticement to ask a physician to write an illegal prescription, if you suspect that he might do it, and you want to find out whether he does it; nor to ask a druggist to sell narcotics illicitly, because both of them know better, and if they are going to obey the law they will not fail to do so in response to any form of petition or

to show a persistent increase, although cases may be found in which neither nitrogen nor indican are increased. In chronic nephritis, the blood indican is constantly increased if the nitrogen values are increased, yet one cannot assume that the blood indican will sink if the nitrogen values sink, as he often finds an increase of indican in spite of decrease of nitrogen. His figures show that in uremia and chronic nephritis, as well as in severe anemias in which we have a "metabolic indicanemia," the blood indican values were virtually never under 0.16 mg. for each hundred cubic centimeters of blood. In uremia the urine indican is almost always under 1 mg., the normal value being 0.65 mg., that is, very little of the blood indican is excreted by the urine. Unless there is a renal insufficiency, the urinary indican runs parallel to the indican of the blood. These results of Baar are certainly significant, and seem to prove conclusively that figures of 0.16 mg. of indican for each hundred cubic centimeters of blood speak for a renal insufficiency in the absence of gastro-intestinal disorders and of certain cases of cardiac incompetence.

**THE ART OF ANAESTHESIA.** By Paluel J. Flagg, M.D., Lecturer in Anaesthesia, College of Physicians and Surgeons, New York. Third edition. Cloth. Price, \$4.50. Pp. 371, with 136 illustrations. Philadelphia: J. B. Lippincott Company, 1922.

This edition contains an additional chapter on selection of the anesthetic and the method of administration, and a brief discussion of synergistic anesthesia and status lymphaticus. As in the previous editions, the author has succeeded in providing a manual that may be studied with profit by student and anesthetist. The individual experience of the specialist in anesthesia will doubtless lead to divergent opinions, particularly as to the safety and efficacy of the open method of anesthesia. The author's objections to this method are not well founded, as can be demonstrated whenever the method is properly used. Why draw conclusions from the results seen in a clinic in which lay anesthetists improperly employ the method? The dangerous practice of touching the cornea to determine the degree of anesthesia is certainly open to criticism. The chapter on the point of view of the patient should be read by every surgeon and anesthetist. There is a good index, and the illustrations are ample.

**PNEUMOCOQUES ET AFFECTIONS PNEUMOCOCCIQUES.** Par L. Cotoni, C. Truche et Mlle. A. Raphael. Paper. Pp. 224, with 4 illustrations. Paris: Masson et Cie, 1922.

In the first part the history and characteristics, morphologic, cultural and immunologic, of the pneumococci are discussed. In the historical part the independent discovery in 1881 of the pneumococcus in the sputum by Sternberg, later surgeon-general of the U. S. Army, is not mentioned. The remarkable antipsonic substance in virulent pneumococci (Rosenow's "virulin," the "antiphagin" of Russian investigators) also seems to have escaped mention. Part 2 deals with the habitat of the pneumococci and the pneumococcal infections. Here again is noted a failure to consider certain American contributions. Part 3 is devoted to the treatment of pneumonia, but sufficient evidence is not presented to justify any conclusion that in practice this treatment is of decisive value. To students of the pneumococci, this book will be of interest in that it presents the subject from the French point of view, and as such contains much that is of great value.

**RICKETS.** A Study of Economic Conditions and Their Effects on the Health of the Nation, in Two Parts Combined in One Volume. By J. Lawson Dick, M.D., F.R.C.S., Deputy Commissioner of Medical Services, London Region. Cloth. Price, \$5.50. Pp. 488, with illustrations. New York: E. B. Treat & Co., 1922.

This deals especially with the etiology of rickets; much space is devoted to the geographic distribution of the disease and the explanations for its confinement to the industrial districts of northern Central Europe and the United States. The extensive recent work done in America by Howland, Park, MacCallum and others on the etiology and treatment is not touched on. The chapters on the literature of rickets dealing with Glisson and his times, and on ancient medicine and rickets, will be of some interest to the medical historian. The economic aspects of the disease are dealt with in considerable detail.



inducement, and it is perfectly within the rights of investigating officers to determine, by such means as were here disclosed, whether a party, or parties, are engaged in violation of the law, and, if they are, to take steps accordingly.

### Physician Held Liable for Leaving Drainage Tube in Wound

(*Chesley v. Durant (Mass.), 137 N. E. R. 301*)

The Supreme Judicial Court of Massachusetts says that, July 29, the defendant operated on the plaintiff for appendicitis; and, August 4, symptoms of sepsis having appeared, he inserted in the wound, for the purpose of drainage, a piece of rubber tubing about 2½ inches long and one-eighth inch in diameter. Until August 13, he dressed the wound and inserted a new tube each day. On the 15th he went on a vacation, leaving the patient in the care of another physician, whose first dressing was applied the 16th. The latter physician continued as the one in charge until the patient left the hospital, and thereafter at her residence up to September 6, when the wound appeared to be clean and healed. In his treatment, he did not insert a drainage tube, and the jury could find on the plaintiff's evidence that after leaving the hospital she improved rapidly and gained in strength, until the following September, when her health began to decline, and she experienced much tenderness, with a sensation of circulation in the wound, which in November opened, and something protruded from it. A nurse who was called pulled from the wound a tube covered with blood, about 2½ inches in length.

The defendant last dressed the wound on August 14, and the evidence was conflicting as to whether he then removed the old tube and inserted a new one. The jury could disbelieve the statements of the defendant and the other physician that the old tube had been withdrawn, and of the defendant that it was not replaced by a new one, and accept the plaintiff's statement that whenever a tube was inserted she had a feeling or suspicion that it was being done, and that at the defendant's last dressing she had no such sensation. They also had before them the plaintiff's evidence that when she told the defendant that the tube had been found and extracted, he did not deny her statement that he had not inserted a tube at his last visit, as well as the testimony of the other physician that at that time no tube was inserted, because the drainage had substantially ceased.

The outstanding fact on the record was that after the wound apparently had fully healed and after pronounced symptoms of irritation and inflammation became manifest, the wound reopened and a tube of the kind admittedly used by the defendant was discharged. A finding was warranted that this abnormal and dangerous condition arose from the defendant's treatment while he was in attendance and before he placed the plaintiff, during his absence and with her consent, in the care of the other physician, who in a similar action tried with the present suit was exonerated by the jury. The defendant was required to use such reasonable skill and diligence as members of his profession commonly possess and exercise under corresponding conditions, and it was for the jury to say, under appropriate instructions, whether under all the circumstances his conduct came up to the required standard.

The jury returned a verdict in favor of the plaintiff for \$1,500, and the defendant brought exceptions, which are overruled. His motion for a directed verdict, and his request for an instruction that there was no evidence to warrant the jury in finding that there was any negligence on his part, were rightly denied. His request for an instruction that there was no evidence to warrant a finding that the plaintiff's nervous and other trouble after the tube was removed, and the wound healed up, was in any way caused by the leaving of the drainage tube in the plaintiff's wound while she was at the hospital; and his request for an instruction that there was no evidence to warrant the jury in finding that the plaintiff was incapacitated for work at any time later than two weeks following the removal of the tube, November 7, which in substance asked that the jury be instructed to disregard the plaintiff's testimony of her physical suffering, which the jury could find in character and duration was caused by the defendant's negligence, could not have been given.

## Society Proceedings

### COMING MEETINGS

- Alabama, Medical Association of the State of, Mobile, April 17-20. Dr. H. G. Perry, State Board of Health, Montgomery, Secretary.
- American Association of Physicians, Atlantic City, May 1-3. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.
- American Climatological and Clinical Association, Niagara Falls, Ont., May 23-25. Dr. Arthur K. Stone, Framingham Center, Mass., Sec'y.
- American Congress on Internal Medicine, Philadelphia, April 2-7. Dr. Frank Smithies, 1002 North Dearborn Street, Chicago, Secretary.
- American Gastro Enterological Association, Atlantic City, April 30-May 1. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.
- American Gynecological Society, Hot Springs, Va., May 21-23. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.
- American Laryngological Association, Atlantic City, May 16-18. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
- American Laryngological, Rhinological and Otolological Society, Atlantic City, May 10-12. Dr. W. H. Haskin, 40 E. 41st St., New York, Sec'y.
- American Society for Clinical Investigation, Atlantic City, April 30. Dr. James H. Means, 15 Chestnut Street, Boston, Secretary.
- American Urological Association, Rochester, Minn., May 21-23. Dr. H. G. Hamer, 723 Hume-Mansur Bldg., Indianapolis, Ind., Secretary.
- Connecticut State Medical Society, New Haven, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
- Georgia, Medical Association of, Savannah, May 2-4. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.
- Illinois State Medical Society, Decatur, May 15-17. Dr. W. D. Chapman, Silvis, Secretary.
- Iowa State Medical Society, Ottumwa, May 9-11. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.
- Kansas Medical Society, Kansas City, May 2-4. Dr. J. F. Hassig, 800 Minnesota Avenue, Kansas City, Secretary.
- Louisiana State Medical Society, New Orleans, April 24-26. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.
- Maryland, Medical and Chirurgical Faculty of, Baltimore, April 24-26. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore.
- Mississippi State Medical Association, Vicksburg, May 8-9. Dr. T. M. Dye, Clarksdale, Secretary.
- Missouri State Medical Association, Joplin, May 9-11. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
- Nebraska State Medical Association, Lincoln, May 14-17. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
- New Hampshire Medical Society, Concord, May 23-24. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
- North Carolina, Medical Society of the State of, Asheville, April 17-19. Dr. L. B. McBrayer, Sanatorium, Secretary.
- Ohio State Medical Association, Dayton, May 1-3. Mr. D. K. Martin, 131 East State Street, Columbus, Secretary.
- South Carolina Medical Association, Charleston, April 17-19. Dr. Edgar A. Hines, Seneca, Secretary.
- Tennessee State Medical Association, Nashville, April 10-12. Dr. Larkin Smith, 154 Eighth Avenue, N., Nashville.
- Texas, State Medical Association of, Fort Worth, May 8-10. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.
- Western Electro-Therapeutic Association, Kansas City, Mo., April 19-20. Dr. Charles Wood Fassett, 115 E. 31st Street, Kansas City, Secretary.

### ASSOCIATION OF AMERICAN MEDICAL COLLEGES

*Thirty-Third Annual Meeting, held at Ann Arbor, Mich., March 2 and 3, 1923*

The President, DR. CHARLES P. EMERSON, Indianapolis, in the Chair

#### Problems of the Two Year Medical Schools

DR. HARLEY E. FRENCH, Dean, University of North Dakota School of Medicine: These problems or difficulties may be grouped thus: 1. The difficulty in securing and holding qualified teachers. 2. The possible difficulty in securing adequate clinical facilities to satisfy the best interests or the demands of our curriculum committee. 3. The transfer of men to clinical schools. 4. What to do in the face of the recommendation of the Council on Medical Education and Hospitals that four year courses be established in all states where adequate finances can be obtained. For a time no difficulty was experienced in transferring students to clinical schools. Today the reduced number of schools plus the limited possibilities for clinical instruction place the two year schools in a precarious position. Most of the two year schools should be encouraged to go on in their present lines if their work measures up to reasonable standards. The building of university hospitals and the location of certain state institutions with reference to these medical schools should be encouraged by both the authorities of these schools and the leaders of medical education. This should be done



for many reasons, but not with the idea that these schools will necessarily be enabled thereby to establish four year courses.

## DISCUSSION

DR. C. R. BARDEEN, University of Wisconsin: The two year schools perform a good service. It is important for the two year school to keep in touch with clinical medicine, and it is probably more important for the two year school to have men with medical training in charge of the laboratories. The two year school, if it keeps in touch with the practice of medicine, can perform a very good service.

DR. C. P. LOMMEN, University of South Dakota: In South Dakota it will probably take a great many years before we can provide anything like adequate clinical instruction. Some scheme should be developed for taking care of the product of the two year schools. The problem of placing our students is a difficult one.

DR. W. S. LEATHER, University of Mississippi: We have formed an affiliation with the four year medical schools of the different universities so that we have had very little trouble in placing our students.

DR. WILLIAM DARRACH, Columbia University: The two year schools are doing splendid work. We have taken a great many students of advanced standing from the two year schools. With the increased numbers of students seeking to enter medical schools, we have been driven to limit our classes. This limitation demands a careful selection of students.

DR. WALTER L. NILES, Cornell University: Ultimately the number of two year students will increase to the extent we expect in other years, which will provide for a considerable number of desirable students from the two year schools. Our experience has been that the work of the students from the two year schools has been very satisfactory.

## Four Years in Medicine: The Hospital Medical School

DR. THOMAS ORDWAY, Dean, Albany Medical College: We should recognize that, just as there are two general types of colleges of arts and science, there may also be two types of medical schools. One type might be termed the medical university, and consist of a group of departments or institutes and the more or less special schools of public health, tropical medicine, industrial medicine, etc. In this medical university, the undergraduate departments would be but a small part of its manifold activities. Such medical universities should be particularly important, and are very necessary for the training of real specialists in medicine and its allied branches. The hospitals associated with such a school would be specialized clinical institutes. In such a large medical university, the relations between departments or institutes would naturally be somewhat formal because of its size and the distribution of its buildings. The second type of medical school should also be the medical department of a university, for only university relationship can give the educational requirements and stabilizing influence necessary. This form of school might be termed the hospital medical school. It should be a school with small classes (from twenty to thirty students in each), housed in a large general hospital. It would have the advantage of intimate relation between student and teacher and, the departments being essentially under one roof, should facilitate interdepartmental cooperation, not only between the clinical branches but also between the clinical and laboratory departments. The teachers of the specialties should confine their work almost entirely as consultants and also to emphasize and correlate their specialty. Elective courses and special problem assignments should be arranged. Representatives of the departments, preferably the heads, should have definite office or consultation hours. The advantages of cooperation are immediately apparent in the better diagnosis and treatment of the patient, and such interchange of criticism and knowledge is stimulating and helpful in keeping the various departments in touch with advancing knowledge. It tends also to have a stabilizing influence, for it prevents isolation and the tendency to the development of special fads. It facilitates our search for the truth.

## DISCUSSION

DR. G. CANBY ROBINSON, Vanderbilt University: The cooperation of the various departments of the medical school must be one of the advances we must all attempt to accomplish in the future. The distinction between what the author calls a medical university and a hospital medical school is a very good one. The ideal of bringing the school as a whole into a unified one is an ideal that we must all strive for.

DR. A. C. ABBOTT, University of Pennsylvania: We are now ready for some one to wipe the slate clean, as it were, and start a more logical medical curriculum, so that students will have more time to think and to work independently, and not try to cover the whole field of medicine.

DR. HUGH CABOT, University of Michigan: We are making a plea for getting away from the water-tight compartment system. If each one is teaching his subject every day, without any relation to anything else, it is in a sense a return to the conditions that existed before the concentration of the fundamental subjects. That this concentration was a great step forward, I do not believe any one doubts. I do not believe medical education would be where it is today if that concentration had not been made. I am satisfied it has served the greatest usefulness, and we must spend much time in bringing together again those things which we somewhat violently separated.

DR. E. P. LYON, University of Minnesota: The physical contiguity of the plan is a big factor, and very much can be gained if the preclinical teachers and the clinical teachers can come together frequently. Mr. Pritchett has not offered a solution of the problem. As a laboratory man I shall cooperate in every effort to get a curriculum that works up from an objective point, and particularly one that tends to make the student think—give the student independence.

DR. J. PARSONS SCHAEFFER, Jefferson Medical College: Something should be done to bring freshmen in contact with patients which will help teach anatomy. If a certain amount of anatomy and physiology could be taught in the fourth year, it would be a great help, and if a correlation course could be arranged whereby the student can study patients and think in terms of anatomy, biology, chemistry and physics, internal medicine and surgery, it would be a great advance for the whole fabric of present day medicine.

DR. RAY LYMAN WILBUR, Stanford University: There are knotty places in the medical curriculum that should be blown up. While I believe in a slow process, we have to go faster to get results. We know what ought to be done and should strive toward that end. We have to deal with this problem differently in different institutions. We have varying personalities to deal with; but, when certain fundamentals are agreed on, we should go to work and do the best we can with them.

## Shall a Fifth or Intern Year Be Required for the M.D. Degree and for Admission to the Licensing Examination?

DR. WILLIAM DICK CUTTER, Secretary, State Board of Medical Examiners of New York: Shall the medical course be extended to five years? The two years' premedical work represents part of the training of the student for his profession; hence the course is really one of six years, and if we add another year it would be seven years. Is it necessary to add another year to the length of the period which is required for the training of men before entering on their life work? The time we now have at our disposal (six years) is not fully utilized; hence there is not any necessity for extending the course. Our department has compiled statistics showing that the length of the teaching period diminishes progressively from the elementary schools up to the colleges and universities. Is there any reason why, if a child of 8 can study for forty-two weeks, a young man of 21 cannot study for thirty-four weeks? If we take out all time given to vacations, holidays, Sundays and half a day on Saturday, we can lengthen the period of instruction, and that we should do before we undertake to add another year to the course. By increasing the amount of study in the premedical year and increasing the length of the college year in a professional school, eight weeks' more time can be secured without the



addition of another eight months according to our present schedule. The other question is whether or not an internship in a hospital should be made a part of the legal requirement for admission to the licensing examination or be required as a prerequisite by the university for its degree. If a medical school is so located that it has a hospital under its control of sufficient size and capacity to provide internships for all its students, they might carry on practical work under the direct supervision of the members of the faculty of the medical school or university, and there would be very little objection to such a procedure; but I know of no medical school so located that it can give to all its students internships in its own hospital. The result is that those schools which have adopted this plan are those states which send students into hospitals scattered all over the country where they serve one year or more as interns. During that time, they are a part of the machinery of the hospital. Their duties are largely routine. Instruction is secondary, and, in many such hospitals, facilities for instruction are inadequate. The state of New York will not require the lengthening of the present medical course from six years to seven years until it is shown that the time already available has been fully utilized. Again, New York will not require the placing of students in all sorts of hospitals until the medical schools have found some way to give adequate training under their own supervision and control.

## DISCUSSION

DR. ARTHUR T. McCORMACK, State Board of Health of Kentucky: Regardless of any campaign on the part of state boards, many more men will become interns in the future than in the past because the character of the training is more basic, and the art of medicine makes it necessary for students to go into hospitals, and a man, after he has been educated in our modern institutions, realizes that he must learn a good deal of the art of medicine after he has finished his course. In order to become a successful practitioner, he must associate himself with the artisans in medicine. For that reason, while some of the teaching in a hospital cannot be quite as effective, I believe that his contact with his fellows practicing the art of medicine is a very important thing to him.

DR. JOHN S. RODMAN, National Board of Medical Examiners: The National Board of Medical Examiners started seven years ago assuming that a hospital year was an essential part of the training of the medical student, and I think our experience up to this time has led us to feel that we shall continue that practice.

DR. C. A. HAMMAN, Western Reserve University: The hospital year is necessary, but hospitals should be suitable for intern instruction. I am heartily in favor of an intern year. If the rest of the course can be shortened, it should be done. Time should be utilized to better advantage. It may be said that interns are not under the supervision of competent teachers at all times. That is true in many cases, but they are given an opportunity to learn, and that is of great value.

**The Place of Anatomy in the Medical Curriculum**

DR. WILLIAM KEILLER, Acting Dean, University of Texas Department of Medicine: To fix anatomy in the student's mind, he must grow up in an anatomic atmosphere. His anatomic pictures must be impressed on his brain again and again till they have some permanence. To attain this end, I would distribute his ordinary dissection into two hour periods throughout his freshman and sophomore years. I would revivify his freshman-sophomore impressions by a laboratory course of applied anatomy in his junior year, when he is beginning to be appreciative of the clinical side of things. Applied anatomy is in most schools an elective lecture course. As a lecture course, it is very dry at best. As a laboratory course, applied anatomy is intensely interesting, and affords a great opportunity for manual training and for impressing the student with the appeal of accurate anatomy to clinical problems. Twenty years ago, the main study of nervous diseases was symptomatic only; today, nine tenths of ordinary nervous diseases are most interesting problems in applied anatomy and physiology.

## DISCUSSION

DR. H. VON W. SCHULTE, Creighton Medical College: I do not feel like asking for more time in teaching anatomy, as the present curriculum will not warrant it. Anatomy might be carried over into the clinical field by clinicians who know anatomy. Then 90 per cent. of the difficulty of teaching anatomy would disappear. Students should be taught to apply their anatomy in clinical work.

DR. W. F. R. PHILLIPS, University of South Carolina: A fault I have observed is not in the anatomic department; it is the fact that the clinician and the surgeon do not use their knowledge of anatomy. What we need are men who are good anatomists, who keep up with anatomy, and who think in terms of anatomy when they teach other branches. If they will do that, there will be no need of asking for more time in which to teach anatomy.

DR. ALEXANDER S. BEGG, Boston University: We are getting at the problem in a different way. We have a rule that every young surgeon on our hospital staff must serve two years in the dissecting room. They are very keen to do it. We have more applications for positions than we have positions to fill. It is a question of cooperation between the departments. I attend all staff meetings, and make anatomic demonstrations as far as the clinicians will allow me.

DR. C. R. BARDEEN, University of Wisconsin: A student can learn anatomy if he is skilful with his hands and understands the necessity of making clean dissections. Heretofore, it was a mistaken idea in teaching anatomy to students that it meant memorizing words, whereas the most important thing in anatomy is to teach students to think in terms of structure, and one of the best ways to do that is by the kind of training referred to by Dr. Keiller, whereby the student is encouraged to visualize the thoracic and abdominal viscera, making drawings of them and comparing them with what he sees when the abdominal wall is opened, and so on.

DR. THOMAS ORDWAY, Albany Medical College: More coordination between the work of the anatomist and that of the pathologist could very well be undertaken. At necropsies there is no reason why the anatomist and pathologist with members of the class should not be present. In our experience this has proved valuable to the anatomist.

DR. G. CARL HUBER, University of Michigan: The modern anatomist thinks in terms of microscopic anatomy, in terms of embryologic and functional anatomy, in terms of nervous anatomy, as well as gross anatomy. Twenty-five years ago we did practically no work in histology, no work in embryology, and very little work in neurology. Fundamental work in anatomy should be taught by men who are interested in the work.

DR. J. PARSONS SCHAEFFER, Jefferson Medical College: Embryology should be taught in the first year, if physiology is taught early in the second year. It would be much better if we could correlate structure and function. When the student has reached clinical work, he sees the importance of that correlation. A third year course in practical anatomy is a very good thing. I would urge that anatomy be taught not only in the first year but also in all years, to the clinicians.

**The Moral Qualifications of the Medical Student**

DR. CHARLES P. EMERSON, Indiana University: The real product of the medical school is the general practitioner. He is and must be the corner stone of the medical profession. Just as soon as specialists individually, or as officers of a national society, offer their services direct to the public, and just as soon as the public learns to appeal to the specialist directly for help, thus ignoring the general practitioner, the medical situation becomes unfortunate. We of the schools pay too much attention to the specialists. The family doctor—that is our job. We should do everything in our power to qualify him to win the confidence of the public and not feel that every public health official, specialist and public health society is his rival and enemy, and that his professional salvation will depend on his ability to escape from general practice into one of the specialties. The important thing needed now is to teach the medical student not alone the medicine and surgery of the twentieth century but also the



accompanying responsibilities. The weakness of our graduates of today is that they have the professional power of the twentieth century but the more convenient ethics of the mid-nineteenth, and the result is disastrous. We should early convince our students of the sacrificial character of their calling. We should encourage the development of strong Y. M. C. A.'s and similar societies in the school. The faculty should attend these meetings and show a strong religious background in all of our own practice.

#### The Special Medical Student

DR. JOHN T. McCLINTOCK, University of Iowa: The term "special student" directs attention to the fact that this is an exception to the ordinary procedure in the registration of the student. One group of such students has wandered from one institution to another, but finally finding a berth somewhere under the head of "special" students, with the proviso that the conditions of entrance requirement shall be removed before they enter on the second year, and sometimes that five years shall be spent in the school instead of four. Is not that a direct evasion of the rule not permitting any entrance condition? Does the proviso of the additional fifth year make up for the entrance condition? A second group comes in a different way. There has been created a demand for bacteriologists, serologists, physiologic chemists, and so on. These persons find it to their advantage to take some medical work in the preparation for their special field of activity. They apply for admission to a college of medicine to take some of these courses. In medical colleges associated closely with general universities, these persons can be admitted by having registered in some college in the university; and, by making preparations with the department of clinical medicine, they can be handled satisfactorily. Other medical colleges not associated directly with a university admit these applicants as special students. A real question arises later. That student, after completing certain subjects of the medical course, wishes to go on and take the M.D. degree. What credit is to be allowed him for the work which he took in the college of medicine when he seeks registration as a regular medical student? Supposing we grant full credit to him, what is the difficulty? We open the door to the first class of special students. They now apply for admission as regular students, give an explanation where they wish to go, and prepare themselves for some other special line of work connected with medicine. They are admitted to some of the courses. Meanwhile, they have taken up other work and removed their entrance conditions. Now they apply for the full course. That presents a real difficulty, and the solution of the problem must be one which will be just to the college, permitting the college the greatest leeway possible to meet the obligation of all students. It must be one which is just to the individual student and not unjust to the regular student, and it must be one which will not compromise the individual college with any of the other members who have signed up for the same rules and regulations.

#### The Dean's Problems

DR. IRVING S. CUTTER, University of Nebraska: The personality of the student ought to be known by the dean. I have for many years, at a certain hour of each day, had as many students as possible come to my office to talk over their problems, their successes, their failures, their financial struggles, their social problems—in fact, anything they chose to talk about. This is not done individually. Occasionally a student may want to see me alone regarding a matter of a personal nature, but, as a rule, they are glad to talk before one another because their problems have an interrelation, and they learn from one another as they talk things over. In furthering efficient work of administration among the student body, we are neglecting to use some of the means immediately at hand. One of these is the college fraternity. I ask some one of the faculty, not a member of a given fraternity, to visit that fraternity once a month to talk over with these fellows their problems, and these groups are now very keen for that monthly visit of the faculty member. To stimulate scholarship among students, the university record or

register publishes annually a statement of the scholarship of each medical fraternity as well as each fraternity group in the university hall, and these fraternities vie with one another as to who shall win honors year after year. Another factor is the graduate student. We have for several years encouraged students at the end of the sophomore year to drop out of the medical course and become graduate students in one of the departments. These graduate students meet with the departments when they have their meetings to talk over their problems. These men live in fraternity houses and they carry back not only the point of view of the students but also the fraternity spirit and the point of view of the staff. This does a lot of good in student examinations, which is one of the big problems of the dean and in the administration of the school. We have a small dormitory, which accommodates fifty or sixty men. There is at present great rivalry in our students' scholarships between dormitory groups and groups living in the several fraternity houses. No matter how efficient the hospital superintendent may be, the university or teaching hospital is one of the dean's important problems.

## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Anatomy, Philadelphia

January, 1923, 31, No. 3

- \*Absorption of Cerebrospinal Fluid Into Venous System. L. H. Weed, Baltimore.—p. 191.
- Interstitial Cells of Gonads of Cattle with Especial Reference to Their Embryonic Development and Significance. K. F. Bascom, Chicago.—p. 223.
- \*Human Types and Growth Reactions. C. R. Stockard, New York.—p. 261.
- Pancreatic Ducts and Pancreatic Bladders. J. L. Bremer, Boston.—p. 289.
- Mast Leukocytes in Adult Guinea-Pig Under Experimental Conditions. A. R. Ringoen, Minneapolis.—p. 319.

**Absorption of Cerebrospinal Fluid Into Venous System.**—The pathway of absorption of the cerebrospinal fluid into the blood stream under normal conditions is by way of arachnoid villi into the great dural venous sinuses. Under the influence of an increased salt content of the blood, produced by the intravenous injection of strongly hypertonic solutions, Weed asserts that absorption takes place also by way of the perivascular channels and through the ependymal lining of the cerebral ventricles into the capillary bed of the nervous system. In the normal process, filtration may be the physical factor of greatest importance, but after the intravenous injection of strongly hypertonic solutions, osmosis and diffusion apparently play the only active rôles.

**Human Types and Growth Reactions.**—This paper is presented by Stockard as an introduction to a series of studies now under way which bear on the origin and development of certain well marked types found among the mammals. It is stated that the growth rate of the individual depends on both internal and external factors—hereditary composition and functional activities—the latter being modified largely by surrounding conditions. The two groups into which almost all ordinary persons fall more or less exactly may be termed the "linear" type and the "lateral" type. The linear type is the faster growing, high metabolizing, thin, but not necessarily tall, group, while the lateral type is slower in maturing and is stocky and rounder in form.

#### American Journal of Ophthalmology, Chicago

February, 1923, 6, No. 2

- Pulsating Exophthalmos. L. B. Whittham, Baltimore.—p. 81.
- Strabismus. E. Landolt, Paris.—p. 93.
- Considerations of Ocular Vergence. G. F. Alexander, Scarborough, England.—p. 102.
- Graduated Tenotomy of Inferior Oblique Muscle in Correcting Certain Forms of Squint. J. L. McCool, Portland, Oregon.—p. 107.
- Heterophoria. L. W. Fox, Philadelphia.—p. 110.
- Transfer of Function of Ocular Muscles. E. Jackson, Denver, Colo.—p. 117.



- Vision After Cataract Extraction. F. Nicolas, Manila.—p. 123.  
Corrected Report of Colonel Smith's Cataract Operations. W. A. Fisher, Chicago.—p. 124.  
One Hundred Consecutive Cataract Operations. E. A. Knorr, Baltimore.—p. 126.  
Final Result of Carcinoma of Orbit Probably Originating in Lacrimal Gland. C. N. Howard, Warsaw, Indiana.—p. 128.  
Gunshot Wound of Orbit, Operation, Recovery. J. A. Morgan, Honolulu, T. H.—p. 129.

### American Journal of Public Health, Detroit

February, 1923, 13, No. 2

- Prevention of Simple Goiter. O. P. Kimball, Cleveland.—p. 81.  
Maternal Mortality and Mortality in First Month of Life in Relation to Attendant at Birth. J. Levy.—p. 88.  
Influence of Epidemiology on Present-Day Methods of Control of Communicable Disease. H. Emerson, New York.—p. 100.  
Lima, Ohio, Sewage Disposal Problem. G. W. Fuller, New York.—p. 103.  
Heat Resistance of Bacillus Botulinus Spores. J. R. Esty, Detroit.—p. 108.  
Law Enforcement in Control of Tuberculosis. E. A. Jonas, Chicago.—p. 113.

### American Journal of Syphilis, St. Louis

January, 1923, 7, No. 1

- \*Effects of Mercury Inhalation on Animal Organism. J. Gutman, Brooklyn, N. Y.—p. 1.  
Syphilitic Genital Chancre. M. B. Parounagian and H. Goodman, New York.—p. 43.  
Venereal Disease Clinic. Toledo Municipal Hospital. E. W. Huffer, Toledo.—p. 56.  
\*Syphilis of Suprarenals. W. H. Deaderick, Hot Springs National Park, Ark.—p. 72.  
Syphilis. V. H. H. Hazen, Washington, D. C.—p. 83.  
Argyria and Its Relation to Silver Therapy. I. Argyria—Historical. II. Retention and Elimination of Silver with Special Reference to Silver Arphenamin and Silver Therapy. (To be continued).—C. N. Myers, Brooklyn.—p. 125.  
\*Mercury Inhalation Therapy of Syphilis. II. Historical Review. J. Gutman, Brooklyn.—p. 145.  
\*Case of Syphilitic Reinfection. H. Schoenrich, Baltimore.—p. 153.  
\*Wassermann Reaction in Pregnancy. W. A. Hinton, Boston.—p. 155.  
Reactions Following Arsenobenzene Administration and Their Treatment. A. R. Fraser and A. G. B. Duncam, Aberdeen.—p. 160.

**Effects of Mercury Inhalation on Animal Organism.**—Experiments are presented by Gutman in which the symptomatology and the gross and microscopic pathologic changes in the organs of animals (guinea-pigs and rabbits) subjected to inhalations of mercurial vapors are described. A comparison is made between the effects of mercury when it is administered by inhalation and the effects of oral, hypodermic and inunction methods as described by Kolmer and Lucke. It was found that under like circumstances, the pathologic changes following the administration of mercury, in whatever form and by whatever route, are approximately identical. It was found that the toxic changes following mercurial inhalations consist of marked congestion of many organs, severe destructive processes affecting the intestinal tract and kidneys and lesser injuries to the liver, spleen, suprarenals and nervous system. It is also stated that the effect of mercurial vapors upon the respiratory system depends on their concentration and the manner of their administration. Strenuous inhalations of concentrated vapors induce serious pathologic lesions. Diluted vapors, smaller and less frequent dosage are not productive of harmful effects in the lungs.

**Syphilis of Suprarenals.**—A case of probable Addison's disease of syphilitic origin is reported by Deaderick. The patient was a woman, aged 40, who had married for the second time eight years previously. The husband admitted syphilitic infection twenty-eight years before with insufficient treatment. She had three miscarriages but no full term labors. Nine years ago she had pains in the liver region followed by marked jaundice, which was very persistent. For the past seven or eight months she has had vomiting attacks preceded by nausea. At first these attacks came on from one to three times a week, then they became more frequent until they occurred after almost every meal. She has lost 15 pounds in weight during this period. For eight months she has been very weak. During some of the "weak spells" she is able to sit up, but frequently she is compelled to lie down, being too weak to sit. She has had dyspnea on exertion for several years. Seven months ago she consulted two throat specialists on account of sore throat and enlargement of the cervical glands. Both diagnosed syphilis and one prescribed antisyphilitic treatment by mouth which she took for two

and one-half months causing resolution of the throat and gland trouble. About two months ago she noticed a cloudiness of the right cornea. Her present complaint is pigmentation of the skin, pain in the right hypochondrium and precordium, backache, weakness, vomiting and constipation. The treatment consisted of daily, intramuscular injections of mercury benzoate, up to one-third grain, and of the oral administration of suprarenal gland. After three weeks' treatment all the systemic symptoms were improved but no change could be detected in the cutaneous pigmentation. A month after discharge she reported that the discoloration was fading.

**Mercury Inhalation Therapy of Syphilis.**—According to the historical evidence presented by Gutman the preponderance of evidence is in favor of claims for the beneficent properties of inhaled mercury vapor. While there is much in the past history of mercury vapor therapy that is unfavorable, he says there is much more which commends the method and places it among other well recognized and lauded therapeutic procedures in the history of medicine.

**Syphilitic Reinfection.**—Schoenrich reports the case of a man, aged 26, who developed, and presumably was completely cured of, two separate and distinct syphilitic infections within a period of less than ten months; furthermore, the clinical and serologic response was unusually favorable under a rather mild antisyphilitic medication. The duration of the first infection was approximately three months; thence an interval of less than two months was followed by a second attack of probably one month's duration.

**Wassermann Reaction in Pregnancy.**—A study of the Wassermann reaction was made by Hinton on the blood of 10,427 pregnant women. The method employed utilized two cholesterinized antigens prepared from a plain alcoholic extract of human heart muscle and a more sensitive antigen, also cholesterinized, made from guinea-pig hearts. Sheep's cells were used as indicators. In 4.18 per cent. of these cases a positive reaction, and in 38.5 per cent. a doubtful reaction was obtained. In Hinton's experience, properly standardized cholesterinized antigens have yielded a negligible number of false positive reactions in child bearing women.

### Annals of Otology, Rhinology and Laryngology, St. Louis

December, 1922, 31, No. 4

- Mishaps in Puncture and Irrigation of Maxillary Sinus. W. E. Grove, Milwaukee.—p. 913.  
Surgery of Ethmoid Labyrinth. A. H. Andrews, Chicago.—p. 947.  
Pathologico-Anatomic Difference Between Fetid and Nonfetid Ozena. A. Rundstrom, Chicago.—p. 950.  
\*Abscess of Lung and Method of Prevention in Nasopharyngeal Surgery. C. W. Richardson, Washington, D. C.—p. 960.  
Hyperplasia and Infection in Postethmoid-Sphenoid Ocular Complications. G. F. Harkness, Davenport, Iowa.—p. 964.  
Some Phases of Esophageal Stenosis. R. McKinney, Memphis.—p. 977.  
\*Brain Abscess of Rather Long Duration. C. J. Adams, Kokomo, Ind.—p. 984.  
Septic Type of Temperature not Referable to Ear in Cases of Acute Suppurative Otitis Media. H. I. Lillie, Rochester, Minn.—p. 990.  
Extradural Abscess Complicating Frontal Sinusitis: Report of Case. R. H. Skillern, Philadelphia.—p. 997.  
Method of Demonstrating Surgical Anatomy of Mastoid by Models. J. W. Downey, Jr., Baltimore.—p. 1009.  
\*Technic of Thyrotomy. A. E. Hertzler, Halstead, Kan.—p. 1013.  
Subcutaneous Emphysema of Neck and Chest Following Tonsillectomy in an Epileptic. Recovery. S. Rosenheim, Baltimore.—p. 1027.  
\*Case Showing Unusually Early Metastasis in Carcinoma of Vocal Cords. A. E. Hertzler, Halstead, Kan.—p. 1032.  
Fatal Case of Vincent's Angina. D. N. Husik, Philadelphia.—p. 1039.  
Roentgen-Ray Treatment of Tonsillar and Lymphoid Tissue. J. H. Triender, Fort Sam Houston, Texas.—p. 1044.  
Formation and Function of Accessory Nasal Sinuses and Mastoid Cells. A. W. Proetz, St. Louis.—p. 1083.  
Operation of Total Laryngectomy for Cure of Intrinsic Cancer of Larynx. J. E. McKenty, New York.—p. 1101.  
\*Abscesses of Larynx and Trachea Following Influenza. C. F. Theisen, Albany.—p. 1118.  
Some Points in Comparative Anatomy of Nose and Accessory Sinuses Which Account for Variations in These Structures in Man. J. M. Ingersoll, Cleveland.—p. 1123.  
Intranasal Injection of Alcohol in Treatment of Hyperesthetic Rhinitis and Some of Nasal Neuroses. O. J. Stein, Chicago.—p. 1129.  
Barnes' Drum Membrane Knife and Spatula. G. E. Barnes, Herkimer, N. Y.—p. 1137.

**Prevention of Abscess of Lung in Nasopharyngeal Surgery.**—The technic which Richardson has adopted and which seems to have eliminated this type of surgical risk in faucial surgery



consists in careful preoperative preparation of the patient; the presence of a skilled anesthetist; placing the patient in the moderate Trendelberg position during the operation; removing pus, cheesy material or liquid exudate from the tonsils by suction; gentle manipulation in applying compression and swabbing, and, finally, returning the patient to bed resting on the left side, and placing him in bed face downward until he has thoroughly recovered from the anesthetic.

**Technic of Thyrotomy.**—For the removal of intrinsic tumors of the larynx Hertzler advocates the external operation, asserting that it is technically safe and simple; complications following the operation are negligible. He describes his technic.

**Unusually Early Metastasis in Carcinoma of Vocal Cords.**—Hertzler reports a case of malignancy of the vocal cord marked by the discovery of a metastasis before the intralaryngeal lesion was discovered. He attributes the failure to recognize the importance of a metastasis in the particular gland in question to ignorance of the lymphatic drainage of the larynx. Knowledge on this point, Hertzler says, should have led to the conclusion, when the malignancy was discovered in the lymph gland in that particular location, that there must be a hidden malignancy somewhere within the larynx.

**Abscesses of Larynx and Trachea Following Influenza.**—Six cases of abscess of the larynx and trachea occurring during epidemics of grip and influenza are reported by Theisen. The bacteriology of five of the cases was worked out. In none of the cases was the influenza bacillus found. In three cases, cultures showed mixed staphylococcus and streptococcus infection, and in the other two streptococcus. Theisen believes that the laryngeal and tracheal abscesses start as localized inflammatory processes, and then, owing to the patient's run down condition, with the addition of pyogenic organisms, the abscess gradually develops.

### Archives of Occupational Therapy, Baltimore

February, 1923, 2, No. 1

- Music as Means of Mental Discipline. W. Van De Wall, New York.—p. 1.  
Physical Exercise and Dancing. E. M. Huseby, Towson, Md.—p. 27.  
Games and Dramatics. G. E. Harrington, White Plains, N. Y.—p. 31.  
Toy Making as Therapeutic Occupation: Con. W. R. Dunton, Jr., Towson, Md.—p. 39.  
In Defense of Toys. H. J. Hall, Marblehead, Mass.—p. 43.  
Rejoinder. W. R. Dunton, Jr., Towson, Md.—p. 47.

### Arkansas Medical Society Journal, Little Rock

January, 1923, 19, No. 8

- Important Points in Bone Surgery. A. Watkins, Little Rock.—p. 145.  
Need of Sanatorium Care for All Tuberculous Persons. J. Stewart, Booneville.—p. 152.  
Drug Addiction. T. B. Bradford, Brinkley.—p. 158.

February, 1923, 19, No. 9

- Modern Concepts of Tuberculosis. G. B. Webb, Colorado Springs, Colo.—p. 169.  
Report of Case of Congenital Hypertrophic Pyloric Stenosis. W. R. Brooksher, Fort Smith.—p. 172.  
Radiation in Treatment of Menorrhagia. D. A. Rhinehart, Little Rock.—p. 175.  
Excision of Sensory Root or Trifacial Nerve. J. H. Scroggin, Little Rock.—p. 176.

### Boston Medical and Surgical Journal

Feb. 15, 1923, 188, No. 7

- \*Diagnosis of Cardiovascular Syphilis. W. D. Reid, Boston.—p. 189.  
Viewpoint of a Physician. J. H. Nichols, Tewksbury, Mass.—p. 193.  
Physiology of "Autosuggestion." D. Gregg, Wellesley, Mass.—p. 195.  
Value of Medical Society to Community and Its Own Members. D. R. Lyman, Wallingford, Conn.—p. 196.

**Diagnosis of Cardiovascular Syphilis.**—The first essential in the diagnosis of cardiovascular syphilis, in Reid's opinion, is that it be given a place among the various diagnoses to be considered in any patient with suspected heart disease. Every case infected with syphilis is a case of potential heart disease, i. e., cardiovascular syphilis, and syphilis should be considered in every case of heart disease of obscure origin, even when the Wassermann test is negative. A positive Wassermann reaction is of value in supporting the diagnosis, but a negative report is often received and should not be allowed to shake the diagnosis of cardiovascular syphilis if

sufficient other data point to the presence of that disease. The general examination should include a search for evidence of syphilis elsewhere in the body. Cardiovascular syphilis may be symptomless unless complications have ensued. The therapeutic test for syphilis is of distinct value in doubtful cases, and resort to this should be made more frequently.

Feb. 22, 1923, 188, No. 8

- \*Progress and Results in Cancer Control. F. L. Hoffman, Sonoma, Mich.—p. 221.  
Cancer as an Outpatient Problem. H. F. Day, Boston.—p. 225.  
Cancer as a Preventable Disease. J. C. Bloodgood, Baltimore.—p. 226.  
Wirsung to Riolan on Pancreatic Duct, and Riolan's Reply. J. Douley, Providence, R. I.—p. 229.

**Results in Cancer Control.**—Hoffman closes his discussion of this subject as follows: "Hence the problem of cancer increase and cancer control is a world wide phenomenon, calling upon the medical profession, in particular, to exert itself still more strenuously than as heretofore was the case, to bring about the control of a menace, which strikes sooner or later into every home in the land. If the mortality of tuberculosis in twenty years has been reduced 50 per cent., it should not be impossible, by deliberate means, to reduce the mortality from cancer 25 per cent. during the next twenty years, equivalent to an annual reduction in cancer deaths of possibly 25,000 to 30,000. The mortality can be reduced and it must be reduced, but a reduction can only be brought about through the wholehearted and thoroughly perfected cooperation of the medical profession, the general public and the health authorities of the state."

### Colorado Medicine, Denver

February, 1923, 20, No. 2

- Fractures Involving Joints: Question of Movement. G. W. Miel, Denver.—p. 34.  
Medicine and Publicity. P. Hillkowitz, Denver.—p. 43.  
Mortality of Jews in Denver. Study in Group Vital Statistics. C. D. Spivak, Denver.—p. 46.

### Florida Medical Association Journal, St. Augustine and Jacksonville

December, 1922, 9, No. 6

- Preliminary Suggestions in Roentgen-Ray and Laboratory Therapy. R. R. Kime, Orlando, Fla.—p. 97.  
Medical Legislation. J. D. Raborn, Plant City, Fla.—p. 100.  
Molluscum Contagiosum with Multiple Lesions on Body and Extremities. J. L. K. Smith, Jacksonville, Fla.—p. 104.  
Tests for Deafness. F. J. Walter.—p. 105.

### Iowa State Medical Society Journal, Des Moines

February, 1923, 13, No. 2

- Cases of Foreign Body in Eyeball. W. B. Small, Waterloo.—p. 41.  
Recurrent Hemorrhage into Vitreous: Report of Case. M. J. Joynt, LeMars.—p. 45.  
Anterior Poliomyelitis: Review of Thirty Sporadic Cases. C. G. Field, Fort Dodge.—p. 48.  
Diagnosis of Vascular-Renal Disease. N. B. Foster, New York.—p. 52.  
Intestinal Obstruction. M. M. Ghent, St. Paul.—p. 56.

### Journal of Bacteriology, Baltimore

January, 1923, 8, No. 1

- Micromanipulator for Isolation of Bacteria and Dissection of Cells. R. Chambers, New York.—p. 1.  
Certain Phases of Nitrogenous Metabolism in Bacterial Cultures. G. G. De Bord, Boston.—p. 7.  
Device for Tubing Cooked Meat Medium. W. L. Holman, Yosemite Valley, Calif.—p. 47.  
Bacteriophage Phenomena. A. G. Kuttner, New York.—p. 49.

### Journal of Industrial Hygiene, Boston

February, 1923, 4, No. 10

- Industrial Dermatoses. H. N. Cole and J. R. Driver, Cleveland.—p. 425.  
Two Fatalities Due to Inhaling Phosgene. S. Delepine.—p. 433.  
Reliability of Comf-Thermometer (Fresh-Air Gage) as Indicator for Cooling Effect of Air. H. I. Eadie, D. H. Ash and T. C. Angus, Cleveland.—p. 441.  
\*Pharmacology of Some Phenylenediamines (continued). P. J. Hanzlik, Cleveland.—p. 448.

**Pharmacology of Phenylenediamines.**—The results of Hanzlik's study indicate that the phenylenediamines are definitely toxic compounds. Dimethyl-para-phenylenediamine was found to be the most toxic, and meta-phenylenediamine probably the least toxic, although in some animals it appeared to be about



as toxic as para-phenylenediamine. Diethyl-para-phenylene-diamine is about as toxic as the para compound. A summary of the principal actions of the phenylenediamines studied is presented. They stimulate the circulation, respiration, and smooth muscle of excised organs, and cause bronchoconstriction. Asthma and local inflammations of the respiratory tract among workers in the fur dyeing industry are commonly reported. Therapeutically, the phenylenediamines are of no significance. A scientific basis for the alleged antidiarrheal and antidyenteric properties of meta-phenylenediamine (lentin) is lacking, and its use is unwarranted. Experimental evidence indicates that it would increase persistalsis if anything, and that it might be harmful otherwise (by the production of effusions). The results of this investigation indicate that workmen should be protected against the phenylenediamines used in various industries, and that the use of para-phenylenediamine in hair dyes and cosmetics should be prohibited.

### Journal of Infectious Diseases, Chicago

February, 1923, 32, No. 2

- Comparative Study of Precipitinogen and Precipitin Curves, with Especial Reference to Later History of Precipitin Curve. G. F. Forster, Madison, Wis.—p. 105.
- Influence of Saturation on Properties of Antigen in Wassermann Test. C. L. A. Schmidt and S. E. Coffey, Berkeley, Calif.—p. 119.
- Study of an Organism Resembling *Bacterium Pullorum* from Unabsorbed Yolk of Chicks "Dead in Shell." F. B. Beaudette, L. D. Bushnell and L. F. Payne, Manhattan.—p. 124.
- \*Relationship of Orange and White Pyogenic Staphylococci. I. J. Kligler and E. Krause, Jerusalem, Palestine.—p. 133.
- Effect of Thyroidectomy, Controlled by Respiratory Exchange Measurements, on Antibody Formation in Rabbits. N. M. Take, New York.—p. 138.
- \*Microscopic Demonstration of Bacteria in Lesions of Epidemic (Lethargic) Encephalitis. E. C. Rosenow and G. H. Jackson, Jr., Rochester, Minn.—p. 144.
- Food Accessory Factors (Vitamins) in Bacterial Growth. R. C. Robertson and D. J. Davis, Chicago.—p. 153.
- \*Studies of Fusiform Bacilli and Spirochetes. II. Their Occurrence in Normal Preputial Secretions and in Erosive and Gangrenous Balanitis. J. Brams, I. Pilot and D. J. Davis, Chicago.—p. 159.
- Specific Precipitin Reaction of Semen. L. Hektoen and L. S. Manly, Chicago.—p. 167.
- \*Incidence of Hemolytic Streptococci in Normal Preputial Secretions of Men. I. Pilot and J. Brams, Chicago.—p. 172.

### Relationship of *Staphylococcus Pyogenes Aureus* and *Albus*.

—A systematic study was made by Kligler and Krause of the immunologic types of orange and white staphylococci for the purpose of preparing a proper polyvalent stock vaccine. Two main types of *Staphylococcus aureus* and two strains of *Staphylococcus albus* were selected. The vaccines prepared with these strains were as effective therapeutically as were autogenous vaccines.

**Bacteria in Lesions of Lethargic Encephalitis.**—The presence of organisms in or adjacent to the lesions in a series of cases of encephalitis which occurred in widely separated communities, their absence in tissues free from changes, and in control sections from persons that died from other diseases, Rosenow and Jackson believe indicate causal relationship. The shape and grouping of, and the gradation between, large and small organisms, and the breaking of large forms into small bodies, indicate that the various forms are modifications of the same micro-organism.

**Bacteria in Preputial Secretions.**—Under normal conditions fusiform bacilli and spirochetes were found by Brams, Pilot and Davis in the preputial secretions of fifty-one of 100 men examined. As about the teeth and tonsils, these organisms exist as saprophytes in the preputial sac. Associated with these bacteria were always pyogenic organisms, including staphylococci, *Streptococcus hemolyticus*, *S. viridans* and colon bacilli. A comparative study of the flora of the normal preputial secretions and the secretions from cases of erosive and gangrenous balanitis revealed a striking similarity in smears and cultures. Of special interest is the fact that, with fusiform bacilli and spirochetes normally present in the preputial sac, balanitis is not entirely dependent on the introduction of these organisms from other sources but may arise locally, particularly in men with phimosis, retention of secretions and lowered general resistance.

**Hemolytic Streptococci in Preputial Secretions.**—Hemolytic streptococci were isolated and identified by Pilot and Brams

in the preputial secretions of nine of 100 normal men. They always occurred in small numbers. These streptococci agree in their morphology, cultural characteristics and fermentation reactions with the *Streptococcus pyogenes*. They appeared to be somewhat less pathogenic than similar streptococci from tonsils and adenoids.

### Kansas Medical Society Journal, Topeka

February, 1923, 23, No. 2

- Upper Femoral Fractures. E. D. Ebright, Wichita.—p. 29.
- Determination of Uric Acid in Blood. M. Dupray, Hutchinson, Kan.—p. 33.
- Prostatic Hypertrophy—Its Treatment and Relief by Perineal Prostatectomy. J. E. Burns, Kansas City, Mo.—p. 38.
- Use of Derivatives of the Tendo Achillis in Wound Infections and in Their Prevention. B. M. Deep.—p. 42.

### Maine Medical Association Journal, Portland

February, 1923, 13, No. 7

- Louis Pasteur. T. J. Burrage.—p. 173.
- Case of Erythrasma. R. B. Josselyn, Portland, Me.—p. 183.

### Michigan State Medical Society Journal, Grand Rapids

February, 1923, 22, No. 246

- Indications for Use of Therapeutic Pneumothorax. H. M. Rich, Detroit.—p. 55.
- Treatment of Mild Diabetes Mellitus. P. L. Marsh, Ann Arbor, Mich.—p. 56.
- Chronic Mastoiditis. R. D. Sleight and W. Haughey, Battle Creek, Mich.—p. 61.
- Indications for Radium Therapy in Ophtho-Oto-Laryngology. R. E. Loucks, Detroit.—p. 63.
- Roentgen-Ray Treatment in Diseases of Ear, Nose and Throat. W. A. Evans, Detroit.—p. 65.
- True Eclampsia and Renal Eclampsia. W. E. Welz, Detroit.—p. 71.
- Acute Complete Inversion of Uterus. L. W. Haynes, Detroit.—p. 75.
- Radium Treatment in Cancer of Cervix. C. D. Brooks, and Wm. R. Clinton, Detroit.—p. 80.
- Carcinoma of Breast, Its Combined Treatment, Surgery, Roentgen-Ray and Radium. W. J. Cassidy, Detroit.—p. 83.

### Military Surgeon, Washington, D. C.

February, 1923, 52, No. 2

- Extracts from History, Medical Department, United States Military Mission, Berlin, Germany, August 10, 1919. A. L. Parsons.—p. 113.
- Medical Officer and Employees' Compensation Act. J. C. Pryor.—p. 131.
- Tests for Cure of Syphilis. G. L. Qualls and A. G. De Quevedo.—p. 140.
- Neurosyphilis. R. Sheehan.—p. 149.
- Possible Fallacy in Calculation of Annual Death Rates. M. W. Hall.—p. 157.
- Medical Contributions of Linnaeus. A. Egdahl.—p. 166.
- Medical Man and Medical Reserve Corps, U. S. Army. N. W. Sharpe.—p. 174.
- \*Treatment of Hookworm Disease by Carbon Tetrachlorid. A. T. Cooper and A. J. Vadala.—p. 187.
- Plea for Closer Relationship Between Pharmacy and Medicine. R. C. Holcomb.—p. 190.
- Results After Orbital and Ocular Battle Injuries. R. A. Fenton.—p. 193.
- Treatment of Chronic Otorrhea. J. D. Whitham.—p. 200.

### Treatment of Hookworm Disease by Carbon Tetrachlorid.

—The result obtained by Cooper and Vadala with only one dose of carbon tetrachlorid in the treatment of hookworm disease has been 100 per cent. cure. The drug was administered in soft gelatin capsules each containing 1 c.c. and was given in the mornings, preferably without breakfast.

### New Orleans Medical and Surgical Journal

February, 1923, 75, No. 8

- What Are Vital Statistics? J. G. Dempsey, New Orleans.—p. 415.
- Duties of Officials Relative to Public Health. M. W. Swords, New Orleans.—p. 421.
- Some Phases of Rural Health. O. Dowling, New Orleans.—p. 423.
- Typhoid from a Public Health Standpoint. J. Callan, New Orleans.—p. 430.
- Treatment of Thyrotoxicosis. T. P. Lloyd, New Orleans.—p. 436.
- Schick Test and Toxin-Antitoxin Immunization in Control of Diphtheria. W. H. Seeman, New Orleans.—p. 443.
- \*Relation of Gallbladder Disease to Diabetes. A. Eustis, New Orleans.—p. 449.

**Relation of Gallbladder Disease to Diabetes.**—Of thirty-six cases of alimentary glycosuria seen by Eustis, fifteen have shown definite gallbladder disease. Six of these patients have definite diabetes today, with hyperglycemia and other cardinal symptoms of the disease. Treatment and diet aimed at sparing the liver has given better results than a low carbohydrate



diet, and some have even become sugar free on a low protein diet. Eustis urges that more systematic examinations of patients with glycosuria should be made, with the object of determining what percentage of cases of glycosuria and true diabetes are associated with gallbladder disease.

### New York Medical Journal and Medical Record

Feb. 21, 1923, 117, No. 4

- Theories and Theorizers Connected with Development of Laws of Heredity. J. A. Buchanan, Rochester, Minn.—p. 193.  
Experimental Study of Immobility of Diaphragm. F. C. Baldberry, Perrysburg, N. Y.—p. 202.  
General Theory of Neuroses. Part I. A. Polon, New York.—p. 206.  
Localized Iris Changes. S. P. Sobel, New York.—p. 212.  
\*Belladonna Poisoning by Topical Application. H. Fried, New York.—p. 212.  
Chronic Ulcerative Colitis and Its Treatment. M. Einhorn, New York.—p. 214.  
Role of Focal Infection in Disease. S. Pern, Melbourne, Victoria.—p. 218.  
Reinfection of Tonsillar Remnants After Incomplete Tonsillectomy. Report of Four Cases. J. A. Glassburg, New York.—p. 221.  
Quackery de Luxe: Form of Medical Charlatanism Known as Orificial or Constructive Surgery. J. F. W. Meagher, Brooklyn.—p. 224.  
Louis Pasteur. L. Gershenfeld, Philadelphia.—p. 231.  
Pasteur's First Patient. M. W. Thewlis, Providence, R. I.—p. 235.

**Case of Belladonna Poisoning by Topical Application.**—In a case of so-called myalgia lumbalis, Fried prescribed as a liniment: tincture of aconite, 2 drams; tincture of belladonna, 4 drams; spirit of chloroform, 4 drams; sufficient soap liniment to make 6 ounces, to be applied by gently massaging or rubbing the muscles of the back. About twenty-four hours later Fried found the patient in bed, restless, giddy, very talkative, complaining constantly of pain in her throat and persistently trying to get out of bed. Her face was flushed, eyes bright, pupils dilated, tongue coated and dry, fauces and uvula reddened. Her chest was covered with a patchy erythematous rash. Pulse and respiration were markedly accelerated. Rectal temperature was 101 F. At times she was delirious. Inquiry brought out the information that the liniment had been continually applied to her back until the entire amount called for in the prescription had been consumed, resulting in belladonna poisoning. Three other cases are recorded in the literature.

### Ohio State Medical Journal, Columbus

February, 1923, 19, No. 2

- Acute Infective Osteomyelitis. C. D. Hoy, Columbus.—p. 77.  
Problem of Radium and Surgery in Treatment of Cancer. A. Strauss, Cleveland.—p. 85.  
Vital Capacity with Respect to Diagnosis and Prognosis. L. A. Levison, Toledo.—p. 89.  
\*Use of Convalescent Serum as Prophylaxis in Measles and Chickenpox. K. D. Blackfan, M. F. Peterson and F. C. Conroy, Cincinnati.—p. 97.  
Malignant Tumors of Sinuses. J. M. Waugh, Cleveland.—p. 100.  
Traumatism of Kidney. T. P. Shupe, Cleveland.—p. 104.  
Modern Methods in Prevention of Diphtheria. F. G. Boudreau, Columbus.—p. 107.  
Blood Transfusion in Obstetrics. W. R. Barney, Cleveland.—p. 111.  
Trachoma. J. W. Wright, Columbus.—p. 114.

**Use of Convalescent Serum as Prophylaxis in Measles and Chickenpox.**—Blackfan, Peterson and Conroy are of the opinion that the serum of patients convalescing from measles or chickenpox does confer an efficient temporary immunity when injected into susceptible individuals within five days after exposure. Even incomplete immunity limits the disease to a mild form and these serums afford a very efficient means of preventing severe epidemics in hospitals and institutions. These serums also afford valuable protection to those children exposed to measles and chickenpox, in whom the natural resistance has been lowered by other existing afflictions, and it is recommended that this protection be afforded all children exposed, not only while convalescing from acute diseases, but also when suffering from nutritional disturbances, tuberculosis and other chronic diseases.

### Pennsylvania Medical Journal, Harrisburg

February, 1923, 26, No. 3

- Present Standard of Obstetric Practice in Rural Pennsylvania. C. G. Brumbaugh, Huntingdon.—p. 283.  
More Important Obstetric Emergencies Met by General Practitioner. G. V. Janvier, Lansdowne.—p. 284.  
Indications for and Technic of Cesarean Section. H. A. Miller, Pittsburgh.—p. 289.

- Case of Epidural Abscess of Spinal Canal. E. M. Green, Easton.—p. 293.  
Faulty Posture as Cause of Obscure Digestive and Nutritional Disorders; Report of Treatment of Fifty Cases by Abdominal Belt. P. Nicholson, Ardmore.—p. 296.  
Spinal Anesthesia. Study of About 15,000 Inductions. W. W. Babcock, Philadelphia.—p. 303.  
Acute Abdominal Conditions in Children from Medical Standpoint. J. P. C. Griffith, Philadelphia.—p. 312.  
Nervous and Mental Symptoms in Case of Pellagra. C. C. Wholey, Pittsburgh.—p. 318.  
Relationship of Appendicitis to Upper Abdominal Disease. J. B. Deaver, Philadelphia.—p. 321.  
Status of Physician in Relation to Compensation Law. M. Behrend, Philadelphia.—p. 324.

### Philippine Journal of Science, Manila

January, 1923, 22, No. 1

- \*Treatment of Amebic Dysentery. A. W. Sellards and L. Leiva.—p. 1.  
\*Effect of Stasis on Development of Amebic Dysentery in Cat. A. W. Sellards and L. Leiva.—p. 39.  
Chemical Characters of Waters of Angat and Montalban Rivers. R. H. Aguilar.—p. 43.  
Lycopodiaceae Philippinenses. V. W. Herter, Berlin, Germany.—p. 57.  
\*Antiscorbutic Vitamin in Some Oriental Fruits and Vegetables. H. Embrey, Peking.—p. 77.  
Elacatidae of Philippine Islands and Adjacent Regions. E. A. Chapin, Washington, D. C.—p. 83.  
Geographic Distribution of Cucujidae (Coleoptera) I. Laemophloeini. V. F. Kessel.—p. 91.  
New Cercopithecids of the Philippines. V. Lallemand, Brussels.—p. 101.  
Effects of Extracts of Ascaris Vitellorum on Experimental Animals. B. Schwartz.—p. 109.

**Treatment of Amebic Dysentery.**—Infections with *Endameba histolytica* were produced by Sellards and Leiva in cats, and treated successfully with emetin and with quinin. Papaverin was inefficacious. In the treatment of cats with quinin very large doses were required; but, in contrast to emetin, repetitions of the therapeutic dose could be tolerated for many days. Experimental amebic dysentery is a somewhat artificial condition; nevertheless, it responds to emetin in a manner similar to spontaneous dysentery in man. All of the patients studied had frank amebic dysentery, and were seen either in the first attack or during a typical relapse. Five were treated with *Castela nicholsoni*, two with *Brucea amarissima*, and two with *Harrisonia perforata*. Preparations of these plants were always given by mouth, except in one instance, when a few doses were given by rectal injection. Prompt relief of symptoms, accompanied by the disappearance of amebas from the stools, was obtained only with *Castela nicholsoni*. With each of the others, some clinical improvement occurred for a few days, but in three of the four cases the amebas persisted and the symptoms returned while the patients were under treatment. One patient relapsed; three patients remained entirely free of symptoms, although one was passing cysts of *Endameba histolytica*.

**Effect of Stasis on Experimental Development of Amebic Dysentery.**—A laparotomy was performed by Sellards and Leiva on three cats under general anesthesia and a ligature was placed around the large bowel in order to produce stasis in its upper end. A suspension of *Endameba histolytica* was inoculated into the cecum. All three animals developed lesions above the ligature. This experiment explains: (a) the usual occurrence of the initial lesions of amebic dysentery in the cat in the lowermost portion of the large bowel; (b) the superiority of intracecal inoculations over injections by rectum for insuring infection with ameba, and (c) the occasional failure of virulent amebas to infect susceptible kittens. Stasis is probably an important factor in determining the location of the lesions within the large bowel in spontaneous amebic dysentery in man.

**Antiscorbutic Vitamin in Oriental Fruits and Vegetables.**—Of the foods examined by Embrey, pomelo, cucumber, chico, and guava afforded the best protection from scurvy. In each case 10 gm. of the food given daily protected the animals from scurvy for a period of nine weeks. When deaths occurred on these diets after a few weeks, postmortem examination showed the causative factor to be pneumonia. Fifteen grams of banana each day gave protection from scurvy for a period of nine weeks; 15 gm. each of kangkong leaves and of camote leaves daily gave protection for a period of from seven to nine weeks.



## Porto Rico Medical Association Bulletin, San Juan

Dec. 31, 1922, 16, No. 140

- \*Surgery of Gallbladder. Jorge del Toro.—p. 235.
- \*Micro-Analysis of Blood. R. del Valle Sárraga.—p. 239. Cont'n.
- \*Lessons for Surgery from War. Amalio Roldán.—p. 246.

**Surgery of Gallbladder.**—Del Toro urges the necessity for varying the operative measures according to the individual case. His experience has demonstrated the wisdom of being content at times with an incomplete operation that does not follow any preconceived plan.

**Microchemical Analysis of Blood.**—In this instalment of his report of research on the blood, del Valle Sárraga presents evidence to show that the Ambard uresecretory constant does not yield any information which is not already available from the chemical findings in the blood.

**Lessons for Surgery from World War.**—Roldán discusses the evolution and revolution in surgery which resulted from the teamwork of the war. Operative surgery now, he says, seems to be in a period of retrogression. We operate so much earlier that the big operations of the past are not required. Greater skill in obstetrics prevents extensive vesicovaginal fistulas, and prompt operation for strangulated hernia has done away with the necessity for extensive enteroanastomosis. He adds that gastro-enterostomy seems to be coming into its own again, after a period of eclipse. The combination of operative measures and fulguration for cancer has proved successful in some cases. He believes, however, that neither physiotherapy nor surgery can effectually combat cancer. We must look to biology, biochemistry and chemotherapy for this. If we can effectually combat the predisposition to cancer, the cure of confirmed cancer will then be within sight.

## Public Health Journal, Toronto

February, 1923, 14, No. 2

- Work of Public Health Nurse in Montreal. E. Gagnon, Montreal.—p. 49.
- Child Welfare in Prince Edward Island. A. E. MacMahon, Prince Edward Island.—p. 57.
- Sewage Treatment for Isolated Houses and Small Institutions Where Municipal Sewage Is Not Available. E. Parry.—p. 62.
- Canadian Social Hygiene Council. Social Case Sheet Investigation. M. Kensit, Toronto.—p. 68.
- Venereal Disease Control in Ontario. E. L. Moore, Ontario.—p. 74.
- Public Health Nurses in Venereal Disease Clinics. F. E. Brown, Toronto.—p. 76.

## Rhode Island Medical Journal, Providence

February, 1923, 6, No. 2

- Postoperative Lung Sequelae. J. Perkins, Providence.—p. 17.
- \*Postoperative Pulmonary Complications. C. O. Cooke and W. Pickles, Providence.—p. 18.

**Postoperative Pulmonary Complications.**—Of 1,000 operative cases on the surgical services of the Rhode Island Hospital which are analyzed by Pickles, thirty-nine patients developed some form of postoperative pulmonary complication. Nine of these patients died. Fewer deaths were caused by pneumonia. Two patients developed lung abscesses following operation. One of these died. Of four cases of lung infarction, one ended fatally.

## Southern Medical Journal, Birmingham, Ala.

February, 1923, 16, No. 2

- \*Gallbladder Disease. M. E. Rehfuß, Philadelphia.—p. 75.
- Surgical Treatment of Diseases of Gallbladder. I. Abell, Louisville, Ky.—p. 83.
- \*Report of 3,080 Cases of Measles with Special Reference to Pneumonia. H. R. Mixsell, and E. Giddings, New York.—p. 90.
- Dermatology. W. A. Pusey, Chicago.—p. 94.
- Carbohydrate Metabolism. M. Smith, Jacksonville, Fla.—p. 99.
- Radiotherapeutic Technic of Face and Mouth. W. A. Weed, Birmingham.—p. 102.
- Clinical Aspects of Botulism. J. C. Geiger, Chicago.—p. 106.
- Summary of Dengue Research, October to November 13, 1922. W. L. Holt, Little Rock, Ark.—p. 112.
- Colloidal Preparations, Especially Colloidal Silver Chlorid. E. G. Ballenger and O. F. Elder, Atlanta, Ga.—p. 114.
- Correction of Cleft Palate. W. A. Bryan, Nashville, Tenn.—p. 117.
- Retroperitoneal Cysts: Report of Case. J. K. Simpson, Jacksonville, Fla.—p. 121.
- Postoperative Care of Urinary Cases. A. L. Chute, Boston.—p. 124.
- Training of an Obstetrician. C. R. Hannah, Dallas, Texas.—p. 131.
- Aural Conditions Resulting from Pool and Sea Bathing. H. M. Taylor, Jacksonville, Fla.—p. 134.

**Gallbladder Disease.**—Medical men, Rehfuß states, cannot cure a diffuse, chronic cholecystitis in which there is infection and infiltration of the gallbladder wall. They cannot cure demonstrable gallstones. They cannot absorb adhesions between the gallbladder and duodenum and the stomach, nor can they by any stretch of the imagination replace an altered topography due to an extensive lesion in the upper right quadrant. On the other hand, the medical man can and does relieve low grade infections, biliary stasis, functional alterations of the digestive tract with unquestioned functional disturbances in the liver and gallbladder. In many instances he makes a patient with gallstones entirely comfortable, and for years, in many instances, he succeeds in rendering a person immune to further attacks which are unquestionably those of infection of the gallbladder. As to whether the gallbladder ought or ought not be removed, it is Rehfuß' opinion that if the gallbladder wall shows unquestioned evidence of infection, it should always be removed. No form of drainage succeeds in controlling a form of focal infection. But the surgeon who operates upon the gallbladder simply operates upon the end-product of the forces producing gallbladder disease. The rest of the hepatoenteric circulation is still intact and the deviations which have brought about the disease are still present. Therefore, it is urgently necessary for the medical profession to realize the necessity for some form of postoperative procedure in gallbladder cases in precisely the same way that it realizes the postoperative ulcer cure.

**Pneumonia Following Measles.**—In this series of 3,080 cases of measles, pneumonia, bronchial and lobar, occurred in 826, a percentage of 26.8. In other words, one out of every four patients with measles, either had pneumonia on admission to the hospital or developed it during the course of the disease. Of the 826 cases of pneumonia, 424 terminated in death, 51.33 per cent. The number of deaths from all causes was 476, so that 89.20 per cent. of all the deaths in measles were due to pneumonia.

## Surgery, Gynecology and Obstetrics, Chicago

February, 1923, 36, No. 2

- \*Carcinoma of the Jaws, Tongue, Cheek and Lips. G. W. Crile, Cleveland.—p. 159.
- \*Carcinoma of Tongue. E. S. Judd and G. B. New, Rochester, Minn.—p. 163.
- \*Carcinoma of Lip and Cheek. G. E. Brewer, New York.—p. 169.
- \*Polycystic Kidney. R. H. Crawford, Rutherfordton, N. C.—p. 185.
- Leukoplakia of Renal Pelvis: Report of Case. R. E. Cumming, Detroit.—p. 189.
- \*Echinococcus Disease of Kidney. H. L. Kretschmer, Chicago.—p. 196.
- \*Hitherto Unrecognized Mode of Origin of Congenital Renal Cysts. O. F. Kampmeier, Chicago.—p. 208.
- \*Uterine Secretion: Experimental Investigation Into Its Effect on Coagulation of Blood. I. Kross, New York.—p. 217.
- Surgical Importance of Iodin Idiosyncrasy and Poisoning. H. G. Rowell, New Bedford, Mass.—p. 219.
- \*Association of Fetal Monstrosities and Deformities with Placenta Praevia. J. P. Greenhill, Chicago.—p. 227.
- \*Immediate Versus Delayed Operation in Cases of Collapse Following Ruptured Ectopic Pregnancy. E. M. Hawks, New York.—p. 232.
- \*Carcinoma Mammae. J. E. Sadlier, Poughkeepsie, New York.—p. 235.
- Full Term Ovarian Pregnancy. F. L. Good, and T. K. Richards, Boston.—p. 239.
- Treatment of Hydatiform Mole and Chorio-Epithelioma: Relative Frequency of Each. O. A. Gordon, Jr., Brooklyn.—p. 242.
- Fibroma of Ovary. Report of Fifty-Five Cases. M. R. Hoon, Rochester, Minn.—p. 247.
- Intracranial Aerocele Following Fracture of Skull. Report of Case with Review of Literature. F. C. Grant, Philadelphia.—p. 251.
- \*New Method of Gallbladder Dissection. G. L. McWhorter, Chicago.—p. 256.
- Intestinal Resection in Massive Umbilical Hernia. H. L. Foss, Danville, Pa.—p. 263.
- Aseptic Resection of Intestine. E. D. Highsmith, Atlanta, Ga.—p. 271.
- \*New Technic for Posterior Gastro-Enterostomy. R. R. Villegas, Buenos Aires, Argentine.—p. 273.
- New Method of Making Ureteropyelograms. N. P. Sears, Syracuse, New York.—p. 274.
- \*Heart Massage as Final Resort for Resuscitating Hearts Failing Under General Anesthesia. T. C. Bost, Charlotte, N. C.—p. 276.
- \*New Procedure in Treatment of Eclampsia. H. J. Davidson, Seattle, Wash.—p. 280.

**Carcinoma of Jaws, Tongue, Cheek and Lips.**—The logical technic for removal of cancer of the cheeks, lips, jaws and tongue, Crile says, is a complete block excision of the regional lymphatic system, together with a wide excision of the primary focus. In operations for cancer of the buccal mucous membranes, a "platter" of underlying bone should be removed



together with the intact growth. No cancer tissue should be cut or handled. Gas oxygen combined with local anesthesia or local anesthesia alone is the choice. A single treatment with deep, accurately measured roentgen ray or radium dosage is employed after operation.

**Carcinoma of Tongue.**—All patients with operable cancers of the tongue, Judd and New state, should be given the benefit of surgery, including cauterization of the local lesion and excision of the glands of the neck. Radium should also be employed in order to give these patients every possible chance.

**Surgical or Radium Treatment for Cancer.**—Brewer's statistics are said to prove that the results of surgical treatment of the lip are far superior to those as yet obtained by radium, and that surgeons are not justified at the present time in advising radium treatment in early operable cases. On the other hand, in cancer of the cheek, the results by radium are so evidently in advance of those obtained by operation, that until it can be demonstrated by a series of cases observed for three to five years that operation gives equally good results, all cancers arising in the mucous membrane of the cheek should be treated by radium.

**Polycystic Kidney.**—Crawford cites the case of a man who had a polycystic kidney and many of whose ancestors for three generations had had the same disease. Hence, Crawford concludes, that polycystic kidney is a familial affection.

**Echinococcus Disease in Right Kidney.**—In Kretschmer's case, a preoperative diagnosis of tumor in the right kidney was made, but the nature of the tumor was not recognized.

**Origin of Congenital Renal Cysts.**—Several interesting and significant observations in the developing human kidney have been made by Kampmeier, which have a direct clinical bearing. These are: (1) the existence of avestigial primary generation of uriniferous tubules; (2) the occasional cystic transformation of such vestigial tubules; (3) the early communication of the next or second order of uriniferous tubules (the first generation of previous authors) with collecting ducts of the corresponding order, namely the second; (4) the temporary detachment of most of these tubules from the secondary collecting ducts and their reunion with ducts of the fourth and fifth orders; (5) the later permanent separation of these uriniferous tubules from those ducts and the cystic transformation of most of them; in other words, the apparently constant appearance of renal cysts at a certain period of fetal life. That these vestigial tubules may have an important clinical significance is shown by the discovery of their occasional cystic transformation. It is easily conceivable how not only a single renal cyst may be derived from them in a kidney otherwise normal, but by its further growth and pressure might readily become the starting point of a progressive formation of cysts involving the entire neighboring portion of the kidney.

**Effect of Uterine Secretion on Coagulation of Blood.**—In a series of preliminary experiments with human endometrium, Kross tested the effects of the extract on coagulation of human blood. The results obtained were inconstant and contradictory. The problem was then approached from the animal experimental side to determine its effect on the coagulation of blood as a step in the solution of the problem of pathologic uterine hemorrhage. These experiments gave evidence that the uterine secretion in rats contains a substance or substances that have the power of delaying coagulation time and of dissolving blood clots. Kross is of the opinion that the results of his experiments justify the theory that the cause of abnormal uterine bleeding, not accounted for on anatomic grounds, i. e., neoplasms, etc., lies in a deviation from the normal physiology of the secretion formed in and by the uterine mucosa. That this, in turn, is controlled by the ovary, either in whole or in conjunction with other glands of internal secretion, is regarded as most likely.

**Fetal Monstrosities and Placenta Praevia.**—An attempt is made by Greenhill to prove that fetal monstrosities and deformities not infrequently occur in cases of placenta praevia. To fifteen cases found in the literature he adds six. It is his belief that the monsters associated with placenta praevia are due to the faulty relation between the placenta and the fetus which gives rise to arrests in development.

**Statistics for Ectopic Pregnancy.**—Of 824 cases of ectopic pregnancy, in which Hawks analyzed the histories, 187 patients were prostrated from hemorrhage. There were ten deaths from hemorrhage in seventy-four of these cases. The remaining 113 patients were operated on immediately. In 1921 there were twenty deaths from ectopic gestation in the borough of Manhattan and five of these women died from hemorrhage unoperated on. The mortality in 113 consecutive cases of collapse in which operation was done immediately was 8.8 per cent. The mortality in seventy-one consecutive cases of collapse with expectant treatment and deferred operation was 17 per cent.

**Breast Cancer Statistics.**—Seventy cases of breast cancer which were submitted to operation are reviewed by Sadlier. The mortality in this series was 51.4 per cent. The patients died from other conditions without recurrence of carcinoma and with an interval of from one to ten years of perfect health; 32.85 per cent. of patients are living without recurrence; eighteen patients are living more than three years after operation; fourteen are living more than five years after operation. The total number cured, based on a five-year period, is seventeen.

**New Method of Gallbladder Dissection.**—McWhorter describes what he terms a lateral posterior approach to the gallbladder, followed by posterior dissection. He claims that the dangers from hemorrhage from a torn cystic artery and injury of the bile ducts from hurriedly applied hemostats are avoided, and the method is easier mechanically than any other.

**New Technic for Posterior Gastro-Enterostomy.**—The technic described by Villegas differs from the usual technic in that clamps are not employed, and that after inserting the first line of serous sutures the jejunum is turned from the right to the left side of the patient.

**Heart Massage for Resuscitation After Anesthesia.**—Of seventy-five cases on record in which heart massage was employed, sixteen were successful, ending in complete recovery; twenty-three were partially successful in that the heart beat and respiration were resumed, but the patients died in from one-half hour to two or three days. Bost has had two cases. One patient lived fourteen hours from the time of resuscitation; the other seventy-seven hours. In the first case heart action had been suspended for about six minutes before heart massage was begun; and in the other case, for about twenty-five minutes.

**Treatment of Eclampsia.**—Davidson's routine treatment in postpartum eclampsia consists in first injecting from 0.5 to 1 grain morphin hypodermically, repeating as indicated. Every four hours from 1 to 1.5 liters of water is put into the stomach through the tube, the larger quantity unless signs of retching supervene, in which case the tube is quickly withdrawn. In a total of more than seventy gavages, Davidson says he has never recovered a drop of water introduced four hours previously. From 1 to 1½ ounces of magnesium sulphate is given twice in the twenty-four hours and 20 grains of potassium acetate and potassium citrate or some alkaline diuretic is given with each gavage. Excessive bed clothing, artificial heat, hot packs and bleeding are all discarded.

### U. S. Naval Medical Bulletin, Washington, D. C.

February, 1923, 18, No. 2

- Military Surgeon as Specialist. D. N. Carpenter.—p. 177.
- Equipment of Transports During World War. J. J. Snyder.—p. 185.
- Plastic Surgery. L. W. Johnson.—p. 214.
- Clinical Value of Blood Chemistry in Chronic Nephritis. J. J. O'Malley.—p. 219.
- Correction of Occlusal Stress on Inlay Patterns Without Distortion. H. E. Harvey.—p. 224.

### West Virginia Medical Journal, Huntington

February, 1923, 17, No. 8

- Evolution of Modern Diagnosis; Historical Review. G. B. Capito, Charleston, W. Va.—p. 297.
- No More Doctors Needed in West Virginia. A. B. Butt, Elkins, W. Va.—p. 303.
- Plea for Early Operative Measure in Gallstones. C. F. Hicks, Huntington.—p. 310.
- Diseases of Female Bladder. L. W. Bremerman, Chicago.—p. 313.
- Pott's Disease—Its Unsuspected Frequency in Adults and Its Comparative Difficult Early Diagnosis. C. Riely.—p. 321.
- Case of Brain Tumor. W. A. Wallace.—p. 325.



## FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

## British Medical Journal, London

Feb. 10, 1923, 1, No. 3241

- \*Some Problems of Gastric and Duodenal Ulcer. B. Moynihan.—p. 221.  
Sleep and Sleeplessness. W. J. Smyth.—p. 226.  
Instruments Left in Peritoneal Cavity: Analysis of Forty-Four Unpublished Cases. C. White.—p. 228.  
\*Treatment of Trypanosomiasis. C. H. Marshall and S. M. Vassallo.—p. 231.  
\*Histologic Conditions in Case of Addison's Disease. E. E. Hewer.—p. 235.  
Two Cases of Horseshoe Kidney. C. Morson.—p. 236.

**Some Problems of Gastric and Duodenal Ulcer.**—The number of cases reviewed by Moynihan is 718. These consisted of 531 cases of duodenal ulcer (men 433, women 98); 164 cases of gastric ulcer (men 83, women 81). In 152 cases one ulcer was present: in twelve cases two or more ulcers existed. There were twenty-three cases of gastric and duodenal ulcers together (men, ten; women, thirteen). In the total number of cases of gastric ulcer (187) a duodenal ulcer was found, therefore, in 12.3 per cent. The last death from any operation for duodenal ulcer occurred in 1912; since then there have been more than 500 consecutive cases without a death. Among the total number of patients operated on for duodenal ulcer there were six who later developed jejunal ulcers. The mortality in cases of gastric ulcer, and gastric and duodenal ulcer, treated by gastrectomy is 1.6 per cent. Moynihan approves of the fractional method of Rehfuß in the examination of the gastric contents. Only 20 per cent. of thirty-nine cases of gastric ulcer showed a high normal curve or hyperchlorhydria, whereas the percentage of such changes in seventy-one cases of duodenal ulcer was 72.7. The comparative value of medical and surgical treatment is discussed. Moynihan's position is well known.

**Treatment of Trypanosomiasis.**—In the cases analyzed by Marshall and Vassallo only one complete treatment was given—that is, one intravenous injection of arsenic and one intrathecal injection of serum the following day, as against the prolonged treatments of others and all the patients (twenty-nine) are "alive and well."

**Histologic Condition in Addison's Disease.**—In the case recorded by Hewer old pleural adhesions were present over the whole of the right lung; a few scars of old healed tubercles were found at the right apex. The bronchial glands showed no evidence of tubercle. The heart weighed 230 gm. and was normal. The liver weighed 1,450 gm. and was slightly nutmeg. The gallbladder was distended and contained a single small black stone; there was no evidence of inflammation. The spleen weighed 200 gm.; there was moderate perisplenitis. The kidneys were normal. The right suprarenal weighed 16 gm.; the left, 22 gm. The right gland was small and fibrous, the left showed much fibrosis and some areas of caseating material. No evidence of accessory suprarenal tissue was found. Only one small area of cortical tissue was found involved in a chronic tuberculous process with round cell infiltration showing an unusually high percentage of plasma cells. There was much fibrosis, some calcification, and formation of many giant cell systems. The cells of the cortical tissue were of the type belonging to the zona fasciculata, many of them spherical with strongly eosinophil cytoplasm and excentric nuclei; other cells were very irregular, with poorly staining nuclei. Hewer argues that the unhealthy appearance of these cells might have been due to postmortem changes, but more probably indicates the breakdown of the last remnants of true cortical tissue. No medullary tissue was found. The surrounding fat was unusually rich in small round cells. A small ganglion just outside the organ showed some cellular degeneration and pigment deposition.

Feb. 17, 1923, 1, No. 3242

- John Hunter (1728-1793): His Affairs, Habits and Opinions. J. B. Sutton.—p. 267.  
\*Properties of Certain "Colloidal" Preparations of Metals. A. J. Clark.—p. 273.

- \*Five Cases of Diabetes Mellitus in Young Children. F. J. Poynton.—p. 277.  
Botulism as Seen in Scotland in 1922. T. K. Monro and W. W. N. Knox.—p. 279.  
\*Cause and Cure of Chronic Rheumatism. E. H. Freeland.—p. 281.  
Treatment of Three Cases of Oriental Sore by Phosphorated Oil. A. Castellani.—p. 283.

**"Colloidal" Preparations of Metals.**—The physicochemical tests employed by Clark indicated that the active principles of some of the "colloidal" preparations investigated were entirely in the colloidal form; in other cases the active principles were partly in colloidal form and partly in true solution; while in some cases the whole of the active principle appeared to be in true solution. The pharmacologic tests employed failed to show any marked difference between the action of the "colloidal" preparations tested and the action of the same substances in true solution.

**Diabetes Mellitus in Young Children.**—Poynton's patients varied in age from 5½ to 9 years. The quantity of sugar in the urine varied from 2.2 per cent. to 8.6 per cent. One patient had suffered from diabetes for eleven months. Death was sudden. A necropsy was not permitted. Another patient died about three years after the onset of the disease. The liver was large, pale and flabby; the kidneys appeared natural. The pancreas was small and soft, and microscopy showed no increase of fibrous tissue but atrophy of cells. The gland looked exhausted, and the cells of the islands of Langerhans were atrophied and separated by connective tissue. The third case was of especial interest because there had been a history of only one week's illness. The fourth patient was ill about two years. The postmortem examination showed, as in the second case, a fatty liver, but the pancreas was shrunken and even more wasted than in the former case. Microscopy showed no active reaction, no trace of inflammatory change, but similar shrinking of the cells of the islets and relative increase of connective tissue. The fifth patient was ill about two and one-half years. There was no necropsy. Poynton says that this fact, if nothing more, is to be learned from these cases—that even in the young, with careful dieting (and presumably some care will always have to be taken with the diet), sugar and ketone bodies may disappear for weeks and months.

**Cause and Cure of Chronic Rheumatism.**—Freeland asserts that rheumatism is a definite disease due to the invasion of the part affected by the *Streptococcus rheumaticus* of Poynton and Paine, and that the only method of treatment which can be expected to give results is vaccine therapy.

## Journal of Tropical Medicine and Hygiene, London

Feb. 1, 1923, 26, No. 3

- Description of the Diseases of Mongalla, Central Africa. E. B. N. Cantlie.—p. 35.  
Porocephalus Pomeroyi. W. N. F. Woodland.—p. 45.  
Clinical Experience with Insulin (Pancreatic Extracts) in Treatment of Diabetes Mellitus. F. G. Banting, W. R. Campbell and A. A. Fletcher.—p. 50.  
Case of Bronchomoniliasis. M. J. Parmanand.—p. 54.

## Lancet, London

Feb. 10, 1923, 6, No. 5189

- \*Relation of Disease of Gallbladder to Secretory Function of Stomach and Pancreas. H. E. Griffiths.—p. 265.  
Progress and Problems in Epidemiology. R. J. Reece.—p. 271.  
\*Pernicious Anemia Analysis of 117 Cases. P. N. Panton, A. G. M. Jones and G. Riddoch.—p. 274.  
Intrathoracic Catastrophes Simulating Acute Abdomen. J. H. Pringle.—p. 279.  
Treatment of Kala-Azar by "Stibenyl." Report of Ten Cases. L. E. Napier.—p. 280.  
Case of Enuresis Treated by Electricity. M. O' Beadon.—p. 283.  
Herpes and Varicella. J. F. McClean.—p. 283.  
\*Case of "Subpleural" Lipoma in Child. C. F. Beyers.—p. 283.  
Acute Osteomyelitis Treated by Early Incision; Recovery. P. B. Kittel.—p. 284.

**Relation of Disease of Gallbladder to Secretory Function of Stomach and Pancreas.**—Griffiths endeavors to show that the gallbladder is only a unit in a definite digestive complex embracing the liver, gallbladder, pancreas and stomach, and that any disease affecting one unit is bound to be reflected in the whole system. A careful analysis of the history and clinical examination of a patient suffering from disease of the gallbladder will reveal many points indicative of involve-



ment of the stomach and the pancreas, but which none the less point to the original trouble. Infection of the gallbladder acting reflexly through the vagus nerve tends to cause hyperchlorhydria and regurgitation. In some cases, in which the sensory stimulus is greater, pylorospasm is the result of a sympathetic reflex through the ninth thoracic segment. Regurgitation from the duodenum may also be attributed to the unregulated flow of bile in cases in which a gallbladder is no longer capable of acting as a reservoir. The pancreas is peculiarly prone to infection from the gallbladder. In the majority of cases infection occurs through the lymphatics; in others by the regurgitation of bile along the main duct consequent upon obstruction at the ampulla of Vater. This obstruction is frequently due to spasm of Oddi's sphincter and occurs with pylorospasm. The secretion of the pancreas into the duodenum is seldom markedly diminished, the exception being in cases of catarrhal pancreatitis; but through lack of adequate admixture of bile, the digestive function of the pancreatic juice may be seriously diminished. The internal secretion of the pancreas, except in very rare cases—e. g., pancreatic necrosis—is not very much upset, although the increased amount of diastase in the urine and occasional positive Loewe's reaction are indications of some slight alteration. In some obscure cases of gallbladder disease, in which the cause cannot be found by the ordinary clinical methods, exhaustive examination of the functions of the stomach and the pancreas may lead to a correct diagnosis.

**Pernicious Anemia.**—The clinical records of 117 cases of pernicious anemia are analyzed by Panton, Jones and Riddoch. The average age of the patients was 46, with extremes of 20 and 68, the average duration of symptoms up to admission to hospital was seventeen months, the two extremes being seven days and six years. One hundred and seven patients complained of weakness, and in forty-nine it was the chief complaint. Thirty-three patients had noticed a change of color. The primary complaint of eight patients was loss of weight, and twenty-six patients were noted as being wasted. Fever was noted at one time or another in ninety cases, the average range being from 99 to 100 F. It was noticed in studying the temperature charts that improvement in a patient's condition was, as a rule, synchronous with the disappearance of the fever. Further, the more acute the case, the more constant was the presence of the fever. Eighty-six patients complained of symptoms referable to the gastro-intestinal system; in fifty-three cases complaints of this nature were primary. On analysis, fifty-one patients complained of vomiting, thirty of diarrhea, twenty-six of anorexia, and twenty-four of epigastric pain. The authors are not of the opinion that oral sepsis has any proved etiologic significance in pernicious anemia, although it cannot but be detrimental to a patient's health and may at times produce a secondary anemia such as is caused by any other chronic suppurative process. While the very frequent occurrence of achylia was noteworthy, it is not considered an essential etiologic factor. Hematemesis was complained of by three patients, and in one instance only was it copious. The spleen was palpable in twenty-one cases, and the liver was enlarged in nineteen cases. Sixty-three patients complained of cardiovascular symptoms. Sixty-two patients had cardiac murmurs. Twenty-five patients complained of headache and eighteen of numbness and tingling of the hands and feet. Albuminuria was present in twenty-four patients, two passed bile pigment in the urine, and one showed glycosuria. In the authors' opinion, recovery from pernicious anemia is an event of such rarity that it cannot be accepted in any case without the fullest confirmation.

**Subpleural Lipoma in Child.**—Beyers' patient was only 22 months of age. A swelling on the front of his chest was first noticed by his mother when he was 10 months old. It was painless and caused no symptoms, but grew steadily larger. Its surface was somewhat lobulated, and it gave a feeling of fluctuation. At operation it was found to occupy the anterior mediastinum, pushing the pleurae away from each other and resting on the pericardium. It was circumscribed, lying quite loose in the areolar tissue and having no obvious organic connection with either pleura or pericardium. It was a fatty tumor.

Feb. 17, 1923, 1, No. 5190

- John Hunter, His Affairs, Habits and Opinions. J. B. Sutton.—p. 315.  
Physicochemical Mechanism of Cell Respiration. O. Meyerhof.—p. 322.  
\*Cases of Delayed and Immediate Anaphylactic Shock: Circulatory Phenomena. J. Fawcett and J. A. Ryle.—p. 325.  
The Standard of Cure in the Treatment of Gonorrhea. W. L. Harnett.—p. 327.  
Psychotherapeutics. E. F. Buzzard.—p. 330.

**Cases of Delayed and Immediate Anaphylactic Shock.**—Fawcett and Ryle cite the case of a woman who because of a "septic" finger was given 50 c.c. of antistreptococcal serum subcutaneously at the time of amputation of the finger. Four days later patches of urticaria began to appear, and there was slight evening pyrexia. Eight days after the serum was given the patient was awakened by breathlessness. She was seen sitting up in bed with "asthmatic" type of breathing. Within twenty minutes the asthmatic attack was over, but she felt cold and shivery, the pulse remained quick, and urticaria continued to appear. Under expectant treatment recovery occurred almost abruptly about thirty-four hours after the first appearance of urgent symptoms. In the second case the symptoms of anaphylactic shock appeared one hour after receiving a third dose of antitetanic serum.

Feb. 24, 1923, 1, No. 5191

- \*Therapeutic Inoculation. L. Colebrook, E. J. Storer and S. E. Wright. (To be continued.)—p. 365.  
\*Clinical Results of Treatment of Malignant Disease by Roentgen Rays. J. H. D. Webster.—p. 373.  
Chronic Fecal Typhoid Carrier Successfully Treated with Detoxicated Vaccine. J. P. Watt.—p. 378.  
Lethargic Encephalitis: Intensive Outbreak in Small School. L. L. Fyfe.—p. 379.  
Two Cases of Acute Lymphatic Leukemia. W. E. Cooke.—p. 382.  
Use of Rhubarb in Acute Bacillary Dysentery. H. C. Brown.—p. 382.

**Therapeutic Inoculation.**—In this instalment, Colebrook, Storer and Wright discuss the original pasteurian code, the bactericidal and opsonic changes produced in the blood by the inoculation of vaccines into the patient, and the changes produced in the blood by inoculation of vaccines in vivo and in vitro.

**Treatment of Malignant Disease by Roentgen Rays.**—The literature on this subject is reviewed and analyzed by Webster, and he agrees with Schmieden and Holfelder in their conclusions which represent what may be called cautious progressive present day opinion: (1) With few exceptions every operable carcinoma should be operated on, with prophylactic postoperative irradiation in addition. (2) In addition to postoperative irradiation, a single intensive irradiation before operation is coming to be considered important. (3) Practically all inoperable carcinomas and all inoperable recurrences should be irradiated. This gives in many cases clinical cure, in others it results in operability, often less bleeding, irritation and pain, as well as limitation of further metastasis. (4) Facial carcinoma, even when operable, can well be treated exclusively by irradiation for cosmetic reasons. (5) Sarcoma, as a rule, should only be irradiated, certainly in all cases in which operation would cause considerable bodily mutilation. The time has not yet come when comparative statistics can show the value of operation or irradiation.

**Acute Lymphatic Leukemia in Children.**—The points of interest in the two cases recorded by Cooke are (1) the ages of the patients, 3 and 2½ years, respectively; (2) one is a female, and (3) in one case the lymphatic tissue enlargement was confined entirely to the abdominal glands, while in the other case all the lymph glands in the body were involved.

### Medical Journal of Australia, Sydney

Jan. 13, 1923, 1, No. 2

- Infant Feeding. E. S. Morris.—p. 29.  
Action of Hexamethylene-Tetramine. M. G. Sutton.—p. 31.  
Mechanism of Hyperchlorhydria. F. L. Apperly.—p. 33.  
Dietetic Survey of Infants. F. H. Beare.—p. 37.  
Case of Malignant Ovarian Cyst with Involvement of Appendix. A. L. Bryant.—p. 41.

Jan. 20, 1923, 1, No. 3

- Diagnosis and Treatment of the Neuroses. M. C. Lidwill.—p. 57.  
Deep Roentgen-Ray Therapy for Inoperable Malignant Disease. B. J. Harrison.—p. 62.  
Case of Nocturnal Enuresis Presumably Due to Defective Cerebral Development. J. H. Anderson.—p. 68.



## Bulletin de l'Académie de Médecine, Paris

Jan. 16, 1923, 88, No. 3

- \*Smallpox Statistics. J. Arnaud.—p. 69.  
\*Blood Serum Reaction in Diagnosis of Cancer. R. Fischer.—p. 71.  
\*Treatment of Diabetes with Insulin. L. Blum.—p. 73.

**Smallpox Statistics in Marseilles.**—A report on the 121 cases of smallpox in Marseilles, from 1916 to 1922, shows the predominance of imported cases, and the value of good isolation.

**Blood Serum Reaction in Early Diagnosis of Cancer.**—Fischer assumes that as a rule the globulins protect the albumins from precipitation, forming a certain stable balance between them in normal conditions. He calls this faculty of the blood serum "prostaxis." A 2:1,000 solution of gelatin makes albumin coagulate more readily, while the globulin becomes less coagulable. When the protective action of globulins exists, the coagulation of the whole serum by alcohol is less pronounced after addition of gelatin than after the addition of normal saline. This protective action is not present in paroxysmal hemoglobinuria, cachexia and cancer. He used this reaction in twenty-nine cases of cancers and in controls with other diseases. He compares the response to the coagulant (alcohol) of serum diluted with normal saline and of serum diluted with a 2:1,000 solution of gelatin in normal saline.

**Treatment of Diabetes with Insulin.**—Blum prepared insulin according to Banting and Best's method, and reports two favorable clinical experiences. In the debate, Achard mentioned similar organotherapeutic experiments at his school in 1919, and especially some experiments, never published, which his pupil Gardin made with decoctions of pancreas. The transient suppression of glycosuria, valuable as it is, is not a cure for diabetes. Gley mentioned also his experiments. He did not use ligation of ducts, because they regenerate too easily. He injected fats into the ducts, and stained them to see whether the whole pancreas was injected. He deplors the lack of facilities for keeping animals for experimental work, which prevents many researches in France.

Jan. 23, 1923, 88, No. 4

- \*Centennial Commemoration of Jenner's Death.—pp. 83-168.

**The Jenner Centennial.**—The proceedings at this special meeting in honor of the hundredth anniversary of the death of Jenner were mentioned in the Paris Letter, February 10, p. 416, and in the News department, p. 488.

Jan. 30, 1923, 89, No. 5

- \*The Cancer Ferment. A. Robin.—p. 174.  
\*Earning Capacity of the War Disabled. Gourdon et al.—p. 177.  
\*Mohammedan Prayer Customs. Dinguizli.—p. 181.

**The Ferment of Cancer.**—Robin found that autolysis is stronger in a liver affected by cancer than in normal livers. The autolysis was more pronounced in the relatively sound portions.

**Vocational Training of the War Disabled.**—Gourdon reports the results of reeducation of soldiers who were mutilated or became sick during the war. The results are better in those who were injured (earning capacity of 90 per cent.).

**Mohammedan Prayers and Hygiene.**—Dinguizli describes the Mohammedan daily prayer ritual, prescribed movements, and the ablutions which should precede them. He proves, by quotations, that Mohammed was perfectly conscious of the hygienic importance of both the exercises and the ablutions. The author sees in these movements—five sets of six genuflexions, etc., daily—also a prophylaxis of appendicitis. Of course, the prescription of frequent washing cannot be observed by the poor classes or by inhabitants of deserts, who are allowed to use sand instead. Yet the middle classes are at least as clean as other races of the same social status.

## Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 12, 1923, 47, No. 1

- \*Retention of Bile Elements. Lemierre and Lévesque.—p. 5.  
\*Treatment of Gonococcic Abscess. Léri and Luton.—p. 7.  
\*Kala-Azar in France. M. Labbé.—p. 10.  
\*Artificial Pneumothorax. E. Rist and F. Hirschberg.—p. 10.  
\*Sputum Examination. Caussade and Mme. Cribier.—p. 18.  
\*Chronic Bronchial Spirochetosis. P. Pagniez and A. Ravina.—p. 27.  
\*Progressive Lipodystrophy? L. Babonneix.—p. 29.  
\*Shock Treatment of Typhoid. A. de Verbizier.—p. 33.

- \*Roentgenologic Control of Bismuth Treatment. L. Veillet.—p. 35.  
\*Hyperesthesia of Thyroid Region. C. Lian.—p. 36.  
\*Typhoid Spleen and Paresis of Diaphragm. V. de Lavergne.—p. 43.  
\*Intermittent Fever of Meningococcus Origin. A. Netter.—p. 46.  
\*Temperature After Injury of Spinal Cord. S. I. de Jong.—p. 53.  
Charcot-Leyden Crystals and Eosinophils. Idem.—p. 55.

**Dissociated Retention of Bile Elements.**—Lemierre and Lévesque observed a case of Weil's disease in which the Hay reaction (for bile salts) remained positive during convalescence while there was no bilirubin or urobilin in the urine. Yet the jaundice cannot be considered as dissociated, because examination of the blood revealed an increased proportion of bilirubin.

**Treatment of Gonococcic Abscess.**—Léri's patient recovered from a gonococcus abscess on his shoulder after four injections of antigococcus serum directly into the cavity of the abscess.

**Kala-Azar in France.**—Labbé points out that the two cases of kala-azar recently reported as acquired in France bring to four the total already known.

**Artificial Pneumothorax from Economic and Social Standpoints.**—Rist and Hirschberg estimate that the actual financial gain from restoration of earning ability in their thirty cases of tuberculosis treated by artificial pneumothorax amounted to a total of 67,450 francs. Deducting the cost to the authorities of the free treatment, leaves still an important surplus on the right side of the ledger.

**Comparison of Methods for Sputum Examination.**—Caussade and Cribier examined the sputum from twenty cases by various methods. They found that Petrof's medium is very sensitive and gives results in fifteen days. The enrichment method of Bezançon, Mathieu and Philibert is far superior to methods based on simple staining. Negative results with all these methods may be explained by local congestion around the tuberculous process, blocking it, and thus preventing the elimination of the tubercle bacilli. Inoculation of animals should never be omitted in dubious cases.

**Chronic Bronchial Spirochetosis.**—Pagniez and Ravina report the case of a young woman who for fourteen years has had blood in the sputum every morning. There are no clinical nor radiologic changes to be detected in the lungs, and the patient feels well except for occasional migraine. The upper respiratory passages also have a healthy appearance. The sputum contains numerous spirochetes of the type described by Castellani, and especially shows the typical lysis after standing a few hours. Arsphenamin and iodids were without effect, and emetin only temporarily diminished the amount of blood in the sputum. In the discussion that followed, Debré related his experiences with inoculation of the rabbit cornea and testicle with sputum from two patients with this bronchial spirochetosis.

**Progressive Lipodystrophy?**—Babonneix demonstrated a case in a girl of 17 who had lost most of the subcutaneous fat above the waist, while fat had accumulated in the lower portions of the body. Deposits of fat on the posterior aspect of the arms, general asthenia, and some minor signs made the condition atypical.

**Shock Treatment of Typhoid.**—De Verbizier reports a case of typhoid with extremely severe onset in a young man. He was given two intravenous injections of colloidal gold, and defervescence followed on the fifth day of the fever, with speedy recovery. The shock reaction to the second injection was so violent that stimulants had to be applied.

**Radiologic Control of Bismuth Treatment.**—Veillet recommends roentgen-ray examination for determination of the complete resorption of bismuth before starting a second course.

**Hyperesthesia of Thyroid Region.**—Lian reports his further experiences with the sign described by him in 1918. It is necessary to avoid all suggestion, and to estimate the extent of hyperesthesia by merely observing the face of the patient. The point of a pin is drawn along the skin of the neck, very lightly pricking the skin. He does this on suspicion of exophthalmic goiter before he mentions the thyroid or attracts attention to it. This sign is not found very frequently, but it is reliable if it is distinctly present over the thyroid as a



whole or over the isthmus or one lobe. It may be a special form of what Mackenzie calls viscerosensory reflexes.

**Typhoid Spleen and Paresis of Diaphragm.**—De Lavergne attributes to paresis of the diaphragm the difficulty in palpation of a distinctly enlarged spleen in typhoid.

**Protracted Intermittent Meningococcus Septic Fever.**—Netter's patient was a boy, aged 11 years, who presented fever for 112 days without meningitis. The clinical diagnosis of meningococcemia was confirmed later by positive complement fixation. The child recovered after two injections of 1 or 2 c.c. of pus obtained by injection of turpentine into a horse.

**Subnormal Temperature After Injury of Spinal Cord.**—De Jong observed a temperature of 28 C. (82.4 F.) with pulse rate of 36 in a soldier paralyzed after a fracture of the laminae of the sixth and seventh cervical vertebrae by a bullet. The next day the temperature was 32.2 C., the pulse 40. The patient's mind was clearer, and the third day the temperature was 36 to 38.5 and pulse 84. The fourth day the temperature rose to 40 C. and the man died. A hemorrhage had compressed the spinal cord.

### Paris Médical

Jan. 13, 1923, 13, No. 2

\*Hemiplegia in Heart Disease. H. Roger.—p. 37.

\*Cold Abscess After Thoracentesis. Carnot and Blamoutier.—p. 45.

\*Acute Meningitis in Infants. Lisbonne and Leenhardt.—p. 47.

**Hemiplegia in Heart Disease.**—Roger reviews the pathology and clinical features of hemiplegia due to heart disease. In young persons the hemiplegia is usually caused by a small embolus, and rarely persists. In old persons the condition is more serious, and the hemiplegia remains, if the patient does not die in coma. In contrast to this immediate prognosis, the cardiac disturbances are to be considered more seriously in young persons, because they may be due to malignant endocarditis. In old persons the absolute rest enforced by the paralysis may improve the condition of the heart. In the differential diagnosis, syphilis must be considered. Sometimes the spinal fluid presents characters of the puriform aseptic type: a milky white opalescent fluid with many polymorphonuclears which are however, absolutely intact. Albumin is slightly increased; the reducing power is normal; culture plates remain sterile.

**Cold Abscess of Thorax After Thoracocentesis.**—Carnot and Blamoutier publish four cases in which a tuberculous abscess of the chest wall developed after punctures of the thorax. It is easy to secure initial asepsis in making such punctures. But the asepsis cannot be maintained while drawing back the needle from an infected pleural cavity. One should not make useless exploratory punctures. The physician should especially avoid making several punctures close together at the same session, because such local lesions lead easily to the formation of an abscess. It would be well to put a drop of tincture of iodine into the needle before withdrawing it from the thorax. Autoserotherapy has very doubtful results. It is better avoided.

**Primary Acute Meningitis with Influenza Bacillus in Infants.**—Lisbonne and Leenhardt publish a fatal case of purulent meningitis, due to Pfeiffer's bacilli. The germs were very polymorphic.

### Presse Médicale, Paris

Jan. 20, 1923, 31, No. 6

Evolution of Surgical Obstetrics. Brindeau.—p. 57.

\*Sugar in Blood and Spinal Fluid. Polonovski and Duhot.—p. 60.

**Sugar in Blood and Spinal Fluid.**—Polonovski and Duhot found a balance between the sugar levels in the blood and spinal fluid. This does not mean identity but a mutual relation expressed in parallel changes, as, for instance, after injection of epinephrin and in diabetes. The increase in the reducing power of the cerebrospinal fluid in encephalitis is due to hyperglycemia. They confirm the importance of a low sugar level in the fluid in purulent meningitis, but emphasize the necessity for determining the sugar content of the blood at the same time. The changes of equilibrium between the sugar content of the blood and of the spinal fluid are more significant than the absolute figures in the spinal fluid alone.

Jan. 24, 1923, 31, No. 7

\*Blood Supply for Sutured Intestine. E. Desmarest.—p. 69.

\*Bacilli of the Colon and Lactic Group. H. Violle.—p. 70.

\*Bronchial Asthma from Appendicitis. R. A. Gutmann.—p. 72.

**Blood Supply to Sutured Portion of Intestine.**—Desmarest considers an inadequate blood supply to the sutured stumps in operations on the duodenum or colon as the real cause of subsequent sloughing and peritonitis. Operations on the colon become comparatively harmless if the surgeon takes care to incise the free ends longitudinally until he gets into a freely bleeding part. Resection of the few centimeters beyond makes the results much better.

**Differentiation of Bacilli of the Colon Group.**—Violle recommends Lemoigne's reaction for determination of acetyl-methyl-carbinol which is constantly produced by *Bacillus lactis-aerogenes* but never by the colon bacillus.

**Asthma of Appendicitic Origin.**—Gutmann reports four new cases in which attacks of bronchial asthma failed to reappear after appendectomy. In these cases of asthma of appendicitic origin, an attack of asthma can be brought on by applying pressure to the ileocecal region. His theory is that chronic appendicitis causes an abnormally irritable condition of the vagus nerve, and this vagotonia forms the soil on which disturbances of the colloidal equilibrium entail asthmatic attacks. He mentions a case of asthma in which the attacks were provoked by antipyrin. The patient bore this drug without disturbances after appendectomy.

### Revue Franç. de Gynécologie et d'Obstét., Paris

Jan. 10, 1923, 18, No. 1

Technic for Low Transperitoneal Cesarean Section. O. Beuttner.—p. 3.

\*Late Syphilis of the Uterus. J. Mouchotte.—p. 9.

**Tardy Syphilitic Disease of the Uterus.**—Mouchotte discusses in particular uterine hemorrhage for which syphilis is responsible. Metrorrhagia without any signs of a gynecologic affection should be treated for syphilis, even with a negative Wassermann reaction. He wasted considerable time on other measures in a case described before he applied specific treatment and cured his patient, a woman aged 30. Franceschini warns that the cases of rapidly fatal uterine hemorrhages without known cause were probably all the result of syphilitic disease of the uterus.

### Schweizerische medizinische Wochenschrift, Basel

Jan. 11, 1923, 53, No. 2

Air Embolism from Criminal Abortion. T. Wyder.—p. 29.

\*The Retroflexion Question. H. Meyer-Rüegg.—p. 34.

Research on Coagulation of Blood. A. Fonio.—p. 36. Cont'd.

Severe Injury During Manual Evacuation of Abortion. L. Racm-Boesch.—p. 41.

**Retroflexion of the Uterus.**—Meyer-Rüegg believes that women would be less affected by disturbances due to uterine anomalies if physicians would agree to consider retroflexion as merely one of the various positions of the uterus. The condition does not require treatment except (1) in certain cases of sterility without other findings; (2) if there is danger of incarceration in the fourth month of a pregnancy; (3) if the uterus lies on the levator ani or extends into the genital hiatus; (4) as a mode of suggestion when psychotherapy otherwise has failed.

### Policlinico, Rome

Jan. 8, 1923, 30, No. 2

\*Complement Fixation with Old Serums. G. Pansini.—p. 41.

\*Calcium Treatment of Vomiting and Diarrhea. R. Monteleone.—p. 48.

Pyelotomy for Calculus in Kidney. A. di Blasio.—p. 51.

\*Roentgen Treatment of Malaria. Committee Report.—p. 53.

**Complement Fixation with Old Serums.**—Pansini finds that serums giving a positive Wassermann reaction keep their power of complement fixation. Negative serums are liable to acquire this property. It seems that the direct anticomplementary action was not tested.

**Calcium in Treatment of Vomiting and Diarrhea in the Tuberculous.**—Monteleone publishes fourteen observations of the action of slow intravenous injections of 5 or 10 c.c. of a 10 per cent. solution of calcium chlorid. The results were very good.



**Roentgen-Ray Treatment of Malaria.**—The Italian official commission appointed by the government to study the question of roentgen-ray treatment of malaria here publishes its first report, edited by A. Busi. It states that this treatment is contraindicated in acute malaria. Large doses may bring on a severe attack with extensive invasion of the blood stream by the parasites. Chronic enlargement of the spleen frequently subsides under the irradiation. Some forms of malaria with infrequent attacks may be cured by roentgen treatment without drugs. The quinin-resistant forms should be treated with quinin again after the use of the roentgen rays.

Jan. 15, 1923, **30**, No. 3

- Experimental Research on Hydrocephalus. A. Chiasserini.—p. 73.  
\*Hematuria Due to Strongyloidosis. P. Fornara.—p. 75.  
\*Test for Thiosulphuric Acid. E. Pittarelli.—p. 80.  
Extrapyramidal Rigidity. R. Antoniotti.—p. 81.

**Hematuria from Strongyloidosis.**—Fornaro's patient, a previously healthy woman, suddenly developed pain, of the kidney colic type, and the urine contained blood, albumin and numerous larvae resembling filaria. Larvae of *Strongyloides intestinalis* were found in the stools. His retrospective diagnosis was that the larvae entering the body had made their way to the lungs and thence to the heart, and then had been swept in the blood stream to the kidney. The urine was free from blood in five days. Under treatment with hexamethylenamin, clinical recovery was soon complete, although strongyloides larvae were still present in the stools a month later. He found thymol in large doses, 6 to 8 gm. daily, the most effective means for expelling this nematode. The larvae die in a few minutes in a 1:1,000 solution of thymol.

**Test for Thiosulphuric Acid in Organic Fluids.**—Pittarelli comments on the delicacy and reliability of the para-amidophenol test he describes, which reveals even traces of hypsulphurous or thiosulphuric acid in organic fluids. A few crystals of the para-amidophenol, which is a common photographic developer, are dissolved in the fluid under examination, and hydrochloric acid is added in the proportion of 1 c.c. to 40 or 50 c.c. of the fluid. Then a 10 per cent. solution of ferric chlorid is added, a drop at a time. In the presence of thiosulphuric acid the tint changes to orange and then to yellow. With hydrosulphuric acid (sulphureted hydrogen) the tint is red. The response is distinct with one part of  $H_2S_2O_3$  in 400,000 parts of water.

Jan. 22, 1923, **30**, No. 4

- Incision at Lowest Point for Empyema. D. Taddei.—p. 105.  
Epidemic Encephalitis with Parkinsonism. Lucherini.—p. 108.  
\*Experiences with Spinal Anesthesia. G. Ciaprini.—p. 111.

**Spinal Anesthesia.**—Ciaprini states that the anesthesia was complete in all but 27 of the 284 cases in which he applied it, and in these the stovain proved to be defective. No serious by-effects were ever observed, but pallor, vomiting, and slowing and weakening of the pulse were frequent. They all promptly subsided under injections of camphor or caffein. It was never necessary to inject the caffein or camphor into the spinal canal. In 11 cases there was retention of urine, but the catheter was not used, and the patients urinated spontaneously before the end of twenty-four hours. In 7 cases there were paresis, paralysis, incontinence, headache or backache, coming on a month or six weeks after the spinal anesthesia. In 5 there was rachialgia and in 2 paralysis of the legs, but all subsided within a few weeks. Local anesthesia was applied in another group of 105 cases. For operations on the kidneys and liver, the intraspinal anesthesia seems to be superior to other methods.

Jan. 29, 1923, **30**, No. 5

- \*Chronic Inflammation of Submaxillary Gland. G. Baggio.—p. 137.  
Primary Influenzal Mastoiditis. G. Bilancioni.—p. 140.  
Slow Breathing as Physiologic Aid in Repose Treatment of Pulmonary Tuberculosis. S. A. Knopf.—p. 142.

**Chronic Inflammation in Submaxillary Gland.**—The chronic fibrous inflammatory process in the young man was explained by the discovery of a scrap of grain in the submaxillary salivary gland.

Feb. 5, 1923, **30**, No. 6

- Causes of Error in Radiologic Urinary Diagnosis. Dondero.—p. 169.  
\*Cerebral Thrombosis with Tubal Pregnancy. G. Lavezzi.—p. 174.

- Fibroma in Round Ligament. G. Gaeta.—p. 177.  
Improved Technic for Darkfield Microscopy. Vanni.—p. 177.

**Cerebral Thrombosis as Complication of Ruptured Tubal Pregnancy.**—The severe internal hemorrhage was accompanied by coma persisting after the laparotomy. This persistence was explained by the thrombosis found in the centrum ovale region. It seemed to have developed almost at the same time as the tube had ruptured. Cerebral hemorrhage had been suggested by the unconsciousness, but had been apparently refuted by finding profuse intra-abdominal hemorrhage.

Jan. 15, 1923, **30**, Surgical Section No. 1

- Certain Anomalies in Plantar Aponeurosis. P. Barco.—p. 1.  
\*Sagging Liver. M. Fasano.—p. 6.  
\*Nonparasitic Cysts in the Liver. O. Margarucci.—p. 16. Conc'n.  
\*Recent Literature on Stomach Functioning. M. Ascoli.—p. 43.

**Sagging Liver.**—Fasano declares that many operations on the stomach and bowel attack merely the consequences of displacement of the liver, leaving the cause, the hepatoptosis, untouched. If the sagging liver had been restored to place, instead, these secondary affections of the stomach or bowel would have spontaneously corrected themselves in time. He describes a case in which the symptoms and roentgen findings indicated ulcer near the pylorus in the woman, aged 60. The whole harmlessly subsided after the liver had been restored to its normal place. The sagging of both liver and stomach had been evident, but the physicians consulted had assumed an ulcer in addition, to explain the severe clinical picture. In another woman, aged 48, the symptoms suggesting gastric ulcer were of four years' standing and the woman was very weak and emaciated. In both these cases the sagging stomach and liver were somewhat twisted, but were otherwise apparently normal. He cut the round ligament of the liver away from the abdominal wall and freed it up to the liver. He then drew it up to the ensiform process, and sutured it to the aponeurotic fascia. This lifted up the pylorus 6 cm. A few U stitches were taken also in the anterior margin of the liver and tied through the aponeurosis a little above the costal arch. In two other women, aged 51 and 46, the cecum was abnormally movable and distended, and a kink in the bowel was bound down by adhesions. After breaking up the adhesions, the sagging liver was restored to place. The assumption that the other disturbances were secondary to the visceroptosis and especially the hepatoptosis, was confirmed by the complete and permanent clinical recovery after hepatopepy with the round ligament. Fasano has had equal success in five other cases; suspending the liver corrected all the anomalies.

**Nonparasitic Cysts of the Liver.**—This is the conclusion of the article summarized on page 513. It has eight photomicrograms and nearly five pages of bibliography.

**The Pathologic Physiology of the Stomach.**—Ascoli reviews and compares modern views on the mechanism and functioning of the stomach. The contradictory phenomena observed in regard to pain in the stomach show that some of the factors involved are still a mystery. When the splanchnic nerves are blocked, the stomach is absolutely dead to pain from an operation, even although the vagus nerve is intact.

### Riforma Medica, Naples

Jan. 22, 1923, **39**, No. 4

- \*Trapezius in Early Diagnosis of Tuberculosis. G. Iafolla.—p. 73.  
\*Modification of Blood Groups. P. Mino.—p. 75.  
\*Causes of Error in Folin's Test for Creatinin. E. Pittarelli.—p. 78.  
Technic for Appendectomy. B. Matassa.—p. 80.  
Vasomotor Disturbances in Surgical Affections. E. Aievoli.—p. 80.  
Prophylaxis of Diphtheria. L. Torraca.—p. 82.

**Hypotrophy of the Trapezius as Early Sign of Pulmonary Tuberculosis.**—Iafolla asserts that Boeri called attention in 1906 to the importance of tenderness and hypotrophy of the trapezius muscle as a sign of incipient tuberculous disease of the lung. Many years later this sign was rediscovered by others, and hailed as instructive and reliable, an actual precursor of apicitis. Iafolla applied electric tests to the trapezius in these conditions, and found that the responses differed materially from normal. The charts given show that the muscle behaves as if fatigued or poisoned. The restriction of this to the trapezius alone suggests that the distur-



bance is a neurotrophic atrophy; this seems to be confirmed by the local tenderness which precedes or accompanies the hypotrophy.

**Unchangeability of Blood Groups.**—Mino's experience indicates that it is impossible to modify the iso-agglutinins and change blood grouping. He relates experiments with numerous patients and various drugs, all negative from this point of view.

**Causes of Error in Folin Test for Creatinin.**—Pittarelli declares that Folin's original method is entirely unreliable, and that no technic is known to date for a practical and accurate test for creatinin in the urine.

Jan. 29, 1923, 39, No. 5

\*Slight Fever with Latent Pleurisy. U. Baccarani.—p. 97.

\*Wildbolz' Urine Reaction in Tuberculosis. M. Venuti.—p. 98.

\*Chronic Invagination of Colon. G. Pinardi.—p. 101.

Treatment of Alopecia. E. Savini.—p. 103.

The Hemoclastic Crisis and Intravenous Therapy. G. Martinico.—p. 103.

Splenomegaly in Malaria. E. Aievoli.—p. 104.

Therapeutic Application of Anaphylaxis. I. Iacono.—p. 106.

**Protracted Slight Fever.**—Baccarani has had several cases of a prolonged slight fever in women, between 18 and 35 years of age, without cough, or pain anywhere; the respiratory organs were apparently normal except on light superficial percussion at the base of the thorax. This revealed mild pleurisy with effusion, confirmed by puncture. The pleurisy would have escaped discovery without this light percussion. For about six months the patients had been complaining of loss of appetite and flesh. The evening temperature ranged from 37.2 to 37.9 C. (99-100 F.); in the morning it was normal, as also when the patients stayed in bed. This orthostatic febricula suggested tuberculosis, but the diagnosis was not confirmed until the patient entered the hospital for a thorough examination.

**Wildbolz Urine Reaction.**—Venuti reports extensive experience with the Wildbolz auto-urine reaction which has demonstrated, he says, that a negative reaction almost certainly excludes tuberculosis. A positive reaction cannot be accepted as reliable unless controlled by testing the patient's own urine, physiologic urine, and the urine of a tuberculous subject, also testing the patient's urine on a tuberculous subject. These control tests remove all possible doubt as to the specificity and reliability of the reaction.

**Chronic Invagination of the Colon in Adult.**—Pinardi relates that the disturbances were of six weeks' standing in the case described. The diagnosis had been mucomembranous enterocolitis, but the persistent disturbances compelled operative intervention which revealed an old invagination of the cecum and ascending colon into the transverse colon. It was impossible to reduce the invagination and, as haste was imperative, the small intestine was joined to the sigmoid loop. It was the intention to remove the injured portion at a second operation, but the man would not consent to further intervention, and has been in good health during the eight months since.

### Brazil-Medico, Rio de Janeiro

Jan. 13, 1923, 1, No. 2

\*Emotional Factor in Glaucoma. G. de Almeida.—p. 15.

Parasites of Trichomonas. A. Marques da Cunha and J. Muniz.—p. 19.

Brazilian Tick. New Species. H. de Beaurepaire Aragão.—p. 20.

The Rhodnius. New Species. A. Neiva and C. Pinto.—p. 20.

\*Medical Impressions of British Guiana. H. C. de Souza Araujo.—p. 24.

**Sudden Transient Glaucoma.**—De Almeida reports six cases in which the emotional stress of an operation for cataract seemed to have been a factor in the sudden increase in the eye tension. The acute glaucoma was transient, and had disappeared by the next day. One elderly patient had borne the operation on one eye calmly, but was extremely agitated at the operation on the other eye, a month later, and the glaucomatous condition developed at once. Another patient was a young man with traumatic cataract, and his dread and excitement at the operation were extreme. The operator must be on the alert to detect the first sign of augmented tension and apply the necessary measures without a moment's delay. To this he attributes the favorable outcome and the fact that he has never had expulsive hemorrhage after his numerous cataract operations.

**Medical Impressions of British Guiana.**—De Souza Araujo was on a scientific mission from the Oswaldo Cruz Institute. Since 1913 there has been a well organized infant welfare service with visiting nurses at Georgetown. In 1920 the infant mortality was 14.8 per cent. when it was 17.1 at Rio de Janeiro. With a population of 360,000, it is estimated that there are 800 lepers; 540 are segregated at the Cocorite asylum, founded in 1845. In 1921 the government bought an island 20 miles from Port of Spain, and has arranged there a large colony for lepers. There are eleven hospitals in all for British Guiana. If Brazil were supplied with hospitals in the same proportion to the population, it would have to have 917 hospitals for its 30,000,000 inhabitants. He adds that the authorities keep the importation and sale of liquor under control. The saloons must close at 7 p. m. at Port of Spain. The morbidity is the same as that of northern Brazil. In 1921 there were 10,000 cases of *bouba* recorded, mostly in children, and the neo-arsphenamin treatment was applied in the home. The disease was epidemic at Trinidad and Tobago.

Jan. 20, 1923, 1, No. 3

\*Malaria. A. Godoy and C. Pinto.—p. 29.

\*Roentgen Study of Digestion of Snakes. M. Rodolph.—p. 33.

The Physician and Eugenics. Renato Kehl.—p. 35.

**Malaria.**—This is an official report of a survey of malaria in the state of Campos, with suggestions for feasible prophylaxis.

**Roentgen Study of Digestion in Snakes.**—Rudolph reproduces a few roentgenograms of small animals in the digestive tract of snakes. He emphasizes the instructive data that can be thus learned in regard to ova and embryos in snakes, and other biologic problems.

Jan. 27, 1923, 1, No. 4

\*Three Cases of Blastomycosis. F. Terra.—p. 41.

\*Bacteriophagy. Costa Cruz.—p. 44.

Triatomas in Rio District. A. Neiva and C. Pinto.—p. 45.

\*Otosclerosis. S. C. da Silva.—p. 47. Concl'n No. 5.

**Blastomycosis.**—Terra reviews the two dozen cases that have been published in Brazil, and describes three cases recently treated in his service at Rio de Janeiro. In one of his three personal cases the man died, and blastomycetes were found in the lungs, spleen, kidneys and elsewhere. The affection was of three years' standing. In all the cases the diagnosis wavered between syphilis, tuberculosis and mycosis until the discovery of blastomycetes.

**Bacteriophagy.**—Costa Cruz' new experiments with d'Herelle's phenomenon confirm the facts observed by others but he interprets them differently. The pure bacteriophage does not lose its lysant power in contact with silver, even for weeks. Although this does not prove absolutely that the bacteriophage is a living virus, yet it harmonizes with this assumption better than with Bordet's view that the bacteriophage is enzymatic in nature. This question was discussed editorially in THE JOURNAL, Dec. 9, 1922, p. 2005.

**Otosclerosis.**—Cesar da Silva summarizes the latest works on this subject, and emphasizes the fact that different factors may be responsible in different cases. The various histologic changes, however, all blend into a uniform process in the course of their evolution.

Feb. 3, 1923, 1, No. 5

\*Tube-Casts in the Urine. H. L. and Renato de Souza Lopes.—p. 55.

Research on the Blastocystis. H. de Beaurepaire Aragão.—p. 58.

Toxicity of Chenopodium. Areobaldo Lellis.—p. 63.

**Tube-Casts in Urine.**—When hyaline tube-casts are masked by mucus, de Souza Lopes adds a small quantity of a saturated solution of sodium chlorid. This not only releases the casts from the mucus but induces retraction of the hyaline substance by an endosmotic current. The urine is set aside with some antiseptic for twelve or twenty-four hours to settle. Centrifugation does not answer the purpose so well.

### Semana Médica, Buenos Aires

Dec. 28, 1922, 2, No. 52. Pasteur Number

\*The Glory of Pasteur. C. Richet.—p. 1326.

The Philosophic Legacy of Pasteur. E. Melchor de Vogué.—p. 1328.

Reminiscences of Pasteur. Jules Simon.—p. 1334.

Address on Twenty-Fifth Anniversary of Pasteur Institute. Roux.—p. 1336.



- \*Influenza in 1921. A. Olivera.—p. 1348.  
\*Hydatid Cysts of the Orbit. Paulina Satanowsky.—p. 1349.  
\*Nitrous Oxid Analgesia in Labor. F. R. Pasman.—p. 1355.  
\*Glycemia in the Pregnant. F. A. Deluca.—p. 1361.

**The Glory of Pasteur.**—The French Academy offered a prize in 1914 for the best poem on this subject; it was awarded to Prof. Charles Richet of Paris for the poem which is here reproduced in French. It fills two two-column pages.

**Nitrous Oxid Analgesia in Labor.**—Pasman reports five cases; he quotes the women's own description of the effect of the anesthesia, and emphasizes the lack of toxic action on mother or child, and the almost complete analgesia.

**Glycemia in the Pregnant.**—Deluca does not admit that the glycogen producing function of the liver is inadequate in pregnancy, as a rule. The sugar content of the blood and of the urine is not a reliable index of the functioning of an organ so complex as the liver.

Jan. 4, 1923, 1, No. 1

- Program and Aims of Course on Operative Medicine. Zorraquin.—p. 2.  
\*Rickets. Juan P. Garrahan.—p. 8.  
\*The Thermo-Injector. L. Samengo.—p. 17.  
Case of Scleroderma with Hemorrhagic Tendency. Segura.—p. 20.  
\*Tuberculosis and Pregnancy. F. Etcheverry Boneo.—p. 24.  
\*The Liver in Pregnancy. Rafael Mestre.—p. 28.  
\*Physiologic Tests in the Insane. A. M. Sierra.—p. 31.  
\*Ocular Complications of Erythema Nodosum. P. Satanowsky.—p. 33.

**Rickets.**—Garrahan gives illustrations of several extreme cases, and discusses the present status of knowledge as to its etiology. Treatment must be based on air and sunlight, a well balanced diet, tonics, treatment of inherited taints, and means to promote fixation of calcium. The chief difficulty is to convince the family of the advantages of systematic heliotherapy for children, with or predisposed to rachitis. He protests against allowing children with pronounced rachitic deformity to walk or even stand. A hard bed should be used if there is any tendency to curvature of the spine. While the children are kept in bed, massage, tepid brine baths and rubbing with a coarse towel are useful. Rest should not be kept up after improvement is evident, but the exercise should be closely supervised to avoid excess. A 0.01 per cent. solution of phosphorus in cod liver oil is the most effectual method yet known to promote fixation of calcium.

**The Thermo-Injector.**—This is Samengo's name for his syringe with electric control which allows injection of a fluid at a given temperature—actually boiling water—without loss of heat or burning the hands. He has applied the Porter boiling water local treatment of exophthalmic goiter in six cases with excellent results. In two cases, previous Porter treatment with an ordinary syringe had failed of effect.

**Tuberculosis and Pregnancy.**—Of thirty tuberculous women supervised through a pregnancy and since, nine died, and the disease has progressed in two; this group of eleven were all in the third stage of tuberculosis. The disease remained stationary or materially improved in all the others. No ill effects from pregnancy were observed in any of them. When tuberculous women become pregnant or pregnant women become tuberculous, treatment should be applied as under other conditions, and with almost as good an outlook. All depends on the stage of the disease, the general condition, and the promptness with which treatment is begun. The premonitory and early signs and symptoms of tuberculosis are too often assumed to be toxic or reflex manifestations from the pregnancy itself. The subfebrile temperature, lassitude, pains in the shoulder, tachycardia and similar slight symptoms are overlooked until the tuberculosis has an irreparable hold on the lung.

**The Liver in Pregnancy.**—Mestre found the hemoclastic crisis pronounced in 40 per cent. of fifty women in the last three months of pregnancy. The Roch test was positive in 30 per cent. and the two tests were concordant in 64 per cent. The Roch test is with ingestion of methylene blue.

**Physiologic Tests in the Insane.**—Sierra reports the findings in 100 insane persons tested with the Löwi, Goetsch, Woodbury and Asoli drug tests and the Sergent and Marañon physical tests. No regular connection could be discovered between them and the mental disease. His findings demon-

strate, however, that the Goetsch epinephrin test is not specific for hyperthyroidism.

**Ocular Complications of Erythema Nodosum.**—Satanowsky summarizes from the literature instances of ocular lesions accompanying skin affections, and especially erythema nodosum. Many of these patients were unmistakably tuberculous, and Foerster accepts a tuberculous origin when no other cause is manifest. One case has been reported with pains in joints and positive Wassermann reaction, in which the erythema nodosum and all the symptoms promptly subsided under mercurial treatment. Other cases have been reported with a similar course and prompt recovery under sodium salicylate. She reports the case of a woman, aged 36, who had been healthy until she developed exophthalmic goiter at 32. It improved materially under systematic thyroid and roentgen treatment. Recently patches of erythema nodosum developed on the legs and a red patch appeared in the left cornea. The connection with the erythema nodosum was evident. The erythema lasted for two and a half months and the episcleritis for a month and a half. Treatment was with twenty daily intravenous injections of about 0.35 gm. of sodium salicylate, although at the time there was nothing to suggest rheumatism.

### Deutsche Zeitschrift für Chirurgie, Leipzig

November, 1922, 176, No. 4. L. Heidenhain Number

- \*Malformation of Intestine. K. Braeunig.—p. 227.  
\*Roentgen-Ray Treatment of Exophthalmic Goiter. C. Fried.—p. 254.  
\*Action of Roentgen Rays on Inflammation. C. Kemp.—p. 272.  
\*Gangrenous Femoral Hernia. A. Becker.—p. 281.

**Malformation of the Intestines.**—Braeunig's attention was attracted to developmental anomalies in the bowel by a case of invagination of the cecum in the colon down to the sigmoid flexure. Six cases are described, and the embryonal factors discussed.

**Roentgen Treatment of Exophthalmic Goiter.**—Fried has reexamined regularly every month thirteen patients with exophthalmic goiter since they were apparently cured by roentgen treatment. Both thyroid and thymus had been exposed to the rays, the dose being 80 and 91 per cent. of the erythema dose, with zinc filter. The exposure was repeated after an interval of two to six months. In one case a third exposure was given, and in three only a single exposure was made. The hemoglobin percentage always increased. No drugs were given, but out-door life was considered an essential element in the treatment. The women were all out-patients. Subjective improvement was noted first, but the objective signs soon followed. The exophthalmos seems to have subsided in all but one case; but in nearly all there is still a tendency to vasomotor instability and excitement, so that the patients cannot be regarded as fully recovered.

**Roentgen-Ray Treatment of Subacute Inflammatory Processes.**—Kemp witnessed the healing under roentgen treatment of circumscribed peritoneal suppurative processes, either of appendicitic origin or consecutive to abortion. Furuncles in the axilla also subsided under roentgen exposures after a small incision. Leg ulcers, long rebellious to other measures, cleared up in forty-eight hours. Pneumonia was also favorably influenced in several cases which seemed to suggest subacute or chronic suppuration. The subjective benefit was always pronounced. The turn for the better was particularly prompt in two cases described in detail. He exposed always a single large field, and warns against cross-fire exposures, for fear of the effect on the general health. He used from 20 to 40 per cent. of the erythema dose.

**Treatment of Gangrenous Femoral Hernia.**—Becker relates that the interval before operation in 36 cases in the last ten years ranged from one to eight days; one of the patients with the longest interval recovered. Unless the entire incarcerated loop can be drawn through an incision above, it is dangerous to attempt a radical operation if there is the slightest suspicion of infection of the fluid in the hernia. The immediate radical operation was attempted only in 11 of the 36 cases; in 4 a phlegmon developed in the abdominal wall and the patients succumbed to pyemia from thrombosis. The mortality was 26.5 per cent. if 2 moribund cases are excluded; 30.4 per cent. including them. This high death



rate demonstrates anew that practitioners do not call in the surgeon until too late. There need be no mortality if conditions could be corrected within a few hours. Thirteen were saved in the 17 cases in which the gangrenous loop was resected at the hernial opening. In 5 cases the gangrene was sutured-in, with 2 deaths. Both patients recovered in the 2 cases in which the gangrenous loop was brought outside to serve as an artificial anus. The suturing-in method, associated with entero-anastomosis, was possible only with a small hernia or when the gangrene was restricted to the constricting ring. In these circumstances the method proved very valuable.

### Klinische Wochenschrift, Berlin

Jan. 8, 1923, 2, No. 2

- Lowering of the Living Standards in Germany. W. His.—p. 53.  
German Physicians at the Sickbed of the German People. Dippe.—p. 56.  
German Children in Need. Krautwig.—p. 58.  
Metabolism of the Food. F. Knoop.—p. 60.  
\*Histology of Edema. W. Hülse.—p. 63.  
\*Excretion of Uric Acid in Gout. Thannhauser and Hemke.—p. 65.  
\*Trophic Function of the Sympathetic. Brüning.—p. 67.  
\*Blood Changes in Oxygen Breathing. Full and Friedrich.—p. 69.  
Phrenicotomy in Pulmonary Tuberculosis. A. V. Frisch.—p. 72.  
\*Seasons and Weight of the Newly Born. Hellmuth and Wnorowski.—p. 75.  
Action of Treatment on Blood Calcium in Spasmophilia. Blühdorn and Thyssen.—p. 78.  
Etiology of Impetigo Nephritis. R. Deussing.—p. 79.  
Comment on "Functional Thyroid Tests." G. Deusch.—p. 80. Reply. Hellwig.—p. 80.  
Proof of Myogenous Stimulus Formation in Vertebrate Hearts. L. Haberlandt.—p. 81.  
Cascin Autolysis. Ehrenberg and Loewenthal.—p. 81.  
Action of Glucose on Vessels. Handovsky and E. Meyer.—p. 82.  
Traumatic Argyll Robertson Pupil. R. Botzian.—p. 82.  
Surgical Treatment of Congenital Deformities. J. R. Gossmann.—p. 83.  
Recent Literature on Creatin-Creatinin Metabolism. Bürger.—p. 87. Concl'n.

**Histology of Edema.**—Hülse points out that in normal conditions there are no gaps in the tissues. The blood and lymph capillaries are separated by cells and intercellular substance and do not communicate by canals containing "tissue fluid." The exchange of substances does not occur between blood and a free tissue fluid, but between blood and the colloidal system of the living tissue. Such movements of substances are regulated more by the surface tension than by diffusion. The connective tissue is always swollen in the stage of pre-edema. The endothelium of the capillaries swells before the formation of free fluid in the tissues. The inhibition of resorption which this entails may be the cause of edema. It is probable that the lymph capillaries are affected in a similar way. During the formation of edema, the thoracic duct and the cisterna chyli are almost empty, while they are overfilled during the period of resorption of edemas. Formation of acids may be either the cause or the result of edema.

**Excretion of Uric Acid in Gout.**—Thannhauser and Hemke do not lay as much stress on the maximal concentration of uric acid as on the comparison of the concentration in the urine with the amount present at the same time in the blood. The relative proportions are changed in constitutional gout.

**Trophic Function of Sympathetic Nerves.**—Brüning contends that trophic ulcers are due to augmented tonus of the sympathetic nervous system. They develop only some time after the injury, not until a neuroma has formed or pressure from the cicatrix begins to act. Periarterial sympathectomy lowers the tonus also proximal to the field of operation. In a case of injury of the cauda equina, not only the ulcer on the right heel, but also a large bedsore on the right buttock healed after periarterial sympathectomy on the femoral artery. Excessive sympathicotonia leads to degeneration and even necrosis. Reduction of the sympathicotonia is followed by regeneration and even hypertrophy. The way to produce artificially a gastric ulcer would be to augment the sympathicotonia.

**Blood Changes in Oxygen Breathing.**—Full and von Friedrich found in experiments with breathing of oxygen with a pressure of 10 to 18 cm. of water, that the blood became diluted. At the same time the blood chlorids declined. In some patients with hypertension a marked decrease in the blood pressure occurred.

**Weight of the Newly Born and the Seasons.**—Hellmuth and Wnorowski show by their extensive material that the differences in the weight of the newly born at different seasons do not exceed the limits required by the theory of statistics.

### Medizinische Klinik, Berlin

Jan. 7, 1923, 19, No. 1

- \*Puerperal Infection. E. Bumm.—p. 1.  
\*Postoperative Secretion of Cerebrospinal Fluid. H. Schloffer.—p. 4.  
Focal Symptoms with Lesion of Left Parietal Lobe. O. Pötzl.—p. 7.  
\*Poisoning by Carbon Monoxid. R. Jaksch-Wartenhorst.—p. 11.  
Eclampsia.—p. 14. Cont'd.  
\*Changes of Refraction in Diabetes. A. Elschmig.—p. 17.  
\*Prevention of Congenital Syphilis. G. A. Wagner.—p. 18.  
Connection Between Trauma and Tuberculosis. Flesch-Thebesius.—p. 21. Concl'n No. 2, p. 50.  
\*Extrapulmonary Infection in Tuberculosis. Ghon and Wertheimer.—p. 26.  
Review on Pediatrics. Rietschel.—p. 28.

**Chemotherapy and Serotherapy in Puerperal Infection.**—Bumm objects to the reports on treatment of puerperal infection that they do not make enough distinction between the different conditions, which have in themselves a very good or very bad prognosis. The determination of prognosis is of course difficult. The almost exclusive presence of bacilli (rods) in the lochia speaks for simple putrefaction of the retained secretions, while streptococci are found almost exclusively in the more virulent infections. Ruge determines the virulence and at the same time the humoral resistance by observation of the growth of the cocci in the serum of the patient. Local antiseptics cannot reach all the germs and may do harm. It should be abandoned. It is quite common that the first chill occurs after irrigating the vagina. The immune serums and general chemotherapy are of use only if applied early. Seventy-six per cent. of the fevers are due to retention of lochia, and heal without specific treatment. The severe cases should be given large doses of antistreptococcus serum, some chemotherapeutic preparations, light baths to increase the temperature of the body, hot applications (no ice), alcohol and ergot. The results are very good (85 per cent. localized) if the treatment begins early.

**Secretion of Fluid After Extirpation of Brain Tumor.**—Schloffer's patient (large epithelioma of the parietal lobe) had to be treated by lumbar puncture for nine months after the extirpation of the tumor, until she recovered. This shows that the disproportion between the formation and resorption of cerebrospinal fluid may last for a very long time after the cause has been removed.

**Poisoning by Carbon Monoxid.**—Jaksch-Wartenhorst describes three cases of poisoning by carbon monoxid. All three had very marked cerebral symptoms (spasms, psychic disturbances, Cheyne-Stokes breathing) and one a cerebral hemorrhage two days after the poisoning.

**Changes of Refraction in Diabetes.**—Elschnig reviews briefly the theories on the origin of sudden myopia or hypermetropia in diabetes. He publishes a case in which one lens had been removed for cataract. The diabetic hypermetropia occurred only in the other eye, which suggests that the lens was responsible for the condition, though there were no clinical signs of a change in the lens.

**Prevention of Congenital Syphilis.**—Wagner considers the Wassermann reaction as specific only in the first half of pregnancy. The "antenatal" treatment, if instituted early, gives very good results. The previous treatment (before the pregnancy started) is not sufficient. The blood should be tested in every pregnant woman as early as possible.

**Primary Extrapulmonary Infection in Tuberculosis of Children.**—Ghon and Wertheimer found among 395 necropsies on tuberculous children only six cases with a certain extrapulmonary primary infection (four intestinal, one nose and one middle ear), and three cases in which the primary lesion could not be determined.

Jan. 14, 1923, 19, No. 2

- \*Treatment of Diabetes. C. von Noorden.—p. 41.  
Congenital and Acquired Syphilis in Children. J. Fabry.—p. 43.  
Tuberculin Reaction. H. Gerhartz.—p. 45.  
Case of Paratyphoid B. Kraus and Reisinger.—p. 45.  
Collective Inquiry on Eclampsia.—p. 47. Cont'n.  
Treatment of Exostosis on Heel-Bone. Taendler.—p. 56.



Action of Some Emulsions of Salts. P. Saxl.—p. 57.  
Diseases of Bladder. E. Portner.—p. 59.  
Recent Literature on Rhinology. Haenlein.—p. 61.

**Treatment of Diabetes.**—Von Noorden points to the importance of heredity for the prophylaxis of diabetes. Children of diabetics should avoid sweets and too much protein. The tendency to consult a specialist causes many overlooked cases of diabetes—especially in dermatology and neurology. Almost every diabetes starts as alimentary glycosuria. Alimentary glycosuria is always a sign of real diabetes. The practitioner should leave the determination of carbohydrate tolerance to a specialist, and take the treatment over after two or three weeks, and regulate it according to the advice of the specialist. In beginning coma, no food should be given except 150-200 gm. of brandy in a day. Alkali should be given intravenously or in enemata.

### Wiener klinische Wochenschrift, Vienna

Jan. 11, 1923, 36, No. 2

Treatment of Eclampsia. P. Werner.—p. 21.  
\*Influence of the Thyroid on Blood Production. G. Holler.—p. 23.  
Normal Histology of Stomach. Paschik and Orator.—p. 26.  
Benefit from Vaccine Therapy of Affections of Auditory Nerve. R. Leidler and E. Stransky.—p. 28.  
Retroperitoneal Tumors. H. Kunz.—p. 28.  
Technic and Indications for Diathermia. R. Grünbaum.—p. 29.  
The Campaign Against Tuberculosis. A. Götzl.—p. 30.

**The Thyroid and Formation of Erythrocytes.**—In patients with hyperthyroidism Holler found that the average diameter of the erythrocytes was at the upper limits of normal or above. While there are only few polychromatophilic erythrocytes to be found with usual methods, vitally stained corpuscles are more frequent than in healthy persons (several tenths of 1 per cent.). The limits of resistance against osmotic influences are broader.

### Zeitschrift für klinische Medizin, Berlin

Jan. 27, 1923, 96, No. 1-3

Heinrich Quincke. G. von Bergmann.—p. 1.  
\*Motility, Nerves and Pathology of the Bile Ducts. K. Westphal.—p. 22; p. 52; p. 95.  
\*Etiology of Hypertension. W. Weitz.—p. 151.  
\*Blood Platelets and Thromboplasts. R. Stahl.—p. 182.  
\*Heart in Sportsmen. H. Herxheimer.—p. 218.  
\*Pulse Changes as Heart Function Test. P. Holzer and E. Schilling.—p. 236.  
\*Proteolytic Ferment in Grippal Pneumonia. O. Abraham.—p. 245.  
\*Blood Sugar and Alimentary Glycemia in Old People. A. Punschel.—p. 253.

**Action of Nerves on the Bile Ducts.**—Westphal observed with roentgen rays in many cases of gallstone colic a marked restriction of the movements of the right side of the diaphragm (a visceromotor reflex). An analogous sensory reflex is the sensitiveness of the right phrenic nerve in the neck which was present in many cases (15 among 25), similar to that found by Costa and Troisier in Weil's disease. He found in experiments on animals that the sphincter musculature extending to the duodenal papilla shares also in expulsion of the bile. Its function resembles that of the antrum and sphincter of the pylorus. Slight electric and pharmacologic irritation of the pneumogastric causes a contraction of the gallbladder and peristalsis of the sphincter. Strong irritation causes a general increase of tonus and retention of the bile. Irritation of the sympathetic or paralysis of the pneumogastric decreases tonus and inhibits motility. The evacuation of the bile is inhibited by hyperfunction of the muscles in the duodenal portion, by hypofunction of the muscles of the ducts and bladder, and as a reflex. He believes that the basis of pathologic conditions is a neurosis, which may appear either as an increased motility (for instance, in cholelithiasis of pregnancy), in other cases as a decreased motility. A survey of literature is given.

**Etiology of Hypertension.**—Weitz made careful investigations among the families of eighty-two persons suffering from hypertension. He found that a larger percentage of the parents had died from apoplexy or heart disease than in other families. Also that death occurred earlier in parents of younger patients than in the parents of older persons with hypertension. In his material, always one parent, at least, suffered from hypertension. Fully 50 per cent. of the brothers

or sisters of the patients by the time the age of 55 was reached were suffering from or had died from hypertension. It seems that the condition is inherited as a dominant character. He did not find any indications suggesting exogenous factors like nicotine or alcohol. Such factors and emotions seem to injure the heart and make the existing hypertension more manifest. There was no relation of the general habitus to the disease.

**Blood Platelets and Thromboplasts.**—Stahl examined the number and morphology of blood platelets in the healthy and 125 sick persons. He emphasizes the importance of platelets with basophilic protoplasm; he considers them as young forms and calls them thromboplasts. Typhoid, Werlhof's disease (hemorrhagic purpura) and the hemorrhagic stage of pernicious anemia are good instances for study of the changes of platelets.

**The Heart in Athletes.**—Herxheimer examined 171 prominent sportsmen. The heart averaged only a little larger than in other persons. The largest hearts were found in ski skaters. The boxers had smaller hearts than average persons, and relatively the largest right ventricle. The ski skaters had a larger left ventricle.

**Pulse Changes as Heart Function Test.**—Holzer and Schilling confirmed the prognostic value of the difference between the heart beat and the radial pulse. When both figures become identical under the influence of treatment, the prognosis is good; especially if work does not cause a difference.

**Proteolytic Ferment in Sputum and Urine in Influenzal Pneumonia.**—Abraham examined the sputum and urine in eleven cases of grippal pneumonia. The proteolytic ferment did not appear in the sputum before the crisis or lysis, and its action corresponded to the number of polymorphonuclears present. The urine did not give parallel results, and even normal urine may contain a proteolytic ferment.

**Blood Sugar and Alimentary Glycemia in Old People.**—Punschel found that the elderly have a higher glycemia than the young (0.106 per cent. between 58 and 70 years, and 0.110 per cent. between 70 and 91 years, against 0.094 in younger persons). The blood sugar level after ingestion of 20 gm. of glucose is higher in older persons, and remains high longer than in young people. No glycosuria occurred in spite of this.

### Zentralblatt für Chirurgie, Leipzig

Jan. 20, 1923, 50, No. 3

Small Circular Instead of Linear Openings for Drainage of Wounds. Schubert.—p. 82.  
\*Resection Versus Gastro-Enterostomy. F. v. d. Hütten.—p. 84.  
\*Experiences with Operations for Goiter. K. Urban.—p. 86.  
Nongonorrheal Epididymitis. V. Winkler.—p. 89.  
Modified Operation for Hallux Valgus. S. Keszly.—p. 91.  
Extra-Articular Means for Ankylosing of Hip Joint. Schmidt.—p. 94.

**Resection or Gastro-Enterostomy in Gastric Ulcer.**—In recent years, von den Hütten states, radical operative methods in gastric ulcer have been almost universally demanded, but of late he has noted that gastro-enterostomy has again come more into favor. Excision produces in place of the old channel an easily injured scar tissue, in which the blood supply cannot be as good as it was in the original lesser curvature. He has had again and again surprisingly good results from simple posterior gastro-enterostomy without exclusion of the pylorus. He therefore prefers gastro-enterostomy even for hard ulcers and those distant from the pylorus, because he is able to cure by this relatively safe intervention, and does not need to resort to resection with its much higher mortality. The only absolute indication for resection he finds is evidence of malignant disease.

**Twenty-Two Years of Goiter Surgery.**—Urban surveys his 2,500 goiter operations under local, or regional, anesthesia. The last fifteen years he employed as an anesthetic a 0.5 per cent. solution of procain for adults, with a preparatory injection of 0.01 gm. of morphin, and a 0.25 per cent. solution of procain for children. The normal dosage for adults, was 0.5 gm. He had no serious mishaps with this dosage. The addition of epinephrin caused rather serious hemorrhages and was discarded without lessening the anesthetic effect. He injects the anesthetic quite extensively through the operative



area, and endeavors to instill it into the underlying tissues of the lower pole of the goiter. He gave up deep instillations at the upper pole on account of the danger of blocking the vagus nerve. For children and very nervous patients he combined the local anesthesia with a few whiffs of ether. He used the Kocher so-called collar incision. If thyroid insufficiency was feared, he implanted goiter tissue from young persons, at first in the bone marrow or the spleen, but later, subcutaneously, beneath the mamma. He performed more than 100 such implantations. By these precautions, not a single case of myxedema occurred. He leaves a remnant of the thyroid at the mouth of the inferior thyroid artery, and proceeds very cautiously with the enucleation of the lower pole of the gland, since very often the inferior parathyroid lies embedded here in the loose connective tissue and, in adults especially, can scarcely be distinguished from fat. In every case of strumectomy, for a week at least (and in exophthalmic goiter, for several weeks) after the operation, the patients received only a milk and vegetable diet. This was done by reason of the fact that postoperative tetany is said to occur much less frequently in herbivora than in carnivora. He did not have a single instance of tetany in his whole series of 2,500 cases, whereas Kocher reports 0.5 per cent. tetany in his last thousand cases. The total number of cases ending fatally was 20, a mortality of 0.8 per cent. Cures or nearly complete cures were effected in about 80 per cent. of the 200 cases of exophthalmic goiter. Recurrence of nonmalignant goiter required a second operation in twenty-eight cases. In malignant goiter (sarcoma, carcinoma) no patient survived longer than one year.

Jan. 27, 1923, 50, No. 4

Modified Operation for Ectopia Vesicae. J. H. Zaaijer.—p. 114.

Early Surgical Treatment in Acute Poliomyelitis. Peiser.—p. 116.

\*The Albee Operation in Tuberculous Spondylitis. König.—p. 119.

\*Access for Periappendicular Abscess. Lükö.—p. 122.

Extra-Oral Anesthesia of the Mandibular Nerve. Chrapek.—p. 124.

Simplified Drip Irrigation After Prostatectomy. Cordua.—p. 126.

\*Double Mask for Ether Narcosis. Jatrou and Wessely.—p. 127.

**The Albee Inlay Graft in Pott's Disease.**—König reports the results of the Albee operation in forty-six cases of tuberculous spondylitis. He designates 30 per cent. of the cases as failures; in about 70 per cent. of the cases the results of the operation were good, and in some instances extremely favorable.

**Lumbar Incision in Periappendicular Abscess.**—Lükö recommends the lumbar incision in most cases of periappendicular abscess. The evacuation of pus is complete, and the period of recovery is shortened. The lumbar incision is on the line of the Bergmann-Israel kidney incision, but he begins the incision 4 to 5 cm. lower down. After dividing the musculature and the fascia lumbodorsalis, the palpating finger along the cecum locates the abscess cavity, which is opened by blunt dissection. The lumbar incision is indicated, Lükö holds, in every case when a tympanic percussion sound is heard over the abscess, and external examination makes it evident that the abscess can be reached from behind. The lumbar operation is contraindicated when palpation shows the abscess adherent to the anterior abdominal wall; also when the abscess inclines toward the true pelvis, as in this event a lumbar incision may injure the ureter.

**Double Mask for Ether Narcosis.**—The inside mask, which is covered with gauze, has a second much higher mask fitting tightly over it, which is likewise covered with gauze. On the second mask, the gauze is held in place by a metal ring with a spring. At the highest point of the outside mask an opening is made in the gauze, and either a small funnel is introduced to carry the anesthetic to the mask below, or the ether is poured a drop at a time directly on the inside mask. The amount of ether required is thus reduced one half, as the fumes do not evaporate so quickly in the enclosed space. No disagreeable features have been noted.

### Casopis Lekaruv Ceskych, Prague

Jan. 13, 1923, 62, No. 2

\*Bacteriophagy in Pyocyaneus Cultures. J. Cancik.—p. 25.

\*Treatment of Maxillary Sinus. V. Tesar.—p. 26.

\*Tarry Stools in Cholelithiasis. V. Vysin.—p. 30.

\*Tuberculosis of Lungs and Pregnancy. V. Müller.—p. 34.

Tubercle of Optic Disk and Choroid Tuberculosis. J. Janku.—p. 38.

Cont'd.

**Bacteriophagy in Pyocyaneus Cultures.**—Cancik observed in fresh and old cultures of *Bacillus pyocyaneus* two types of colonies: one of them was bluish green and on this silvery spots appeared within forty-eight hours. These spots grew until the place appeared empty. Another type of colonies remained slightly green and seemed to be resistant. The lytic agent did not influence other bacilli.

**Treatment of Purulent Inflammations of Maxillary Sinus.**—Tesar describes his method of operation.

**Tarry Stools in Cholelithiasis.**—Vysin describes a case of cholelithiasis after operation with extensive changes and adhesions of the gallbladder. Tarry stools during the attack led to the wrong diagnosis of an ulcer of the duodenum.

**Tuberculosis of Lungs and Pregnancy.**—Müller observed twenty-two pregnant tuberculous women. He finds that pregnancy has no unfavorable influence on tuberculosis. The use of forceps is advisable. He found in guinea-pigs a favorable influence of pregnancy on experimental tuberculosis.

### Hospitalstidende, Copenhagen

Jan. 17, 1923, 66, No. 3

\*Sugar Content of the Blood. K. M. Hansen.—p. 37.

\*Agglutinin Tests in Icelanders. S. Jonsson.—p. 45.

**The Sugar Content in Arterial and in Venous Blood.**—The charts from four persons show a rise in the sugar content of venous blood and blood from the ear after ingestion of 60 gm. of glucose. The curves diverge widely in normal subjects. Hansen tries to explain why, on the other hand, the two curves tend to run parallel in patients with polyarthritis and diabetes.

**Agglutinins in the Blood of Icelanders.**—Jonsson examined the blood for iso-agglutinins in 800 subjects at Reikjavik; neither age, complexion, health or sickness, or region seemed to have any influence.

Jan. 24, 1923, 66, No. 4

\*Roentgen Localization of Brain Tumors. A. Wimmer.—p. 53.

\*The Heart After Severe Physical Training. K. Secher.—p. 61.

**Roentgen Localization of Brain Tumors.**—The partly ossified brain tumor in Wimmer's case gave a clear roentgenogram, allowing a permanent cure by its safe removal. His patient was a woman, aged 42, with hemiplegia of gradual onset three months before.

**Size of Heart After Cessation of Active Physical Training.**—Secher tabulates the findings from twenty-two animals. His experiments confirm anew the remarkable power of adaptation of the heart to extra work and to return to normal conditions.

Jan. 31, 1923, 66, No. 5

\*Wassermann Test in the Tuberculous. H. Boas and C. With.—p. 69.

\*Decline in Weight of Heart After Epinephrin. K. Secher.—p. 90.

\*Total Acidity in Stomach. R. Ege.—p. 94. Conc'n No. 6, p. 101.

**The Wassermann Reaction in the Tuberculous.**—A positive reaction was obtained only in three of 1,343 cases of tuberculous skin affections. The response was always negative in 758 cases of surgical tuberculosis, and in 376 of pulmonary tuberculosis. The research was done at the official Serum Institute for Denmark.

**Subsidence of Heart Weight After Injection of Epinephrin.**—Secher has reported recently that hearts enlarged by physical training subside to normal again when the extra work is suspended. He here presents similar evidence of the adaptation of the heart to a transient chemical influence and its recovery thereafter. Rats were the animals used in these experiments.

**Determination of Total Gastric Acidity.**—Ege explains that the simplest method is to titrate the aspirated contents to the original reaction of the test meal. The best indicator for this with the Ewald test meal is the "brom-cresol-purple reagent." The figure thus obtained is a relative measure of the acid secreted by the stomach. He comments on the causes of error when phenolphthalein or other indicator is used.



Household science Wardell

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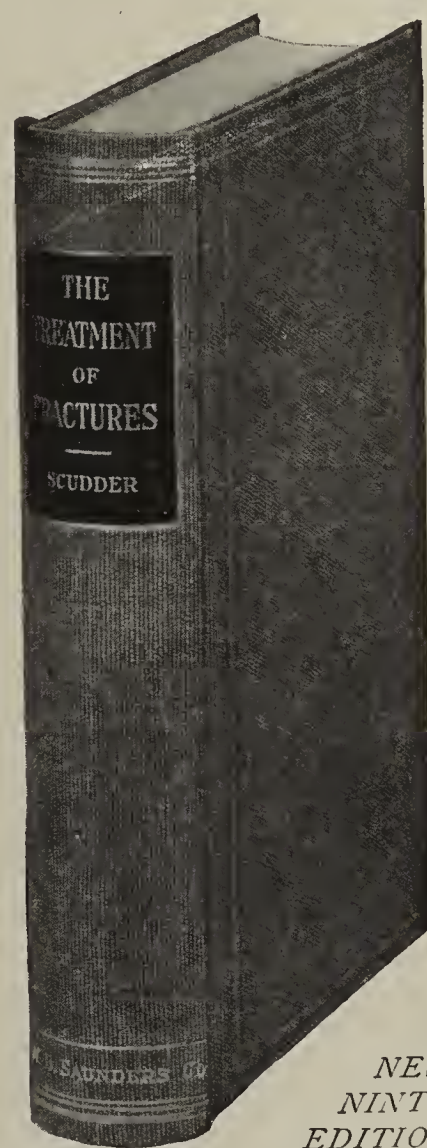
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Timothy (*Phleum pratense*), June to August, throughout the United States.



Ragweed (*Ambrosia elatior*), August to October, east of the Rocky Mountains.

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Orchard Grass (*Dactylis glomerata*), April to August, throughout the United States.



June Grass (Blue grass, *Poa pratensis*), May to September, throughout the United States.



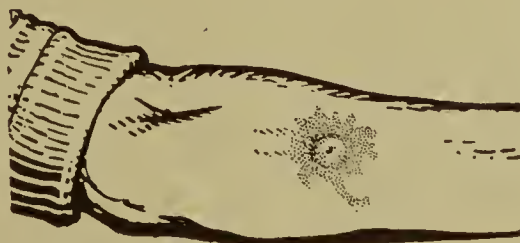
Redtop (*Agrostis palustris*), June to September, throughout the United States.



Sheep Sorrel (*Rumex acetosella*), May to July, throughout the United States.



Russian Thistle (*Salsola pestifer*), July to September, especially in Rocky Mountain and Pacific States.



Diagnostic Skin Test: Positive pollen reaction showing urticarial wheal and zone of redness.



Yellow Dock (*Rumex crispus*), May to July, throughout the United States.



The plants shown on this page are the most important factors in causing hay fever, at the season of year and location mentioned under each plant.



Johnson Grass (*Sorghum halepense*). June to October, particularly in Southern and Pacific States.



Spiny Amaranth (*Amaranthus spinosus*). June to September, in Southern, Central and Middle Western States.



Cocklebur (*Xanthium canadense*). July to September, throughout the United States.



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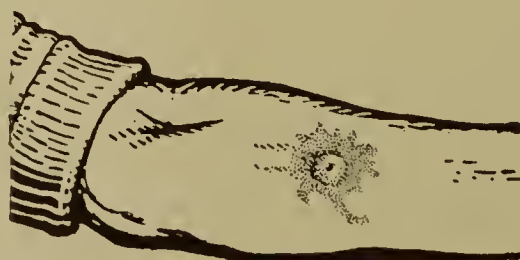
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Redroot Pigweed (*Amaranthus retroflexus*). July to September, indigenous in the Southwest.



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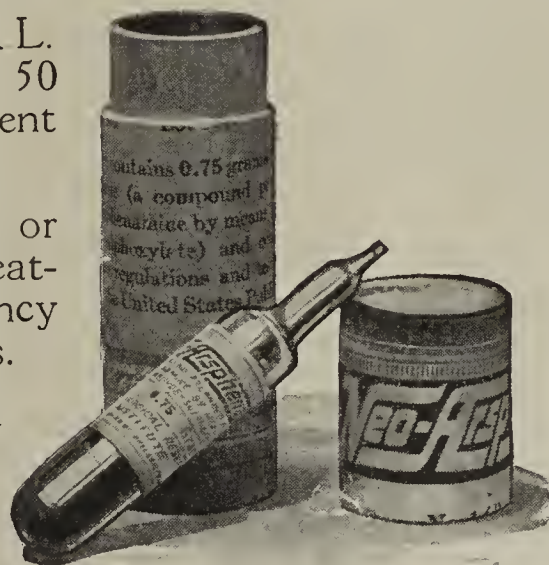


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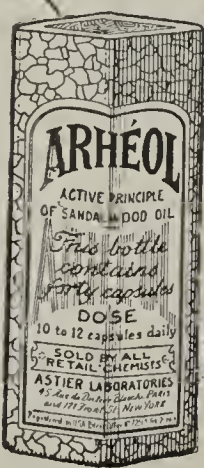
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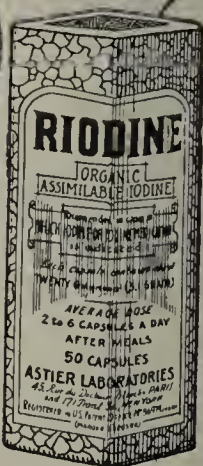
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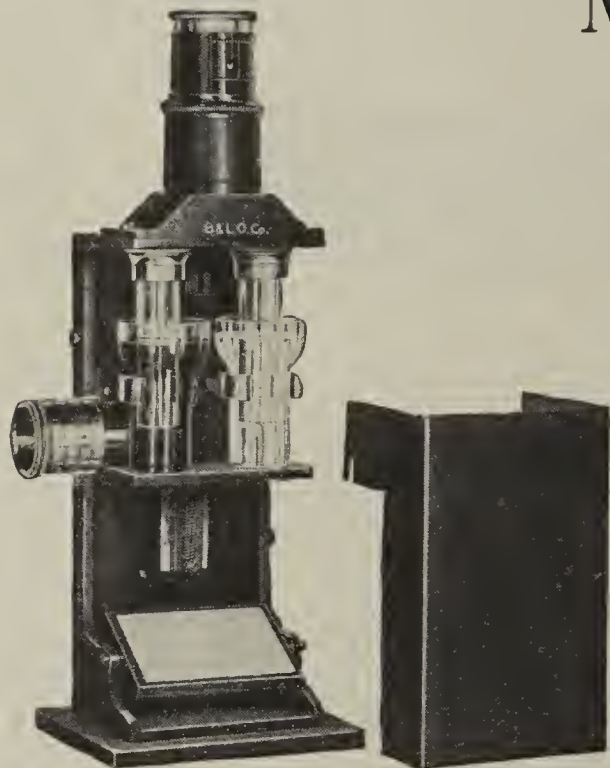
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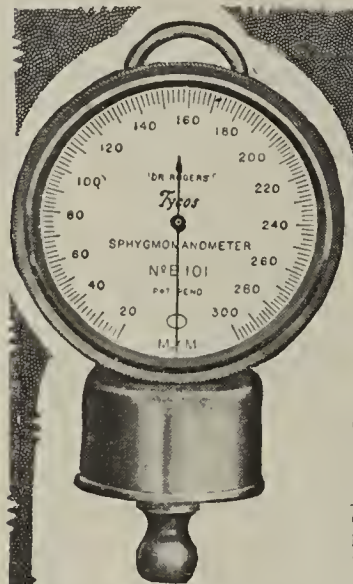
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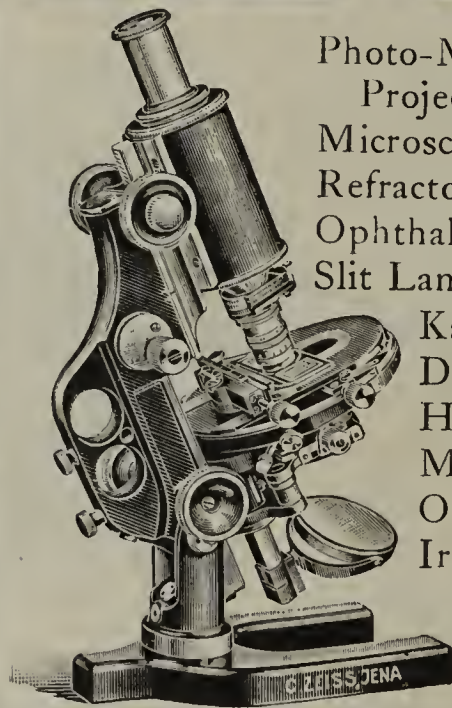


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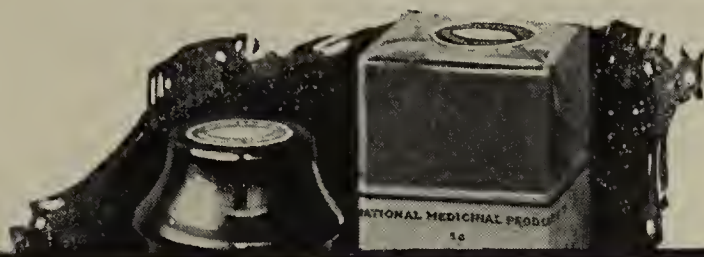


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The last word in convenience, safety and accuracy.  
Each Mulford Hypo-Unit contains one accurately-measured dose and is sterile and completely assembled, ready for instant use.

## Dosage

Prophylactic treatment, which gives best results, should begin 4 to 6 weeks before attack is due and 12 to 15 doses should be given, beginning with 12.5 pollen units, increasing gradually to 250 pollen units. When the specific pollen appears in the air the doses should be greatly reduced.

## How Supplied

TIMOTHY POLLEN EXTRACT (Spring) and RAGWEED POLLEN EXTRACT (Fall) are furnished as follows:

- 15-Dose Treatment, including 3 Intradermal Tests and 15 Hypo-Units (doses 1 to 15)
- 4-Syringe Package (A, B, C and D strengths)
- 1-Syringe Package (D, E or F strength)
- 5 cc Vial (D or E strength)
- 20 cc Vial (D strength)



For Diagnosis—Pollen Extracts of proper strength for the INTRADERMAL TEST and Dried Pollens for the CUTANEOUS TEST.

H. K. MULFORD COMPANY, PHILADELPHIA, U. S. A.

56196

# Mulford

THE PIONEER BIOLOGICAL LABORATORIES



## MILK—THE STAPLE FOOD



LACKING THE COW—  
THE GOAT SUPPLIES.

**THE DRY MILK COMPANY**

The problems attending the use of milk for sick, convalescent, invalid and infant feeding have been successfully solved by *Dryco*.

*Dryco* is powdered milk, produced by rapid drying process, which improves the digestibility of the milk solids, does not alter or destroy the vitamin content, raises the nutrient value and prevents variation and bacterial contamination.

*Dryco* is simply and easily prepared, palatable and more easily, quickly and completely digested and assimilated than fresh cow's milk.

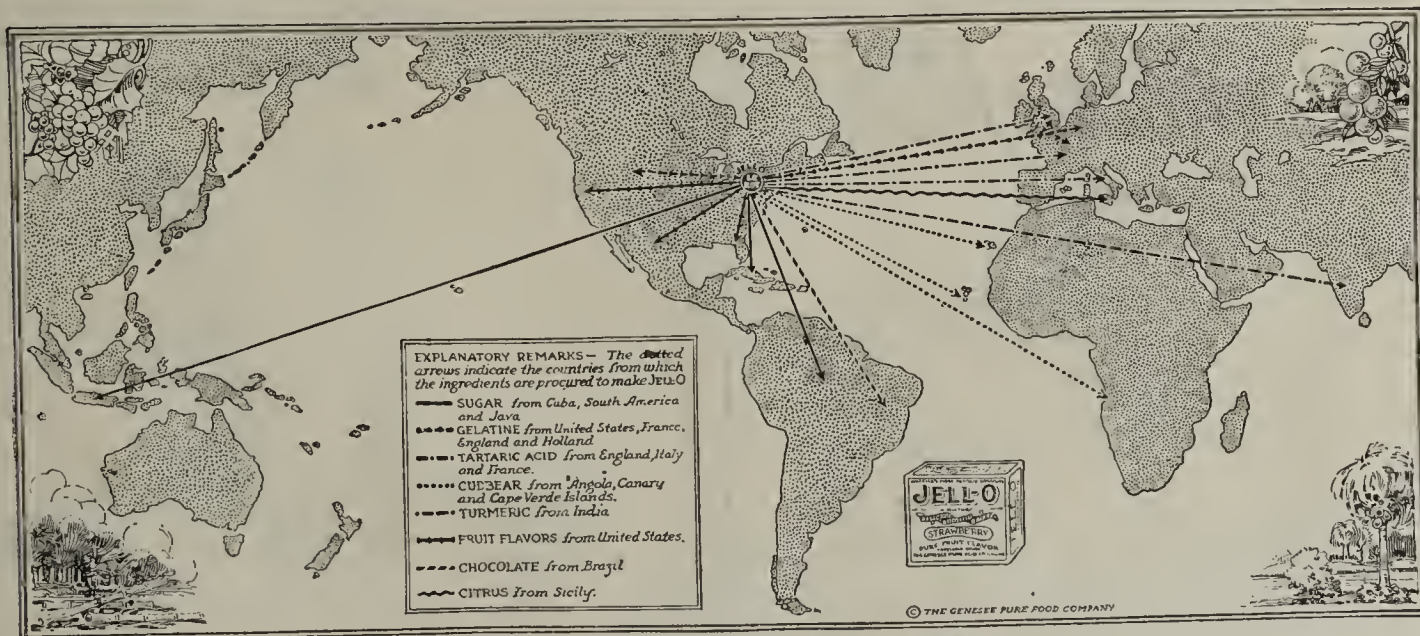
*Dryco* is prepared by an International Institution for the Study and Production of Pure Milk Products.

*Samples and literature on request*

**13-21 PARK ROW, NEW YORK**

An interesting and amusing booklet "The Doctor's Rubaiyat", free from advertising, will be sent to any physician on request.

## "America's Most Famous Dessert"



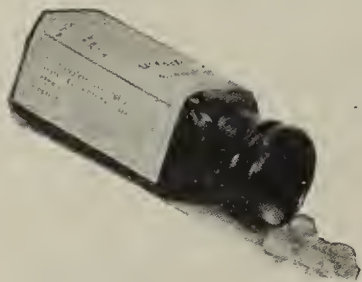
# JELL-O

Draws materials from five continents and from the islands of five seas. The United States, England, France, Italy, Holland, India, Brazil, Sicily, Angola, Canary Islands, Java, and Cape Verde Islands send their products to the Jell-O factory, where they are mixed and blended into "America's Most Famous Dessert." ☺ ☺ ☺ And from this factory to every State, to our Insular Possessions, and even to the Four Corners of the Earth JELL-O goes as an Ambassador of American Enterprise to the Courts of Good Living.

THE GENESEE PURE FOOD COMPANY, - - - - - Le Roy, N. Y.



## Thyroxin---the Active Principle of the Thyroid Gland



THE importance of carefully controlled Thyroxin medication is vital. This involves exact dosage of Thyroxin—a procedure which cannot be realized with desiccated thyroid gland on account of the variable relation of physiologically active Thyroxin to the total iodine content by which this material is standardized.

Pure crystalline Thyroxin is a compound of definite chemical composition. Its 65 per cent. of iodine is organically combined as an integral part of the molecule.

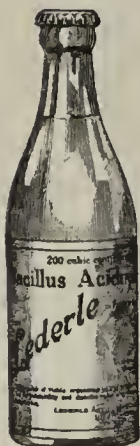
1/64 grain of Thyroxin represents 15 grains of desiccated thyroid prepared under favorable conditions. This ratio may be used in determining the initial dose of Thyroxin when the desiccated thyroid has previously been used.

Thyroxin is marketed in two forms—in tablets containing the partially purified sodium salt of Thyroxin for oral administration, and the pure crystalline Thyroxin for intravenous injection.

*Complete Information on Request*

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PURE, whole milk, cultured with the Bacillus Acidophilus, for use in transforming the intestinal bacterial flora and establishing the Bacillus Acidophilus as the predominant organism.

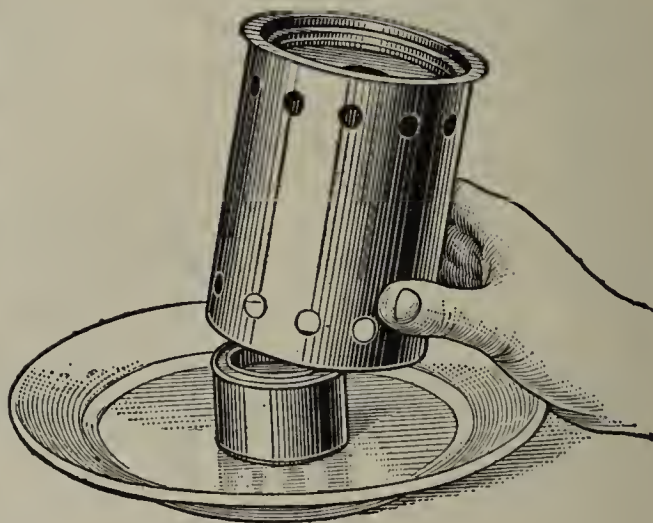
Recommended in the treatment of intestinal disturbances due to putrefactive changes; in chronic colitis, chronic constipation, rheumatic conditions, sprue and eczema; and in typhoid fever, dysentery and cholera. Also in toxic diarrheas of infants and infant feeding.

*Bacillus Acidophilus Milk LEDERLE has been accepted by the Council on Pharmacy and Chemistry for New and Nonofficial Remedies.*

Supplied in packages of six bottles of seven ounces each. Price \$1.75 per package plus delivery charges.

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## LISTER'S IMPROVED FORMALDEHYD FUMIGATORS— NEW TYPE



work so rapidly that all the formaldehyd gas is given off in 15 to 30 minutes. This rapid generation is accomplished by using solidified alcohol instead of a slow burning candle.

All physicians are invited to write for descriptive literature of *Lister's Improved Formaldehyd Fumigators—New Type*.

*Johnson & Johnson*

New Brunswick, N. J., U. S. A.





THE ability to perceive what constitutes true excellence is most often seen in those whose powers of perception have been whetted by comprehensive training and broad experience. It requires a keen and capacious mind to make the fine distinctions that are always contributive to correct decisions.

The enduring preference of the better minds in medicine and dentistry for Colgate's Ribbon Dental Cream furnishes a wholesome admonition to those who still cling to the notion that one tooth paste is as good as another.

Colgate's Dental Powder holds a high position among those of the dental profession who prefer a dentifrice in powder form. As with Ribbon Dental Cream, it is based on the same fine precipitated chalk and pure vegetable-oil soap.

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will be sent to professional  
friends, post-paid, on request.*

MEDICAL DEPT.,  
**COLGATE & CO.**  
*Established 1806*  
New York, N. Y.





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This Underwear will give ample protection. It neither overheats, nor chills the body. It was introduced 27 years ago and it is worn by thousands of men, women and children, everywhere.

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DEIMEL LINEN-MESH CO.  
375 Fifth Ave. New York

## And now— An alarm clock for investors

Some night before catching an early morning train try going to bed without setting your alarm clock. See how much sleep you will get—and how often you will miss your train.

Catching the right time to buy or sell securities is even more difficult than catching a train. Securities do not move on schedule. Without an indicator you may lose much sleep or miss many opportunities.

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The Brookmire Service is like an alarm clock for the investor, enabling him to go about his business safe in the knowledge that the alarm will be given when danger or opportunity arises.

May we tell you more of the service we render. Ask for pamphlet D-31, which includes samples of the Brookmire Service for investors, no cost or obligation.

FOR DEFINITE ACCURATE TIMELY FORECASTS ON MARKET TRENDS

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"The Original System of forecasting from Economic Cycles"

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Advertisements under the following headings, \$3.00 for 35 words or less, additional words 8c each. This rate applies for each insertion.

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Locum Tenens		

SPECIAL NOTE—A fee of 25c is charged those advertisers who have answers sent care of A.M.A. Letters sent in our care are forwarded promptly.

RESULTS are better when an advertisement receives several insertions, and to those who remit for four consecutive insertions of a classified advertisement we will give, free, two more insertions, provided the first four do not consummate a deal. Notice for free insertions must be received within two weeks following date of last or fourth insertion.

RESULTS VS. ECONOMY—DO NOT TRY TO economize at the expense of the effectiveness of your advertisement by omitting important and attractive features. In selling a practice, value of which runs into hundreds of dollars, it is surely unwise to run the chance of losing a prospective purchaser by not including every important fact and favorable item pertaining to the location and practice. Extra words over thirty-five cost 8 cents each.

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Frequently, we receive requests to this effect: "Please send me the address and particulars regarding ads. No. —, No. —, and No. —." We are not permitted by advertisers who have their mail sent care AMA to furnish inquirers information of any kind, hence when you wish to correspond with such an advertiser, address the envelope in this manner



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R.F.L. SEPT 1939 OHIO  
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% Jour. A.M.A.  
535 N. Dearborn St.  
Chicago

Classified Ads. are Payable in advance. To avoid delay in publishing, remit with order.

For current issue, ad. must reach us by 4:00 p.m. Monday

Journal A.M.A. 535 N. Dearborn St., CHICAGO

N. B.—We exclude from our columns all known questionable ads. and appreciate notification from our readers relative to any misrepresentation. The right is reserved to reject or modify all advertising copy in conformity with the rules of the advertising committee.

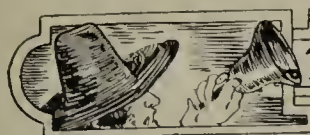
## APPOINTMENTS

EXAMINATION NOTICE—AN EXAMINATION for the position of health officer of the city of Savannah, Ga., will be held on April 20-21, 1923, at the United States Marine hospitals in Boston, Baltimore, Savannah, New Orleans, St. Louis and Chicago, under the supervision of the surgeons in charge; and at the Hygienic Laboratory, Washington, D. C. The Surgeon-General of the United States Public Health Service has appointed an examining committee, composed of Assistant Surgeon-General W. F. Draper, Surgeon L. L. Lumsden and Surgeon Geo. W. McCoy. Candidates will be rated on personal qualifications, ability, education and experience, in addition to a written examination. The examination will be identical at all places held. Salary \$4,800 per annum and automobile furnished. The position is guaranteed free from political interference. Further information can be had from any of the surgeons of the United States Marine hospitals named above, from Assistant Surgeon-General W. F. Draper, Washington, D. C., or from Dr. Herman W. Hesse, Chairman Health Committee, City Hall, Savannah, Ga. A

MICHAEL REESE HOSPITAL, CHICAGO, Ill., announces a vacancy for resident admitting physician beginning July 1, 1923; appointment for one year; full-time position; compensation \$1,200 per annum, with full maintenance; hospital graduates only will be considered. Apply Superintendent. A

(Continued on page 22)





# THE MEDICAL MART



A Page of ADLETS Classified for Easy Reading

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**ADLETS OCCUPY UNIFORM SPACES** of 5 and 10 agate lines, first line b. f. type, remainder 5 pt. roman. Insertions may be weekly, c.o.w. or e 4th w. Rates, \$6.00 and \$10.00 per insertion. Adv. Dept., Journal A. M. A., 535 North Dearborn Street, Chicago.

## Apparatus for Local Anesthesia

**DR. LOUIS DUNN'S AUTOMATIC SYRINGE** outfit for Major Surgery—Continuous flow. Not necessary to remove needle from tissues. Syringe automatically refills when piston is withdrawn. Write for Booklet. MacGregor Instrument Co., Needham, Mass.

## Artificial Limbs

**WINKLEY ARTIFICIAL LIMB CO.**  
The Winkley Adjustable Double Slip Socket Leg warranted not to chafe the stump. Perfect fit guaranteed from cast and measurements without patient leaving home. Send for large illus. catalogue. Minneapolis.

## Automobile Accessories



**Physicians' Signaphore**  
Indicates motor temperature. Displays physician's emblem. For radiator cap. Give name of car when ordering. Double gold-plated on brass. Postpaid, insured, \$8.50. A.M.A., 535 N. Dearborn St., Chicago.



## Automobile Journals

**DOCTOR! Reduce Your Auto Expenses.** Send for free copy of America's popular motor magazine. Contains helpful instructive information on overhauling, ignition, wiring, carburetors, batteries, etc. Automobile Digest, 660 Butler Building, Cincinnati.

## Biologic Supplies

**ANCO BIOLOGICAL SUPPLIES**  
Diagnostic Microscopic Slides; normal and pathological histology, blood and fecal smears showing parasites, type slides for bacteriology and parasitology. Also living Frogs, White Rats and Guinea Pigs; Microscopes. Write for Physicians' Leaflet No. 22. The Anglers Co., 1534 W. Lake St., Chicago.



## Books



**WHAT OF THE NEW DRUGS?**  
"New and Nonofficial Remedies" lists all newer preparations accepted by the A.M.A. Council on Pharmacy and Chemistry. Gives dosage, properties, uses, distributor. A reliable guide for prescription writers. \$1.50. AMERICAN MEDICAL ASSN.

## Building Plans

**BOOK OF PLANS FOR PHYSICIANS' OFFICES**  
COMBINED OFFICES AND DWELLINGS,  
MEDICAL BUILDINGS AND GROUPS  
Now Being Compiled.  
If you occupy or know of any such building, write about it, and send name of architect to  
**COUNCIL ON MEDICAL EDUCATION  
AND HOSPITALS**  
535 North Dearborn Street,  
Chicago.

## Clinical Laboratories

**PACIFIC WASSERMANN LABORATORIES**  
Since 1911  
Prompt—Accurate—Dependable  
San Francisco, Pacific Bldg. Oakland, Physicians Bldg.  
Los Angeles, Hollingsworth Bldg. Seattle, Green Bldg.

## Consultants

**HOSPITAL PLANS**  
Consultation On  
**HENRY C. WRIGHT, Director**  
Hospital and Institutional Bureau  
289 Fourth Ave., New York City

## Diabetic Foods

**CELLU FLOUR FOR DIABETES, OBESITY, RESTRICTED DIETS, etc.** Everything for the Diabetic. Write for information to the  
**CHICAGO DIETETIC SUPPLY HOUSE, INC.,**  
1750-52 W. Van Buren St., Chicago, Ill.

## Educational

**THE NEUROLOGICAL INSTITUTE OF NEW YORK**  
offers Postgraduate Clerkships  
to graduates of recognized medical schools.  
For particulars write  
Sec'y Medical Board, 149 E. 67th St., New York City.

## Elastic Goods



**WHEN IN NEED**  
of Elastic Stockings and Bandages, Abdominal Supporters, Elastic Arch Supports, or, in fact, anything in knit elastic goods, you will serve your interest best by specifying B.E.W. (Bennett Elastic Webbing). Your dealer carries a Bennett line. If he does not—write us.  
**Bennett Elastic Web Co., 2430 N. Oakley Ave., Chicago.**

## European Clinical Tours

**Europe and Its Clinics.** Tours Arranged for Physicians and Surgeons. Minimum expense. Maximum advantages. Write for folder and special terms.  
**Earl B. Hubbell, care Michigan Central Railroad, Room 412 LaSalle Street Station, Chicago.**

## Investments

**First Mortgage Bonds That Net Over 7%—Limited number of Brush Electric Bonds (Galveston public utility) now available at 74½. Redeemable at 105. Write for details on these 5% sinking fund gold bonds. Other offerings. True, Webber & Co., 209 S. LaSalle, Chicago.**

## Laboratory Supplies

**Is Litmus Paper Accurate for Urine Analysis?**  
Litmus solution is. 2 oz. of each, blue and red, \$1. Fehling's solution, 2 oz. of each A and B, \$1. Full directions with solutions.  
**E. E. Rademacher, A. B. Laboratories, Nokomis, Ill.**

## Microscopes

**THE REICHERT MICROSCOPES**  
Darkfield condensers, Haemaglobinometers, Haemacytometers, Saccharimeters for Urine tests, are without equal. Catalogues on demand. Repairs on premises. Optical Works. C. Reichert, 17 Madison Ave., N.Y. City.

## Pharmaceuticals

**BUTYN—THE NEW LOCAL ANESTHETIC**  
Superior to cocaine in potency, promptness and duration of action. Ask for special Council report on Butyn. Free with our price list describing many other new medicinals. Abbott Laboratories, Chicago.

## Publishers and Printers

**HOSPITAL SOCIAL SERVICE**  
A magazine devoted to medical follow-up work, health education and social diagnosis and treatment. Monthly, \$3.00 per year. Dr. E. G. Stillman, Editor, 9 E. 37th St., New York City.

FOR THE HEALTH OF AMERICA

## HYGEIA

A Journal of Individual and Community Health, interpreting to the layman the facts regarding scientific medicine—news and truth about health. Subscribe now and receive the April issue. See page 6.

## Radium

**RADIUM APPLICATORS AND THEIR USE**  
the latest technique employed by successful radium workers reviewed in the Lectures arranged by the  
**Radium Chemical Co., Pittsburgh, Pa. See Page 10.**

## Rubber Goods

**SURGEONS' RUBBER GLOVES**  
made by expert workmen. We are past the experimental stage and our gloves are uniform in weight, and they fit like silk. Sold only through the dealer.  
**Massillon Rubber Company,  
Massillon, O., U.S.A.**



## Sporting Goods

**NO BATTERY NEEDED FOR THIS FLASHLIGHT**  
**IVAR-LITE**  
Always on the job—no batteries to run down. Squeezing the lever whirls dynamo inside, instantly producing a powerful white light. Focuses for spot or diffuses. Nickel-plated. Fine for inspecting motors, camping trips; handy around home. Postpaid, \$4.00.  
**IVAR-LITE SALES COMPANY,  
24 Milk St., Boston, Mass.**

## CAMPERS' COMFORTS

Write for our free catalog of rain capes that can be carried in your pocket, air mattresses that are soft to sleep on, auto tents that fit the running board, air pillows, etc. Metropolitan Air Goods Co., Athol, Mass.

## Sterilizers

**NEW CASTLE STERILIZER HAS NO FUSE PINS**  
or thermostatic metal. Current breaks automatically before water is all gone. Ask for catalog "H" of Sterilizers for Physicians, Hospitals and Laboratories.  
**Wilnot Castle Co., 1167 University Ave., Rochester, N.Y.**

## X-Ray Apparatus and Supplies



**THE WM. MEYER CO., 1642 N. GIRARD ST., CHICAGO, ILL.**

**WOULD YOU LIKE TO HAVE AN ATTRACTIVE**  
proposition for complete office equipment in Electro Therapy to be installed on plan by which they should pay their own way? If so, write  
**Thompson Plaster X-Ray Company, Leesburg, Va.**

**Doctor: When You Read This Page**  
have on your desk a few postal cards and write for samples or descriptions of the articles mentioned. You will find many items of value.

# BOOKS

for Practitioner, Student, Teacher, Layman



**WHATEVER** your medical book needs, do not overlook the valuable help found in the books, pamphlets and reprints published by the American Medical Association.

The pamphlets for lay distribution on cancer, infant welfare, public health problems, conservation of vision, etc., cover a wide range of subjects.

**A. M. A. PRESS, 535 N. Dearborn St., Chicago**

Write for Catalog





**E**VERY physician who has even a speaking acquaintance with the Glands of Internal Secretion knows that diseases of certain of these glands lead to serious changes in the Metabolism.

Basal Metabolism is Katabolism at its base level, but the functions of Metabolism—growth, absorption, assimilation, excretion—are everywhere confused with the term "Basal Metabolism."

As a result, many a grotesque theory is born, and too often put into practice.

An obstetrician mindful of the influence of pregnancy on the general metabolism, plans to use the metabolism test to diagnose early pregnancy.

A gynecologist, noting that the menopause is followed by a tendency to gain in weight, plans to diagnose disturbances of the menopause by the metabolism test.

A neurologist, believing that neurasthenia is due to a "hypo-adrenia", insisted that neurasthenia must show a decreased metabolism.

An internist, in trying "whole adrenal gland" on these hypo-adrenia neurasthenics, expected clinical improvement and a rise in the metabolism.

A G. U. surgeon, after giving subcutaneous injections of testicular extracts to women and ovarian extracts to men to allay excessive sexual desires, predicted a "high metabolism in these highly sexed patients."

---and so on for diabetes, cancer, cirrhosis, eclampsia, and what not.

Fortunately the basal metabolism does not behave in such erratic fashion. Diseases which disturb it are few in number; they are definitely known; their influence is marked; and the association is constant.

Concerning the test itself, specificity is its most remarkable feature, and proof that its use is definitely restricted to these few diseases rests on an accumulation of evidence totalling literally tens of thousands of case histories of all manner of diseases.

The practice of medicine today regularly includes basal metabolism data. If you are interested in its application, write Dept. 21 for our free booklet entitled "Clinical Interpretation of the Metabolism Test."

**Middlewest Laboratories Co.**

4907 North Clark Street  
CHICAGO, ILLINOIS

## Tonics and Sedatives

### DR. PEPYS' DIARY

*March 16.*—Reading in ye press of a damsel who hath overmuch of temperature and it seemeth ye press maketh a great hullaboo thereat, and well they may, for, indeed, if ye lady be as hot as is spoken, she is ye warmest that hath yet appeared in this clime. More especially is ye tale to be wondered at for that she resides in ye most northern part of ye country where, at this season, ye whole country is locked in snow.

*March 19.*—This day ye press full of ye tale of how ye damsel hath committed a hoax and that ye temperature be naught but that of a vessel filled with hot water which she hath concealed about ye bed. Now indeed ye whole country doth laugh at that which was before a subject for marvel; so considering, I must needs be constrained to think of ye old saw that "familiarity breedeth contempt," and to be reminded again of ye old fact that ye unknown is always mysterious and ye wonderment of ye populace. Now forsooth all do comment wittily on ye revelation of ye hoax, but none so witty as this: One of ye physicians hath written that ye way to cure ye damsel would be indeed to place her over ye knee and apply forcible correction to ye presenting portion of ye anatomy; thereat hath a columnist written that this would be indeed one way to get at ye bottom of ye mystery.

*March 24.*—This night a multitude assembled to hear a great physiologist speak of ye functions of ye spleen, that strange mass which lieth within ye body cavity and performeth its duties, and yet few know what those duties be. Reflecting on this organ one despairs that ever ye human will know all of ye wonders of ye body, but thinking on ye great accomplishments of ye past, wondering indeed that as much hath been learned as hath already come to light.

*March 25.*—Ye best tale of ye week that of Dr. Hadley, who reciteth of an ancient Ethiopian woman who hath come to see him. "Have you had any female trouble?" he inquired. "Yessah, doctah," was ye answer, "but Ah been wearin' a pessimist now foh some time."—Come too Strouse with a quaint conceit, namely, that ye novel "Black Oxen," which hath to do with ye glands is but a sequel to ye novel of ye Frenchman, Flaubert, called "Madame 'ovary."

### A Delicate Compliment

*Philadelphia Weekly Roster*

Competent housekeeper, experienced with deficiencies, would take charge of Physician's house and assist in office work. Address Mrs. M., 3270 Sansom St. Preston, 4952-W.

HOW DO YOU MEAN "BACTERIA"!

*Ad of Kroman Instrument Co.*

Excellent for  
Microscopical Examination  
of Urine.

Powerful enough for  
Bacterial Examination, such as  
of Anthrax, Spermatozoa and any  
large Bacteria, also higher Bacteria  
as Actinomycosis, Fungi, Etc.

This Microscope Answers  
all students requirements and is  
also excellent to carry out trichinae  
examinations.

### Instructing the Young

*Ann Arbor Daily*

Major A. B. C—of the department of military science was confined to his home yesterday on account of injuries sustained in an auto collision Sunday. The smaller car, it is reported, caromed off the major's heavy automobile and tipped over, throwing the occupants into the street and shaking them up badly but with no serious injury. The shock caused a total loss of memory to the Major. Mrs. C—stated, however, that he would be well enough to meet his classes this morning.

(Continued on page 24)

(Continued from page 20)

THE MINNEAPOLIS GENERAL HOSPITAL has vacancy as Chief Resident on the Medical Service. Applicant must have completed one year's internship in recognized hospital; no salary; excellent opportunity for study and research; chief residency open on Neurological Service; applicant must have completed one year's internship in a recognized hospital; no salary; excellent opportunity for study and research; two vacancies as Receiving Physician; salary \$100 per month and maintenance; excellent opportunity for emergency work; applicant must have completed one year's internship in recognized hospital. A

THE POSITION OF INSTRUCTOR IN physiology is vacant in the University of Texas School of Medicine; salary \$2,000. with one month's vacation on full pay; opportunities for research and early promotion to satisfactory man; climate ideal; state age, year of graduation and degrees, previous experience. Department of Physiology, University of Texas, Galveston, Texas. A

### ASSISTANTS WANTED

WANTED—A RESIDENT PHYSICIAN FOR three months, mostly medicine and obstetrics; salary \$100 per month and maintenance; Class A hospital; located in Ohio. Add. 5585 B, % AMA.\*

WANTED — TWO ASSISTANT PHYSICIANS in a modern tuberculosis hospital of 250 beds; must be single. Those interested add. Dr. Frank A. Pender, Acting Superintendent, Essex Mountain Sanatorium, Verona, N. J. B

WANTED—WE NEED A DOCTOR TO ASSIST in our dispensary; this work will give an excellent training in dispensary routine and industrial relations as developed under modern personnel work; give complete history and salary expected; let your history contain any organization experience you have had. The Ohio Brass Company, Mansfield, Ohio. Dr. Harry Myers, Personnel Superintendent. B

WANTED—AT NOPEMING SANATORIUM for Tuberculosis (200 patients), an assistant physician. Add. Supt. Nopeming Sanatorium, Nopeming, Minn.\* B

WANTED—YOUNG MALE GRADUATE IN industrial office; hours 8 to 5; salary \$125 month. Add. 5555 B, % AMA.

WANTED—ASSISTANT PHYSICIAN, male, single, Ohio State Tuberculosis Sanatorium; salary \$1,500 with full maintenance; applicants must be graduates of Class A school. Add. F. C. Anderson, M.D., Superintendent, Mount Vernon, Ohio. B

WANTED—AT ONCE—NORTHERN MICHIGAN; mine assistant; \$175 per month; modern location and equipment; fine opportunity for general experience; state experience, nationality, age, religion and when available. Add. 5597 B, % AMA.

WANTED — ASSISTANT PHYSICIANS—System institution work; must have A1 medical degree, splendid personality, experience in diagnosis, clinical laboratory technic; photograph, reference, first letter; opportunity right men. Add. 5376 B, % AMA.

WANTED—ASSISTANT PHYSICIAN, male, state hospital for insane, Ohio; young active man preferred; send full particulars and recent photo when answering; salary \$1,500 to \$2,500 with full maintenance. Add. 5547 B, % AMA.

WANTED — RESIDENT IN INTERNAL medicine, 200-bed charity hospital; well organized, well equipped laboratories; applicant should have had two years' hospital experience and send references in first letter; allowance, \$100 per month and maintenance. Add. W. P. Morrill, M.D., Supt. Shreveport Charity Hospital, Shreveport, La.\* B

WANTED — ASSISTANT TO PHYSICIAN and surgeon in village of 900; rich farming community; up-to-date hospital; not essential, but Scandinavian preferred; must be unmarried; salary or percentage. Add. 5535 B, % AMA.

WANTED — ASSISTANT PHYSICIAN IN state hospital for insane; male, single, graduate of Class A college; qualified to register; require industrious and energetic service and observe discipline; salary \$2,000 and maintenance. Add. 5550 B, % AMA.

(Continued on page 24)



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Individual Instruction in Nerve Blocking and Infiltration. Latest Technique in all Operations. Review of Surgical Anatomy.

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Wassermann Test—Blood or Spinal Fluid	\$ 5.00
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920 P. Smith Bldg., Detroit; University Club Bldg.,  
St. Louis; 302 S. Jefferson St., Saginaw, Mich.

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Journal advertisements present a vast amount of information in small compass.

### (Tonics and Sedatives Continued)

#### A REASONABLE COMPLAINT

Sir.—It may be explained that in a few years from now, aspirants for social distinction in Buffalo will be asked, not about their ancestry, nor about such a vulgar matter as money, nor even where they graduated, but whether they were born at the Children's Hospital. The present generation of adults assumes the apologetic attitude of the doctor who explains that he studied medicine before Johns Hopkins was organized. During the first week of March, a young married woman telephoned to the hospital to reserve a room for her expected confinement in September. She was informed that all rooms were engaged through November and that it was necessary to make reservations nine months in advance.—B. A. L.

### Beating the Bronchoscope

Kearney (Neb.) Hub

An unusual and most dangerous operation was successfully performed by Dr. — when the latter removed an obstruction from the right lung of the six year old daughter of Mr. and Mrs. C—. Emma Jane. The child swallowed the brass ferrule of a lead pencil with which she had been playing. \* \* \* She was placed under an X-ray immediately and a foreign substance, the pencil ferrule, was located anchored on the right lobe of the lung. \* \* \* The operation was performed Tuesday evening, at St. Luke's hospital. The pencil ferrule had passed down the right bronchial tube and apparently was firmly imbedded in the lung. An incision was made in the throat and windpipe and while the child breathed through the small tube injected, a probe was inserted, the pencil ferrule was found and very quickly extracted with a forceps. The entire operation, one of the most delicate and dangerous known, required but one hour of actual working time. One of the nurses was so enthusiastic over the success attendant the operation that she clapped her hands in glee when the operation was concluded.

Similar operations have been undertaken previously, but not outside of Omaha, as far as is known. Few have been successful, according to medical and surgical records. The great element of danger involved in the operation, in this manner, has caused surgeons to prefer entering through the chest cavity and thus exposing the lung. However, the latter is a very hazardous operation and not without attendant dangers. The time in which the operation was performed is also considered incredibly short.

#### THE LESSER EVIL

An elderly colonel used to boast that he had a tranquil disposition which nothing could ruffle.

One day while playing golf he got into the worst bunker on the course and spent ten minutes trying to play out.

He tried nearly every club in vain and at last glaring like a demon, he smashed them one after the other across a jagged rock.

"What are you doing?" cried one of the party above.

"It's all right," he snorted. "It's better to break your clubs than to—lose your temper."—Pickup.

### What Was the Message?

Atlanta (Ga.) Journal

RIO DE JANEIRO.—According to a dispatch printed in the leading evening journal, "A Noite," a child born to the servant of an English family in the town of Pedra, state of Alagoas, Brazil, "announced in a clear voice the telegraphic signals of the Morse code immediately after birth and 24 hours after manipulated a Morse telegraphic instrument."

### AND ECHO ANSWERS "WHAT, INDEED?"

From a circular

Not every case of neurasthenic impotence can be cured, it is true. But the vast majority of cases can be helped—many of them cured—with **APHRODISIAC TABLETS IMPROVED**.

Results have shown that this combination is a very excellent one in the treatment of neurasthenic impotence, presenility, low vitality, and kindred ailments of sexual origin. Physicians who try this formula continue to use it. What better way is there to judge results?

(Continue on page 26)

### (Continued from page 22)

**WANTED—SURGICAL ASSISTANTSHIP**—Opportunity to learn general surgery; first surgical assistant 100-bed hospital, Chicago; expenses small; service three and six months. Add. 5573 B, % AMA.

**WANTED—ASSISTANT PHYSICIAN**, either man or woman, in a Pennsylvania county hospital for insane; state license not needed; \$50 per month and maintenance, with a bonus of \$300 at end of year's work. Add. 5527 B, % AMA.

**WANTED—THREE VACANCIES FOR** resident physicians beginning July 1, 1923; a rotary service for a term of one year to count as the fifth year of a medical course; compensation \$50 per month with maintenance. Add. Committee on Residents, St. Joseph's Hospital, Reading, Pa. B

**WANTED—ASSISTANT PHYSICIAN**, male; Lima State Hospital, Lima, Ohio; salary begins \$1,500 per year, increases to \$2,600, with full maintenance; single man preferred; applicants must be graduates of Class A school; send recent photograph with application. Add. C. H. Clark, M.D., Superintendent, Lima, Ohio. B

### PHYSICIANS WANTED

**PHYSICIANS WANTED—DOCTORS** wanted immediately for salaried appointments in hospitals, sanatoriums, industrial plants, railroad companies, mining and contract practice. Apply "The Medical Echo," 30 Cowdrey Ave., East Lynn, Mass.

**WANTED—HEAD PHYSICIAN, TUBERCULOSIS** sanatorium, Oak Forest, Ill.; examinations Tuesday, May 1, 10 a. m., Room 1007, County Bldg., Chicago; \$3,500 and maintenance for family; local residence waived. Apply Chicago Tuberculosis Institute, 8 South Dearborn St., Chicago. C

**WANTED—FOR FULL-TIME RAILROAD** service, physicians 25 to 38 years old in central eastern section. Add. 5560 C, % AMA.

**WANTED—IMMEDIATELY—MEDICAL** missionary for small hospital, Navajo Indian Reservation; must be young, fully qualified doctor; Protestant in religion; of excellent character and definite Christian conviction; wonderful opportunities for Christian service; full particulars given on request. Field Work Department, Woman's Board of Home Missions, 156 Fifth Ave., New York. C

**WANTED—RESIDENT PHYSICIAN**, Cleveland Municipal Tuberculosis Sanatorium; 280 beds; modern equipment; salary \$2,000 and maintenance; give full details of medical education and experience. Add. Commissioner of Health, 116 City Hall, Cleveland, Ohio. C

**WANTED—AT ONCE IN IDEAL REST** Sanatorium, Orwell, N. Y., physician to take full charge of tuberculosis work, especially in treatment of ex-service men; salary \$2,500 to \$3,000, with maintenance for right party; must be experienced in Veterans' Bureau reports and paper work; hours 8-5. Apply by letter with references. C

**WANTED—PHYSICIAN THOROUGHLY** qualified to take position as medical director of tuberculosis sanatorium in New Mexico; splendid opportunity for one now serving as assistant in big institution to make a name for himself, as he will be given every assistance to make this institution be best in the southwest. Add. 5562 C, % AMA.

**WANTED—PHYSICIAN TO TAKE OVER** a well-equipped x-ray laboratory, Wappler Belview model equipment and everything else in accordance; established over 10 years; will sell cheap or rent. Add. 5569 C, % AMA.

**WANTED—MAN OF EXPERIENCE AND** ability to do general practice with idea of specializing in internal medicine; I will supply office, furnishings, x-ray and clinical laboratories with technicians, actinic lights, high frequency, expecting to do the surgery and general diagnostic work, under an agreement with idea of ultimate partnership and group formation; Wisconsin city of 20,000; modern hospital; unusual field and opportunity. Add. 5558 C, % AMA.

**WANTED—COMPETENT PHYSICIAN**, man or woman, to fill good position in state hospital for insane in middle west; best of references required. Add. 5485 C, % AMA.

(Continued on page 26)



# PARADISE WATER



*'Tis a little thing  
To give a cup of water: yet its draught  
Of cool refreshment, drain'd by feverish lips,  
May give a thrill of pleasure to the frame  
More exquisite than when nectarian juice  
Renews the life of joy in happiest hours.  
—Thos. Noon Talfourd.*

Water is essential to life. It helps to carry food to all parts of the body and to eliminate waste matter. It helps to distribute body heat and to regulate it by the physical process of absorption and evaporation.

An investigation of Paradise Water is solicited. It is a pure water, bottled in its natural state, and because its taste is pleasing, it can be given in large quantities without objection on the part of the patient.

Paradise Water contains less than 1 grain of mineral matter per gallon; therefore, if the physician wishes to order water of unusually low mineral content—Paradise Water will meet his requirements.

Let your patients try Paradise Water—and note the result.

## ANALYSIS

Silica .....	0.379 gr.	Sodium Carbonate...	0.360 gr.
Iron Oxide.....	0.005 gr.	Potassium Chlorid...	0.036 gr.
Calcium Sulphate...	0.060 gr.	Total solids by cal-	
Calcium Carbonate...	0.074 gr.	culation .....	0.996 gr.
Mag. Carbonate.....	0.060 gr.	Total solids by weight	
Sodium Chlorid.....	0.022 gr.	at 230 F.....	0.980 gr.

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Quarts .....	12 to case
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**DOCTOR: Write Us—****FRACTURES**

Hip, Thigh or Leg Set. Splints rented ready to apply. Patients pay \$35.00 for 2 months or less. Your treatment with the AMBULATORY PNEUMATIC SPLINT, In or Out of Bed, Secures Good Bone Union, Comfort, Strength and Health in the least possible time.

To Order: State sex of patient; fracture; which limb; length of perineum to heel; circumference of chest, hips, and thigh at perineum. Wire and mail orders expressed on receipt, adjusted to fit, with complete directions for application.

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**The Sheppard Keidel Tube** is the recognized standard instrument for taking blood specimens. \$1.75 per dozen, \$17.50 per gross, postpaid. The Scientific Glass Instrument Co. Northfield, N. J.

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use the Classified Columns of  
**The Journal** in securing positions

(Tonics and Sedatives Continued)

**The Lower Half Was Present**

Chicago Tribune

Hulf and his wife separated in 1893. A few days later his wife's body was found stabbed to death in Cleveland. Hulf's description was sent broadcast, but despite his easily recognizable appearance—his left arm was missing above the wrist and his left eye was gone—he never was located.

**STRATEGY**

A tramp stopped at a farmhouse one evening and asked for a job in return for a night's lodging and meals. The farmer put him to milking the cows, but a few moments later the tramp reported that the flies were so bad that the cows would not stand still long enough to be milked.

The farmer looked at his watch and replied: "Wait about half an hour, till supper time. The flies will all be in the dining room then and you can milk in peace."—Judge.

**It Is Rather Troublesome**

Answer by Dr. Lulu Hunt Peters in Lowell (Mass.) Leader

Mrs. S.—We have an article on pruritis which you can have. Also one on inconvenience of urine.

**THE OLD ONES ARE THE BEST**

We regret to note that Mr. Timothy Judd, our local tenor, has been placed in the county insane asylum. Mr. Judd's mental disorder dates from January 23, when he attempted to sing "Brighten the Corner Where You Are," at a noon-day meeting held in the railroad round-house.

**Books Received**

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

TABLES ANNUELLES DE CONSTANTES ET DONNÉES NUMÉRIQUES DE CHIMIE, DE PHYSIQUE ET DE TECHNOLOGIE. Publiées sous le patronage du Conseil international de Recherches et de l'Union internationale de la Chimie pure et appliquée par le Comité international nommé par le VII Congrès de Chimie appliquée. Volume IV. Années 1913-1914-1915-1916. Deuxième Partie. Cloth. Price, \$13.25 net. Pp. 1377. Chicago: University of Chicago Press, 1922.

TEXT-BOOK OF ANATOMY AND PHYSIOLOGY FOR TRAINING SCHOOLS AND OTHER EDUCATIONAL INSTITUTIONS. By Elizabeth R. Bundy, M.D. Fifth Edition by Martha Tracy, M.D., Dr.P.H., Professor of Nutritional Hygiene, Woman's Medical College of Pennsylvania, and Grace Watson, R.N., Educational Directress, Philadelphia General Hospital Training School for Nurses. Cloth. Price, \$2.50 net. Pp. 442, with 266 illustrations. Philadelphia: P. Blakiston's Son & Co., 1923.

EPIDEMIOLOGICAL INTELLIGENCE. Epidemics in Russia Since 1914. Report to the Health Committee of the League of Nations. By Professor L. Tarassévitch. Part I: No. 2. Typhus—Relapsing Fever—Smallpox. Part II: No. 5. Cholera—Plague—Enteric Fever—Dysentery—Infectious Diseases in Children—Other Infections—Famine and Depopulation. Paper. Geneva: League of Nations, Health Section, 1922.

VOLUMINOSO QUISTE DERMOIDEO DEL OVARIO IZQUIERDO CONTENIENDO UN RUDIMENTO DE MAXILAR, PARTES OSEAS, PELOS, MATERIAS SEBACEAS, MUELAS Y DIENTES, EXTIRPADO POR COLPOTOMIA ANTERIOR. Por el Dr. Alberto Chueco, Jefe del Servicio de Cirugia Ginecológica del Hospital Juan A. Fernández. Paper. Pp. 46, with 8 illustrations. Buenos Aires: Imprenta de E. Spinelli, 1922.

(Continued on page 28)

(Continued from page 24)

**WANTED—RESIDENT PHYSICIAN FOR** psychopathic department of St. Francis Hospital, Pittsburgh; large service; fine laboratory; fair salary. Add. Dr. C. H. Henninger, Jenkins Arcade, Pittsburgh, Pa.\* C

**WANTED—CLINIC OWNING AND CON-** ducting 50-bed standardized private hospital in middle western city wishes to secure the services of young graduate experienced in x-ray work; radium, electrotherapy and skin disease experience desirable, but not essential; this is an opportunity for a capable man to become head of department with eventual membership in clinic; state experience, schools, age, personal qualifications, salary expected and other details in first letter; replies held strictly confidential. Add. 5574 C, % AMA.

**WANTED — RESIDENT PHYSICIAN IN** 150-bed general hospital; graduate Class A medical school, with at least one year's intern service. For further information as to requirements, salary and term of service, add. Superintendent, Union Hospital, Fall River, Mass., stating particulars as to general and medical education. C

**WANTED—A BOYS' BOARDING SCHOOL** desires the services of a physician; a graduate of the Physicians and Surgeons, Harvard or Johns Hopkins, with hospital experience preferred; Oct. 1, 1923, until July 1, 1924; salary \$250 per month with living for self and wife; duties, general oversight and charge of health of the school and one or two classes in physics. Add. 5587 C, % AMA.

**WANTED — EYE, EAR, NOSE AND** throat specialist; must be capable, tactful, congenial, young; salaried position; town 30,000; middle west; give training, experience, religion, reference and photo first letter. Add. 5591 C, % AMA.

**WANTED—DOCTOR — SOUTH DAKOTA—** Town of 700; large territory; unopposed; some appointments; present doctor going into clinic; for a quick deal will sacrifice house and office combined (new), modern; write for details if you want a big thing. Add. 5582 C, % AMA.

**WANTED — SANATORIUM FOR TUBER-** culosis diseases, Glen Gardner, N. J.; physician, preferably single, with sanatorium training; \$2,000 with maintenance; send in first letter age, school graduation, previous experience and photograph. Add. Samuel B. English, Chief Executive Officer New Jersey Sanatorium, Glen Gardner, N. J. C

**WANTED — MEDICAL HEALTH OFFI-** cers, preferably with laboratory experience, for full-time positions in Georgia counties; salary \$2,700 to \$4,000 per year, depending on training and adaptability; additional allowance for expenses; give training, personal particulars and recent photograph in first letter. Add. State Board of Health, Atlanta, Ga. C

**WANTED — IN A MASSACHUSETTS** State Hospital, a single, male physician. Add. 5525 C, % AMA.

**WANTED—A RECENT GRADUATE PHY-** sician, single, male, Protestant, as assistant in general and industrial practice; salary and maintenance; position open at once; full particulars first letter. Add. 5442 C, % AMA.

**WANTED—CLASS A PHYSICIANS, PATHO-** logists for salaried positions; internists, assistants, surgeons, hospitals, contract, industrial, group, appointments; if you desire a permanent position anywhere send for application form. Aznoe's National Physicians' Exchange, 30 N. Michigan. Chicago. C

**INTERNS WANTED**

Advertisements marked with a star (\*) are of hospitals on the list of those approved for intern training by the Council on Medical Education & Hospitals of the A. M. A.

**WANTED — INTERN FOR ONE YEAR—** 150-bed general hospital; rotating service; salary \$30 for first six months and \$50 for remainder of year; must be graduate from Class A medical school. For further particulars apply to Superintendent, Union Hospital, Fall River, Mass.\* D

**WANTED—INTERN—100-BED HOSPITAL** in vicinity of Boston; active service; complete laboratory; monthly remuneration of \$25; approved by the American College of Surgeons. Add. 5596 D, % AMA.

(Continued on page 28)

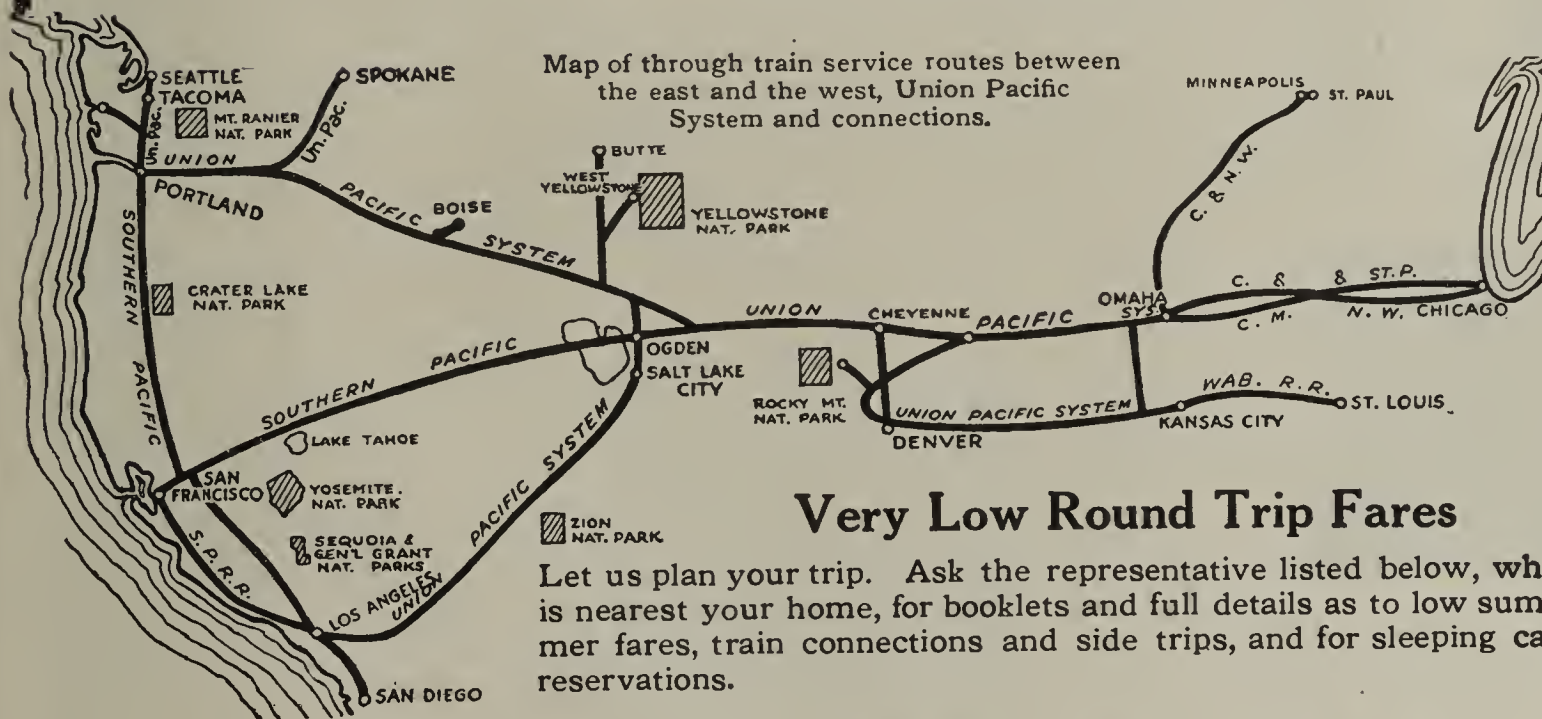


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  - 3 PACIFIC NORTHWEST ROUTE—200 miles along the Columbia River and its great gorge and waterfalls. Visit Portland, Tacoma, Seattle. Take in the Puget Sound water trips and Mt. Rainier and Crater Lake National Parks.
- GO ONE WAY—RETURN ANOTHER if you like.  
STOP OVER on your way West or returning at Denver, Rocky Mountain National Park, Salt Lake City, Yellowstone National Park, Lake Tahoe and Yosemite.  
SPECIAL TRAINS have already been arranged via the C. & N.W.-Union Pacific—for the delegates from Massachusetts, Ohio and Chicago. For information about joining one of these special train parties ask the nearest Union Pacific representative.



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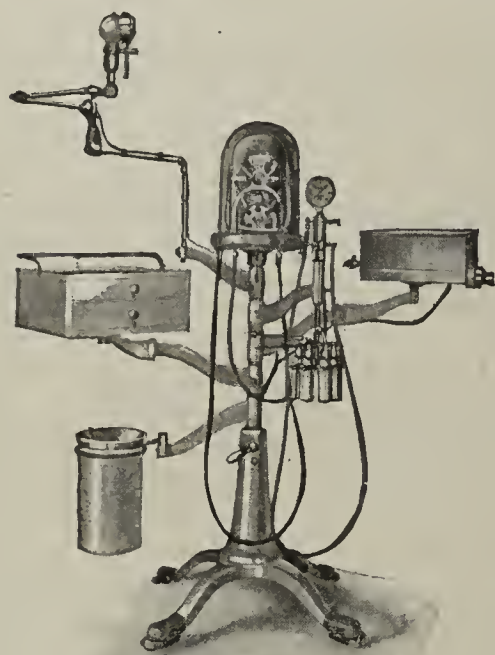
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ABERDEEN, WASH... 3-4 Union Passenger Station, W. J. Leonard  
ATLANTA, GA..... 49 N. Forsyth Street, W. C. Elgin  
BIRMINGHAM, ALA..... 1st Ave. & 20th Street, J. H. Doughty  
BOISE, IDAHO..... 8th & Bannock Streets, Joel L. Priest  
BOSTON, MASS..... 294 Washington Street, Willard Massey  
BUTTE, MONT..... 4 S. Main Street, Henry Coulam  
CHICAGO, ILL..... 58 E. Washington Street, Geo. R. Bierman  
CINCINNATI, OHIO..... 4th & Vine Streets, W. H. Connor  
CLEVELAND, OHIO..... 1016 Euclid Avenue, W. H. Benham  
DALLAS, TEXAS..... Commerce & Akard Streets, Julian Nance  
DENVER, COLO..... 18th & California Streets, W. K. Cundiff  
DES MOINES, IOWA..... 209 Fifth Street, D. M. Shrenk  
DETROIT, MICH..... 127 Lafayette Blvd., West, A. R. Malcolm  
KANSAS CITY, MO..... 805 Walnut Street, S. C. Rhodes  
LEAVENWORTH, KANS..... Union Station, A. E. Marteny  
LINCOLN, NEB..... 204 N. 11th Street, A. D. Grant  
MILWAUKEE, WIS..... 221 Grand Avenue, E. G. Clay

MINNEAPOLIS, MINN..... 125 S. Third Street, E. H. Hawley  
NEW ORLEANS, LA..... 226 Carondelet Street, D. M. Rea  
NEW YORK, N. Y..... 280 Broadway, J. B. De Friest  
OGDEN, UTAH..... 290 24th Street, W. H. Chévers  
OMAHA, NEB..... 1416 Dodge Street, A. K. Curts  
PHILADELPHIA, PA..... 15th & Market Streets, F. L. Feakins  
PITTSBURGH, PA..... Smithfield St. & 6th Ave., John D. Carter  
ST. JOSEPH, MO..... 505 Francis Street, F. H. Byers  
ST. LOUIS, MO..... 611 Olive Street, J. L. Carney  
SALT LAKE CITY, UTAH..... 10 S. Main Street, E. A. Shewe  
SEATTLE, WASH..... O.-W. Pass. Station, W. S. Elliott  
SPOKANE, WASH..... 727 Sprague Avenue, W. R. Skey  
TACOMA, WASH..... 106 S. Tenth Street, Wm. Carruthers  
TORONTO, ONT..... 69 Yonge Street, Geo. W. Vaux  
VANCOUVER, B. C..... 470 Granville Street, Frank S. Elliott  
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Because their composition is  
30% Iridium and 70% Platinum  
A. P. W. NEEDLES are hard

What does it mean to you?  
It means:

- A—They retain a sharp cutting edge.
- B—The sharp keen A. P. W. makes an almost painless incision.
- C—You can sterilize them in the hottest flame without fear of damaging them—no solder is used in assembling A. P. W. Needles.
- D—A. P. W. Needles will not corrode or rust.

Interesting data free—  
Write your name on the margin

AMERICAN PLATINUM WORKS  
N. J. R. Ave. & Oliver St.  
NEWARK, N. J.

### Books Received—Continued

PHYSICS AND CHEMISTRY FOR NURSES. By A. R. Bliss, Jr., A.M., Ph.D., M.D., Lecturer on Chemistry and Materia Medica, Grady Hospital Training School for Nurses, and A. H. Olive, A.M., Ph.D., Ph.D., Lecturer on Chemistry, Hillman Hospital Training School for Nurses. Third edition. Cloth. Price, \$2.50. Pp. 190, with 70 illustrations. Philadelphia: J. B. Lippincott Company, 1923.

TASCHENBUCH DER PRAKTISCHEN UNTERSUCHUNGSMETHODEN DER KÖRPERFLÜSSIGKEITEN BEI NERVEN- UND GEISTESKRANKHEITEN. Von Privatdozent Dr. V. Kafka, Leiter der serologischen Abteilung der psychiatrischen Universitätsklinik und Staatskrankenanstalt Friedrichsberg in Hamburg. Second edition. Paper. Price, 50 cents. Pp. 105, with 29 illustrations. Berlin: Julius Springer, 1922.

OEUVRES DE PASTEUR. Réunies par Pasteur Vallery-Radot, Médecin des Hôpitaux de Paris. Paper. Tome Premier: Dissymétrie Moléculaire. Price, 50 francs, net. Pp. 480, with illustrations. Tome II: Fermentations et Générations dites Spontanées. Price, 65 francs net. Pp. 644, with illustrations. Paris: Masson et Cie, 1922.

TASCHENBUCH DER ÖKONOMISCHEN U. RATIONELLEN REZEPTUR UNTER BERÜCKSICHTIGUNG DER DEUTSCHEN UND ÖSTERREICHISCHEN VERHÄLTNISSE. Von A. Fröhlich, Prof. für Pharmakologie, und R. Wasicky, Prof. für Pharmakognosie. Second edition. Paper. Pp. 224. Berlin: Urban & Schwarzenberg, 1923.

LYMPHOGRANULOMATOSE DES GANGLIONS INGUINAUX. (Ulcère Vénérien Adénogène) Ses rapports avec le Bubon Climatérique. Par le Docteur Adrien Phylactos, Elève de l'École du Service de Santé Militaire. Paper. Pp. 204, with 2 illustrations. Villefranche: Réveil du Beaujolais, 1922.

TUBERCULOSIS AMONG THE NORTH AMERICAN INDIANS. Report of a Committee of the National Tuberculosis Association Appointed on October 28, 1921, on Tuberculosis Among the North American Indians. Paper. Pp. 101. Washington: Government Printing Office, 1923.

THE GOLD-HEADED CANE. [By William Mac-michael, M.D.] New edition with introduction and annotations by George C. Peachey. Cloth. Price, \$4.50. Pp. 195, with illustrations. London: Henry Kimpton, 1923.

MALAISES DES AVIATEURS. Leurs Causes; Leurs Explications; Leurs Remèdes. Par le Drs. Perrin de Brichambaut & P. Béhague. Paper. Price, 1 franc. Pp. 15. Paris: Librairie Gauthier-Villars.

THE ACID-BASE EQUILIBRIUM OF THE BLOOD. By The Haemoglobin Committee, Medical Research Council. Paper. Price, 2 shillings, net. Pp. 70. London: His Majesty's Stationery Office, 1923.

LIÇÕES DE EMMENOLOGIA CLINICA. Por J. Adeodato, Professor cathedrático de clinica gynecologica na Faculdade de Medicina da Bahia. Paper. Pp. 292. Bahia: Romualdo dos Santos, 1923.

VERLETZUNGEN DES AUGES IN KLINISCHEN BILDERN. Für praktische Aerzte. Von Prof. Dr. Ernest Blessig, Direktor der Univ. Augenklinik in Dorpat. Paper. Pp. 43. Berlin: S. Karger, 1922.

REGULATIONS GOVERNING THE MEAT INSPECTION OF THE UNITED STATES DEPARTMENT OF AGRICULTURE. Effective November 1, 1922. Pp. 72. Washington: Government Printing Office, 1922.

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OSWALDO CRUZ. (Impressões de um discípulo). Paper. Pp. 118, with illustrations. Rio de Janeiro: Typ. Revista dos Tribunaes, 1922.

VERHANDLUNGEN DER JAPANISCHEN PATHOLOGISCHEN GESELLSCHAFT. Zehnte Tagung. Paper. 1920.

(Continued from page 26)

WANTED — INTERN FOR 125-BED Hospital, July 1, 1923. Apply Middlesex Hospital, Middletown, Conn.★ D

WANTED — INTERNS AT GRASSLANDS Hospital, Valhalla, N. Y.; services include general medical, surgery, gynecology, obstetrics, pediatrics, psychiatry, infectious diseases, venereal and tuberculosis; salary \$50 monthly with full maintenance; Grasslands Hospital is a new fireproof county hospital, located 25 miles from New York City, with capacity of about 500 beds. Apply to Director, Grasslands Hospital, Valhalla, N. Y.★ D

WANTED — INTERN—SINGLE — 70-BED tuberculosis hospital; opportunity for training in physical diagnosis, artificial pneumothorax, x-ray and laboratory, under experienced man; \$100 per month and maintenance. Add. 5548 D, % AMA.

### LABORATORY TECHNICIANS WANTED

WANTED—THOROUGHLY TRAINED laboratory technicians and x-ray operators; male and female; for positions in all parts of the country; must be competent and well educated; A1 references required; correspondence solicited. Aznoe's National Physicians' Exchange, 30 N. Michigan, Chicago. V

WANTED—EXPERIENCED LABORATORY technician for general hospital; must be able to do blood and urine chemistry, Wassermanns; also general routine work; state salary expected and give references in first letter. Add. 5534 V, % AMA.

### LOCATIONS WANTED

WANTED — LOCATION IN TOWN OF over 5,000, west or southwest Texas; a surgical practice by qualified surgeon; will join group, buy practice or accept partnership. Add. Doctor, 305 W. Daggett St., Ft. Worth, Tex. E

WANTED—LOCATION — MARRIED MAN. Protestant, 38, graduate of A1 college, with two years' internship, desires to re-enter private practice after 10 years' institutional work; desires a small town in New York or reciprocating state, not necessarily without competition, but where a physician is needed and where a permanent home can be made; will not buy practice, but might consider fixtures or real estate at face value. Add. 5566 E, % AMA.

WANTED—TO BUY A GOOD LOCATION in live small city to develop a surgical practice; unusually good surgical training; mild climate; can invest some cash. B-511, Aznoe's National Physicians' Exchange, 30 N. Michigan, Chicago. E

WANTED—WILL BUY MINE OR INDUSTRIAL practice in Ohio, Pennsylvania or Michigan, with or without real estate; available in 10, 30 or 60 days; 15 years' experience; best of references and qualifications. Add. 5564 E, % AMA.

WANTED — IN WESTERN OR PACIFIC Coast town medical practice; drug store in connection; will buy or establish; town without drug store preferable. Add. 5579 E, % AMA.

WANTED — LOCATION FOR GENERAL practice in town of 1,000 to 4,000 by Class A graduate; 2 years hospital; Ohio, Indiana or West Virginia preferred; will buy real estate. Add. 5589 E, % AMA.

WANTED — ROENTGENOLOGIST — REFERENCE, Veterans' Bureau, civil service community, 1,000 bed charity hospital; wants place with hospital, group, clinic, where apparatus is furnished. Alexander Haggart, M.D., X-Ray Dept., City Hospital, St. Louis, Mo. E

WANTED — WILL BUY OFFICE EQUIPMENT and good will; Kansas or Missouri location; population 15,000-20,000; well established general practice; can invest up to \$2,000. B512, Aznoe's National Physicians' Exchange, 30 N. Michigan, Chicago. E

WANTED — LOCATION — COUNTRY OR city; graduate A school; 4 years' experience mine contract practice; aged 30, married, Mason; consider partnership or association with reputable physician or surgeon; prefer Oregon or Washington. Add. 5278 E, % AMA.

WANTED—THE NAME OF EVERY TOWN in the United States without a physician, and the name of every doctor with an established practice for sale. Aznoe's National Physicians' Exchange, 30 N. Michigan, Chicago. E

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**WANTED—INDUSTRIAL OR CONTRACT practice;** graduate Class A school; 15 years' private and 3 years' contract practice; 12 months' internship in large general hospital; 1916-17; healthy and energetic; best of references. Add. 5516 E, % AMA.

**WANTED—TO BUY INDIANA, ILLINOIS, Michigan or Wisconsin location in city 15,000 up;** will consider real estate; have cash. S-111, Aznoe's National Physicians' Exchange, 30 N. Michigan, Chicago. E

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### LOCUM TENENS WANTED

**WANTED—LOCUM TENENS — RELIABLE** eye, ear, nose and throat specialist to take charge of \$10,000 practice for two to three months; small city of Kansas; modern hospital; give age, civil state, training and experience. Add. 5593 F, % AMA.

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**WANTED — AN EXPERIENCED PHYSICIAN** desires locum tenens work from June 1 to August 1; qualified to do ordinary eye, ear, nose and throat work, industrial surgery and obstetrics; terms to be arranged; prompt correspondence solicited. Add. 5575 FF, % AMA.

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**WANTED — YOUNG MARRIED PHYSICIAN** wants insurance or industrial position, assistantship or good location; B.S. and A.B. degrees; M.D., A school; year internship industrial hospital; 3 years' general practice; available at once. Add. 5382 I, % AMA.

**WANTED — POSITION AS RESIDENT** surgeon or surgical assistantship; experience: 18 months' internship; graduate A school; licensed for New York and Pennsylvania; available immediately. Add. 5392 I, % AMA.

**WANTED—BY CLASS A MAN, APPOINTMENT** as assistant house physician, surgeon or industrial work; recent graduate; eastern state preferred. 244, Aznoe's National Physicians' Exchange, 30 N. Michigan, Chicago. I

**WANTED — POSITION — FORMER HEAD** of Tuberculosis sanatorium in Europe, graduate of the University of Berne, Switzerland (Michigan license), with knowledge of six languages, single, would consider a position in a high grade tuberculosis sanatorium. Add. 5567 I, % AMA.

(Continued on next page)

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(Continued from preceding page)

WANTED—SURGEON, 37 YEARS, WITH wide experience in diagnosis and surgery, seeks new connection after June 1, 1923; able to assume full responsibility; best of credentials; correspondence invited. Add. 5563 I, % AMA.

WANTED—POSITION AS MEDICAL DIRECTOR or assistant in a tuberculosis sanatorium; applicant is at present employed in a similar position in state service. Add. 5592 I, % AMA.

WANTED—SUPERINTENDENT APPOINTMENT wanted by man thoroughly familiar with every detail of hospital management; economical purchaser; can take complete charge of x-ray department. 243, Aznoe's National Physicians' Exchange, 30 N. Michigan, Chicago. I

WANTED—APPOINTMENT BY UNIVERSITY of Pennsylvania Medical School graduate; two years' postgraduate work in ophthalmology and otolaryngology; good, snappy man. 245, Aznoe's National Physicians' Exchange, 30 N. Michigan, Chicago. I

WANTED—CLASS A MAN WANTS APPOINTMENT with internist, hospital or assistantship to general practitioner; licensed in Tennessee; aged 29, single; south preferred. 240, Aznoe's National Physicians' Exchange, 30 N. Michigan, Chicago. I

WANTED—POSITION BY LABORATORY and x-ray technician; would prefer west, but would consider other locations. Add. 5572 I, % AMA.

WANTED—YOUNG LADY DESIRES POSITION; 4½ years' experience; 3 years U. S. Army; general routine laboratory diagnosis, bacteriology, clinical pathology, Wassermanns, etc.; thoroughly reliable; excellent references; will go anywhere; kindly give particulars. Add. 5583 I, % AMA.

WANTED—CLASS A WOMAN PHYSICIAN desires salaried appointment with group or assistantship to internist; can do radium work; licensed in Illinois and Indiana; excellent medical record. 241, Aznoe's National Physicians' Exchange, 30 N. Michigan, Chicago. I

WANTED—POSITION AS ASSISTANT TO doctor or as laboratory man for six months, beginning July 1, 1923; prefer Detroit, Mich.; graduate Class A medical school; no postgraduate experience; state remuneration. Add. 5570 I, % AMA.

WANTED—TEMPORARY POSITION BY Rush graduate; will assist physician or do laboratory work; preferably near Grand Forks or Fargo, N. D.; good personality; good references. Add. Box 734, Grand Forks, N. D. I

WANTED—POSITION—RADIOLOGIST—Prefer Chicago or vicinity; graduate Class A medical school; 15 years' experience; last year spent large New England hospital diagnostic department; prefer part time hospital or association with high class group; best of references. Add. 5561 I, % AMA.

WANTED—WOMAN PHYSICIAN, SWEDISH, desires hospital position as assistant; experienced in psychiatry; extreme east or west preferred. Add. 5576 I, % AMA.

WANTED—POSITION—X-RAY TECHNICIAN; graduate nurse; one year's experience in technic in A1 hospital; best references; Boston or vicinity preferred; available about May 15. Add. 5588 I, % AMA.

WANTED—POSITION AS PATHOLOGIST—M.D., 1916; thoroughly trained surgical pathology (postmortem, tissue diagnosis); several years' graduate work German and Russian universities; now pathologist state university hospital; only first-class proposition considered; Russian, Gentile; aged 30; highest references. Add. 5332 I, % AMA.

WANTED—POSITION AS INSTRUCTOR of gross anatomy in Class A medical school; have had 6 years' experience in teaching gross anatomy and desire to change locations. Add. 5399 I, % AMA.

WANTED—SURGICAL POSITION—M.D., 1916; wide research experience in major surgery and surgical pathology; 5 years' postgraduate work universities Berlin, Kasan; formerly resident surgeon in New York hospitals; now pathologist state university hospital; prefers teaching hospital; aged 30, Russian, Christian; highest references. Add. 5333 I, % AMA.

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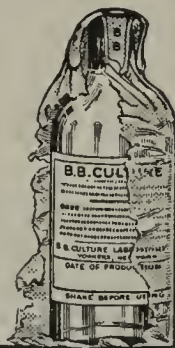
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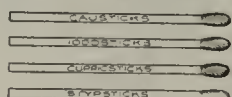
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WANTED—ASSISTANTSHIP TO UROLOGIST or surgeon; will assist with operations; capable of constructive thought; energetic. 227, Aznoe's National Physicians' Exchange, 30 N. Michigan, Chicago. I

WANTED—POSITION—PATHOLOGIST or director; 9 years' experience in all laboratory tests, including serology, bacteriology, blood chemistry, etc., and x-ray work; studied at leading institutions; former officer U. S. Army; married; go anywhere. Add. 5539 I, % AMA.

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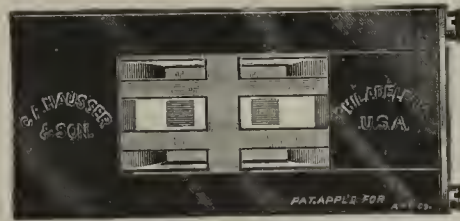
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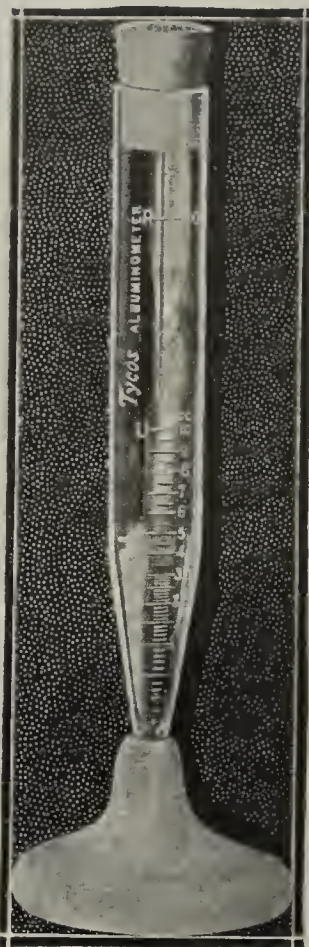
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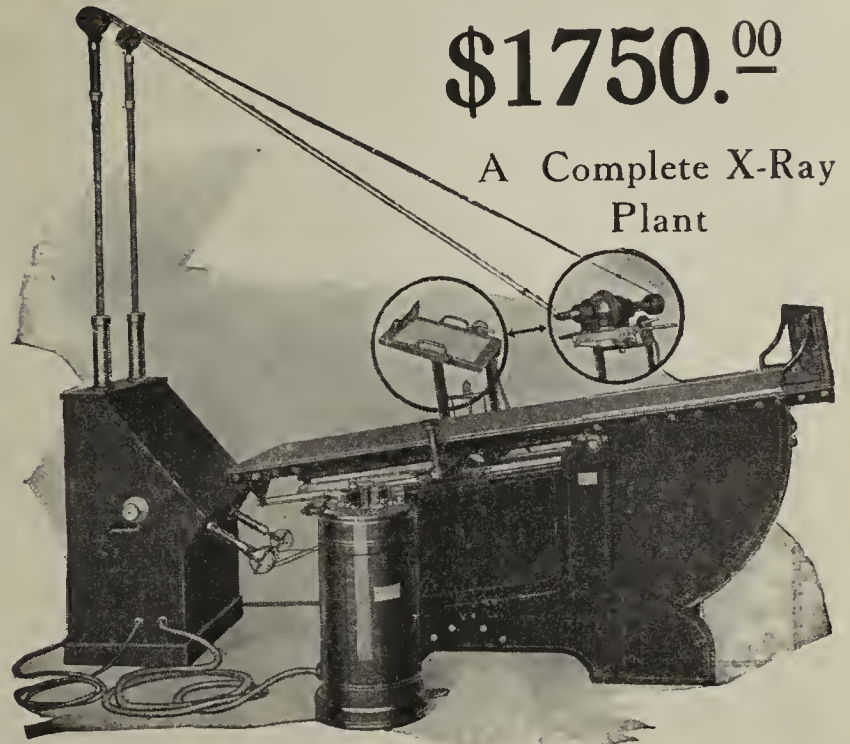
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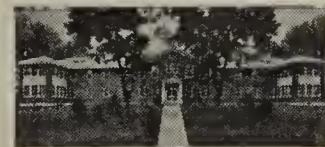
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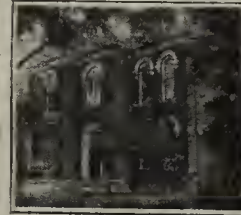
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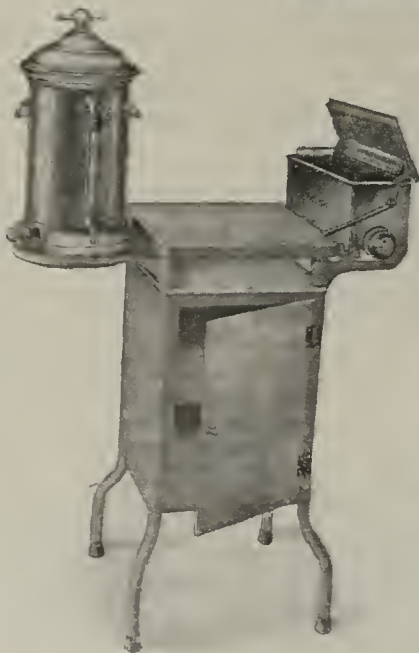
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Number 1

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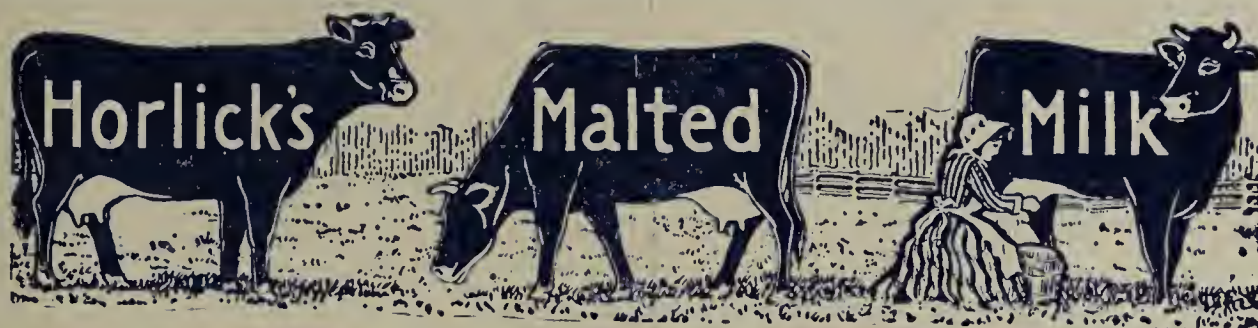
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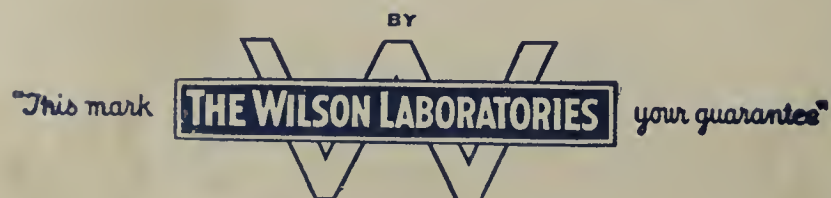
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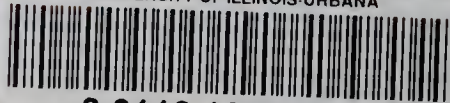








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